An Investigation of Written Discharge Communication between Hospital Clinicians, GPs, and Patients in the UK

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A thesis submitted for fulfilment of the
requirements for the Degree of
Doctor of Philosophy in Health Sciences

University of Warwick, Warwick Medical School

November 2019

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III Acknowledgements

Thank you to all the clinicians, commissioners, and patients, who took part in the involvement stages and helped shape, refine, disseminate and increase the relevance of this work. Thank you to all the patients who took part in the study. Your enthusiasm for the topic drove the research. I am both grateful for and heartened by the myriad of stories you shared. Thank you to the health professionals, practices, and hospitals that took part. Your contributions to the study and the work you do are invaluable.

Thank you to the ESRC and CCGS of Coventry & Rugby and South Warwickshire for funding and supporting this research. Thank you to the University of Warwick and the West Midlands CRN for the support with ethics, study set up, and recruitment. Thank you to the Unit of Academic Primary Care staff for always being encouraging and inquisitive.

Thank you to the staff at the University of Birmingham who encouraged me to apply for this PhD, without which I may never have embarked on this journey.

Thank you to my three supervisors, Professor Jeremy Dale, Dr Stephanie Schnurr, and Dr Emma Scott for your guidance and motivation. I am thankful for your holistic, dynamic, and inclusive approach to supervision and for always listening.

Thank you to the disability services at Warwick University who were always keen to support and advise me.

Thank you to all of my friends and family for keeping me smiling, believing in me, and persistently reminding me of the bigger goals of the work. A particular thanks to my grandfather Professor Tony Davies for imparting onto me your avid curiosity with the world and thirst for knowledge; this continues to inspire me in all that I do.

Thank you to Alila for getting me outdoors and walking and for successfully boosting my wellbeing every day.

Thank you to my lovely husband Nick for your continual and unabating love and kind words. I am thankful for your interest in hearing about each and every stage of the PhD. Thank you for always keeping me focussed on the important things in life and the silver-linings.

IV Declaration

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor in Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree.

The work presented (including data generated and data analysis) was carried out by the author except in the cases outlined below:

> *Warwick medical student Eilidh MacKenzie took part in second reviewing for screening and data extraction for the realist review (chapter 5).*

Parts of this thesis have been published by the author:

Weetman K., Wong G, Scott E*, et al.* Improving best practice for patients receiving hospital discharge letters: a realist review *BMJ Open* 2019;**9:**e027588. doi: 10.1136/bmjopen- 2018-027588

Weetman K, Wong G, Scott E*, et al.* Improving best practice for patients receiving hospital discharge letters: a realist review protocol. *BMJ Open* 2017;**7:**e018353. doi: 10.1136/bmjopen-2017-018353

Weetman, K., Dale, J., Scott, E. *et al.* The Discharge Communication Study: research protocol for a mixed methods study to investigate and triangulate discharge communication experiences of patients, GPs, and hospital professionals, alongside a corresponding discharge letter sample. *BMC Health Serv Res* 19, 825 (2019) doi:10.1186/s12913-019-4612-1

A further part of this thesis has been submitted for publication, and was accepted by the journal, *BJGP Open*, on 12th November 2019, as follows:

Weetman K, Dale J, Spencer S. *et al.* GP perspectives on hospital discharge letters: an interview and focus group study

This work was supported by the Economic and Social Research Council [grant number ES/J500203/1] and the Clinical Commissioning Groups (CCGs) of Coventry & Rugby and South Warwickshire.

The views expressed are those of the author and not necessarily those of the funders, the Department of Health, or the NHS.

V Abstract

Background:

Discharge letters are important for transferring information from the hospital to the GP. Patients are sometimes copied into these letters, but this is not standardised. Hence, many patients do not receive such letters, but the consequences of this remain unclear.

Research Aim:

To describe why patients currently receive discharge letters (or not) and how different stakeholder groups think this process should take place to optimise patient experiences and outcomes.

Methods:

The mixed methods design comprised four studies. Study 1 formed a realist review. Study 2 involved 53 GPs sampling and commenting on 489 discharge letters and GP interviews and focus groups. Letters were examined using content analysis. For study 3, patients to whom the sample letters related were interviewed (N=50). Interview and focus group data were analysed using corpus linguistics. For study 4, hospital professionals (N=46) who wrote the sample letters were surveyed and the data analysed using descriptive statistics. The studies were triangulated to build matched cases termed "quartets" which aligned the discharge letters with the viewpoints of the relating patients, GPs, and hospital professionals.

Findings:

Participants across groups were generally in support of patients receiving discharge letters, although some expressed reservations. Many patients favoured receiving a direct copy of the GP letter. However, to increase clarity and usefulness, letters should be written in a form accessible to both GPs and patients (e.g. avoid acronyms).

Additional key findings were: patient understanding is perhaps greater than clinicians perceive, clinician attitudes are a barrier to patients receiving letters, and that, negative outcomes more commonly manifested in contexts where patients *had not* received letters, rather than when they *had*.

Conclusion:

This thesis suggests several ways in which processes of written discharge communication may be improved. Patients should be offered a choice of discharge letter receipt and their preferences should be recorded.

VI Abbreviations

A&E	Accident and Emergency
ACP	Advanced Clinical Practitioner
AMED	Allied and Complementary Medicine Database
ANP	Advanced Nurse Practitioner
AoMRC	Academy of Medical Royal Colleges
ASSIA	Applied Social Sciences Index and Abstracts
BMJ	British Medical Journal
BNC	British National Corpus
CCG	Clinical Commissioning Group
CINAHL	The Cumulative Index to Nursing and Allied Health Literature
CL	Corpus Linguistics
CMO	Context Mechanism Outcome
CMOC	Context Mechanism Outcome Configuration
COPD	Chronic Obstructive Pulmonary Disease
COREQ	Consolidated Criteria for Reporting Qualitative Research
CQC	Care Quality Commission
CRN	Clinical Research Network
CT	Computed Tomography
CT(N)	Core Trainee (year of training)
DARE	Database of Abstracts of Reviews of Effects
DBS	Disclose and Barring Service
DOH	Department of Health
DS	Discharge Summary
DV	Dependent Variable
ED	Emergency Department
EMBASE	Excerpta Medica (EM) Abstract Journals
ENT	Ear Nose and Throat
EPPI-CENTRE	The Evidence for Policy and Practice Information and Co-ordinating Centre
GCSE	General Certificate of Secondary Education
GDPR	General Data Protection Regulation
GMC	General Medical Council
GORD	Gastro Oesophageal Reflux Disease

GP	General Practitioner
GPI	General Practitioner Involvement
GRIPP	Guidance for Reporting Involvement of Patients and the Public
HCA	Healthcare Assistant
HND	Higher National Diploma
HP	Hospital Professional
HPLR	Hospital Professional Letter Rating
HRA	Health Research Authority
IQR	Interquartile Range
IRAS	Integrated Research Application System
IV	Independent Variable
JLA	James Lind Alliance
KWIC	Keyword In Context
LL	Log Likelihood
MDT	Multidisciplinary Team
MEDLINE	Medical Literature Analysis and Retrieval System Online
MESH	Medical Subject Headings
MI	Myocardial Infarction
MRI	Magnetic Resonance Imaging
NB	Nota bene (take note)
NHS	National Health Service
NICE	the National Institute for Health and Care Excellence
NSTEMI	Non-ST-elevation myocardial infarction
NVQ	National Vocational Qualification
OOH	Out Of Hours
PALS	Patient Advice and Liaison Service
PPI	Patient and Public Involvement
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PRSB	Professional Records Standards Body
PT	Programme Theory
RAMESES	Realist And MEta-narrative Evidence Syntheses: Evolving Standards
RCP	Royal College of Physicians
RCT	Randomised Controlled Trial
REC	Research Ethics Committee

RQ	Research Question
S	Successful
SHO	Senior House Officer
SIGN	the Scottish Intercollegiate Guidelines Network
SpR	Specialty Registrar
SPSS	Statistical Package for the Social Sciences
ST	Specialty Trainee
UK	United Kingdom
UNTRAP	User Teaching and Research Action Partnership
US	Unsuccessful
USA	United States of America
WM	West Midlands
ZETOC	Z39.50-compliant access to the British Library's Electronic Table of Contents

1. Introduction

> *"Poor communication is not only a waste of time, it can threaten patient care… which can lead to injury and even death"* Gosbee (1998, p.642) (1)

Chapter one overviews some of the general literature on doctor-patient communication and provides the broad rationale for the project focus on discharge communication. Medical communication literature is briefly synthesised in section 1.1 followed by an outline of previous literature on discharge communication alongside current policies and guidelines in section 1.2. An explanation of my motivation for undertaking the research is in section 1.3. Based on the literature, the thesis research question is stated in section 1.4 after which the chapters for the thesis are described in section 1.5.

1.1 Medical communication background

> *"Much patient dissatisfaction and many complaints are due to breakdown in the doctor-patient relationship. However, many doctors tend to overestimate their ability in communication."* Ha *et al.* (2010, p.38) (2)

A wealth of medical and pedagogical literature (3-10) stresses the importance of successful medical communication and the effect of communication quality on clinical outcomes. Nonetheless, the need to improve medical communications is ongoing (11-15).

Effective doctor-patient communication may lead to practitioner and patient benefits (5) (e.g. increased satisfaction). One of the first and largest comprehensive studies of doctor-patient communication is Byrne and Long (1976) (16). This is the first formal study of doctor-patient communication, and, following the influential work of the *Balint Society* (17), views the patient as a person rather than a "thing" which is broken. Comparably, Ley (4) places an emphasis on patient satisfaction and outlines how practitioners may improve their written and spoken communication skills to improve patient adherence and work towards a successful treatment plan.

The work of Silverman is widely used and referenced for teaching and learning medical communication, this includes the influential books: *Teaching and Learning Communication Skills in Medicine* (18) and *Skills for Communicating with Patients* (7). These two works are often praised for their potential to improve clinical outcomes through key skills platforms such as building rapport. Other works also focus on providing guidelines for communication teaching and learning (9, 19, 20). Roter and Hall (19) aim to identify, through examination of verbal and non-verbal behaviours, shortcomings in clinical consultations based on previous research of authentic interactions in the hope of enhancing medical encounters through communication recommendations. Von Fragstein *et al.* (20) say that effective communication is as important as clinical knowledge and skills. Washer's work (9) is aimed at medical students and breaks down the key areas of information-gathering and information-giving into clear practical segments; this includes sensitive topics such as breaking bad news. Some newer research focuses on particular aspects and features of medical communication as opposed to broad-based skills, for example, Semino *et al.* (21-24) look at metaphor use in relation to end of life care and cancer. Notably, the vast majority of medical communication literature focuses on verbal communications and curriculums and evidence on written communications is more limited.

Doctor-patient communication, over the past few decades, has sought to move beyond a "paternalistic model" (25). In a paternal role, a doctor may take on a "parent" or "guardian" role and articulate what is "best" for the patient (25). The newer model of communication is *shared decision-making* (26). Within the shared decision-making model, the doctor and patient share information with each other; the clinician may focus on clinical outcomes and treatment risks where patients may emphasise their values and quality of life priorities (26, 27). Following information sharing, both the doctor and patient work toward a consensus of agreement for the decision and thus responsibility and consequences are also jointly shared (26, 27). Shared decision-making is sometimes described as putting people at the centre of their own care (28). Hence, the model is suggested to lie within the wider sphere of *patient-centred care* (27, 29-34) where the doctor-patient relationship is viewed as a partnership or teamwork and the patients' values and feelings are put at the centre of their care; this may be seen to increase patient autonomy and hence increase patient accountability for their own health. Both the concepts of patient-centred care and shared-decision making demand accomplished clinician communication skills and are ultimately hoped to improve healthcare communication and patient care (27, 29-34). Benefits of shared decision-making and patient centred-care include increased patient knowledge, decisions in line with patient values, and the patient feeling empowered (27, 28, 35). These benefits have led to wider initiatives advocating to adopt these models into healthcare practice. *The National Institute for Health and Care Excellence (NICE)* have been working to embed the shared decision-making model into everyday practice and patient care (28). *NICE* describe the intention of the model as, *"to ensure that people who deliver and receive care work together to select tests, treatments and support, based on evidence and what really matters to the individual."* (28)

1.2 Discharge communication literature and policies

"…it [discharge] is done so wrong and there are sooo many areas for improvement"

Patient participant

Despite the abundance of research on medical communication, patients continue to be dissatisfied by communication (11-15); this dissatisfaction may partly be attributed to poor intra- and inter-professional communication leading to fragmented care. It is known that communication gaps between professionals can be divisive and negatively affect patient outcomes and result in a trajectory of harm, delays, readmission and increased costs (36). Without good communication, care transitions can feel transactional and tokenistic (37). The need for high quality transition communications has surged in recent years alongside advancements in Medicine such as improved detection and treatment of diseases. As advances have been made, life expectancies have gone up and so the healthcare service is faced with an increasingly ageing population who need to self-manage and be supported and cared for in community settings. This has placed heightened pressure on healthcare services and means care must be shared between hospitals and community practitioners to maximise use of resources (38, 39).

Effective inter-professional communication to facilitate this shared care is unequivocally essential (3). This is particularly true for hospital-GP (General Practitioner) "discharge communication" as pressure rises for GPs to care for increasingly ill patients in a community setting (38, 39). Timely and accurate discharge communication between hospital professionals and GPs is important to ensure patients receive quality *continuity of care* (40, 41) and are not faced with adverse outcomes (42-44).

Discharge communication may be defined as information sent about a patient from *secondary care* (hospital health professionals) to *primary* care (General Practitioners) following patient discharge from hospital. "Primary care" is community-based and typically the first point of contact for patients reporting health issues, often to General Practitioners (GPs), with the exception of accidents and emergencies. Discharge communication may include, but is not limited to, use of "discharge letters" and "discharge summaries". Typically, discharge letters are associated with clinic appointment visits (outpatients) and discharge summaries are associated with overnight stays in hospital (inpatients); both are encapsulated in the term *discharge communication* for the purposes of this project. Written discharge communication may be sent electronically or in hard copy; they may contain information relating but not limited to a summary of the patient's hospital visit, treatment, and required followed up. The content and structure of discharge letters may vary depending on the speciality, type of hospital care (e.g. outpatient or inpatient), and the individual preferences and style of the physician who authored the content.

Despite the overt importance of discharge communication, Wilson *et al.* (13), in general agreement with the bulk of research, say that GP-hospital communications are *"in an unacceptable state"* (p.106). Looking back, several studies in the 1990s (45-47) highlighted that GPs were generally dissatisfied with discharge communication. However, in spite of this, more recent studies (36, 41, 44, 48-55) continue to reiterate that processes and content of discharge communication require improvement; discharge errors may be common and critical to patient care (56, 57).

There are a number of policies surrounding discharge communication (58-68). However, policies may be described as myopic as how to implement and sustain implementations are often lacking or based on limited evidence. Recent government efforts to increase quality of communications and particularly uptake of the practice of copying letters to patients include *"Writing to Patients – what's the big deal?"* (60) and the *"Please Write to Me"* initiative (69). At the time the PhD began, the "*Five Year Forward View"* (70) or *NHS* 5 year plan had been recently published. This document notably contains no references to written communication or letters and only refers to discharge in order to stress the need to prevent avoidable readmissions.

NHS policy at an institutional level needs to work effectively and efficiently; arguably, this is hindered if communications are poor. The rationale and purpose of this research is to highlight the need to continue to prioritise and improve discharge communications through evidencing deficits and to provide empirically-based recommendations for best practice.

1.3 Importance of discharge summaries: Personal experience

My interest in discharge communication processes stems from my experience working as an *NHS* medical secretary. My role exposed me to a wide range of communicative events and, for me, this experience highlighted that processes of discharge require improvement as organisational deficits and miscommunications can sometimes lead to consequences such as patient confusion and may precipitate unnecessary resource consumption.

I have also encountered discharge communication issues through the patient lens, the most memorable of which was when I moved house across Trusts and was discharged from my previous care providers in order that my care be taken over locally. Unfortunately, there were process issues in transferring my healthcare information and it took me some time to resolve the "gaps" in my medical record so that my specialist care plan could be continued. During the course of completing this research, I have encountered a number of people who share similarly egregious patient experiences. It is rare that I inform someone about the project and they do not have a story to tell.

My motivation to undertake this research is grounded in my healthcare and patient experiences; there is a need to improve provision of discharge communication in order that adverse events can be prevented, and patient and clinician experiences improved.

1.4 Research question

The need for further research and improvement of discharge communication is evidenced in the literature and this sculpted the primary driving research question below. Several studies emphasise the written form of patient discharge information (41, 48, 71). Current *NHS* procedures typically involve written discharge correspondence being sent to the GP upon patient discharge (61). As Closs (39) identifies, *"written communication virtually always occurs"* (p.181). Therefore, as written communication is the primary mode of discharge communications and centre-point of most discharge communication, this will be the focus of the research:

Research Question - How can written discharge communication between GPs and hospital healthcare professionals and their patients be improved?

1.5 Outline of thesis chapters

This thesis examines "written discharge communication", defined as written documentation sent from a hospital professional to a GP following patient discharge. Patients may or may not be copied into this communication. The thesis has twelve chapters, the first of which is this introductory chapter. A scoping literature review is found in chapter two which examines previous research on the topic in order to highlight different problem areas and research "gaps" where further work is required. The identified areas for further research are narrowed and developed in chapter three through patient and GP involvement work in order to generate focussed research questions for the project. Chapter four outlines the methodology and methods for the research; the protocol for the PhD has been published open access (72). Chapter four includes a summary of the research ontology and epistemology as well as ethical considerations. Chapter five forms a realist review which has been published in an open access journal (73); this review synthesises evidence on patients receiving letters in order to provide insights into when, how, why, for whom, and in what contexts this practice may *work* (or not). Following the review, an initial programme theory is developed which is continually refined throughout subsequent thesis chapters. The findings of the primary data collection phases of the research are presented in chapters 6-9. Chapter six describes the discharge letter sample, the screening and selection process for the sample, and GP evaluations of the quality of the sampled letters. Chapter seven presents the results of corpus analysis of the GP interviews and focus groups centred on their experiences of discharge communication and where deficits occur. Chapter eight outlines findings related to corpus analysis of the patient interviews which focussed on patient experiences of discharge and patient suggestions for improving processes. Chapter nine describes the results of the hospital professional survey which asked clinicians to critically reflect on letters they had written within the sample. Chapter ten consolidates all preceding chapters to elucidate the broader research findings of the thesis and contribution to knowledge. The methodological strengths and limitations are also covered in chapter ten. Within chapter ten, all results and analyses are amalgamated in order to apply realist logic to these to produce the resultant programme theory and a series of context-mechanism-outcome configurations. At the end of Chapter ten, the relevance of the research is considered alongside current policy; the project's implications for practice and future research are discussed. PhD reflections are made in chapter eleven followed by final thesis conclusions in chapter twelve.

2. Scoping Literature Review

This chapter forms a scoping literature review of written discharge communication following inpatient or outpatient hospital care. The purpose of this review was to identify literature gaps or areas for further research relating to the topic of discharge communication in order to select a focus area for the PhD research. This scoping review considers research based within and outside the UK. Section 2.1 outlines the review methods. A brief overview of reviews is in section 2.2. Review findings are grouped into 9 “problem” themes, which are covered in sections 2.3-11. Findings are summarised in section 2.12.

2.1 Introduction and methods

It is useful to review previous literature on an area before commencing research (74-76). Therefore, this thesis opens with a scoping literature review of discharge communication. No recent reviews on the specific topic were found; previous reviews focussed on specific aspects of this topic rather than providing a broad overview of evidence.

A scoping literature review is a summary and synthesis of a collection of evidence in reference to a topic with the aim to highlight any literature “gaps” or areas for further research (74-76). The advantages of this review type are: identifying research gaps, refining broad questions, and selecting a focus topic (75). Furthermore, with this type of review, the reviewer is not confined to a single pre-set search methodology, as with a systematic review (77). Literature review searching may not be rigorously systematic (77) but is still commonly acknowledged to be a *“comprehensive overview”* of evidence (76). For these reasons, a scoping review was deemed an appropriate method to synthesise and analyse previous evidence surrounding discharge communication; the main purpose of the scoping review was to inform the direction of this research and select an appropriate area of focus.

The review aim, objectives and research question are seen in table 2.1.1. Databases containing relevant evidence on “discharge communication” were initially searched up until August 2016. Publications were monitored thereafter and the review was updated with new evidence up until October 2019. Previous relevant reviews were consulted to inform the search strategy and highlight important databases to be searched. Sources searched included: British Nursing Index, *CINAHL, EMBASE, MEDLINE*, Wiley, Web of Science, Cochrane Library, *NHS* Digital, BioMed Central, Applied Social Sciences index and abstracts, PubMed, and Google Scholar. The Warwick University library was also searched. In addition, hand-searching took place and documents were also found from the literature review completed for PhD funding. Following guidelines, the review did not need to have pre-determined inclusion and exclusion criteria and thus all relevant literature was included (75, 77). Search terms are in table 2.1.2.

Table 2.1.1 Aim, objectives and research question

Aim:	To explore and examine the literature on discharge communication.
Objectives:	Using the evidence base of studies published up to 2019, the following will be outlined: 1. Recurrent problem areas in discharge communication and reasons for these. 2. Approaches for tackling these problems and their effectiveness and impact. 3. Under-researched areas within this topic and where further research is required. 4. Identify potential focus area(s) for PhD research.
Research Question:	'How can written discharge communication be improved?'

Table 2.1.2. Search terms

1. Discharge communication
2. Discharge summary(ies)
3. Discharge letter(s)
4. Discharge planning
5. Secondary to primary care communication
6. Patient discharge
7. Hospital GP communication
8. Hospital specialist discharge communication
9. Information sent to GPs following discharge
10. Discharge documents for GPs
11. Hospital discharge letters
12. Discharge documents
13. Discharge information
14. Hospital to primary care/family physician communication
15. Discharge information for GPs
16. Discharge information for family/primary care physicians
17. Communication following patient discharge
18. Discharge process
19. Communication AND discharge
20. Electronic discharge medicine information
21. Integrated care information communication to GPs
22. Hospital discharge information communication

2.2 A short overview of reviews

This section narratively overviews and summarises previous reviews identified during literature searching. Searching identified 13 reviews related to discharge communication. The reviews were extracted for a variety of information and characteristics to include: titles, date of publication, dates of included papers, explicitly stated inclusion and exclusion criteria, the review methodology and number of included studies as well as the key findings and future research implications. The results of review data extraction can be found in table 2.2 which begins on the next page.

Table 2.2 Review data extraction and findings

Review no.	**Date**	**Author(s)**	**Review type**	**Search strategy/ selection Criteria**	**No. of studies**	**Key review findings/ discussion**	**Suggestions for future research (specified by study)**
1	1996	Closs [39]	A Selective Review	2 databases 1985-1995	34	*"Main areas for concern"* (p.183) include: timing, content, format, mode of transmission, and summary contributors. Structured summaries are *"preferable"* and transmission should be *"rapid"* (p.189).	1. Evaluation of different modes and formats of discharge communication. 2. Assessment of use of MDT discharge summaries (DS). 3. Patient outcomes of different discharge communication systems. (p.190)
2	2004	Shepperd *et al.* [78]	Systematic Cochrane Review	12 databases 1966-2002 Cochrane Highly Sensitive Search Strategy. RCTS which compare an individualised discharge plan with routine discharge care.	11	Communication between discharge planners and community carers is *"clearly important"* (p.E12) The impact of discharge planning on health outcomes, adverse events and cost is unknown (p.E11).	1. Future studies should gather mortality data and consider effectiveness of hospital-community communication. 2. Development of measures to assess effects of discharge quality and delay on bed use. (p.E12)
3	2007	Kripalani *et al.* [79]	*(unspecified by author)* Narrative- style Review	None specified	-	Recommendations are made for improving discharge communication in relation to: medication information, content, format, and timing (see p.316). *"Hospitalists and other inpatient providers should not view discharge as an end to their obligation to patients but rather*	None specified

Review no.	Date	Author(s)	Review type	Search strategy/ selection Criteria	No. of studies	Key review findings/ discussion	Suggestions for future research (specified by study)
						should attempt to promote a safe and efficient transition of care." (p.320)	
4	2007	Mistiaen *et al.* [(80)]	A Systematic Meta-Review	17 Literature databases 25 websites 1994-2004 Systematic Reviews which look at effectiveness of "discharge interventions" 3 stage inclusion process.	15	The "interventions" in the reviews covered discharge planning and post-discharge support interventions. There is limited evidence of positive impacts of pre- and post- discharge interventions in relation to costs and patient outcomes. However, there is some review evidence to suggest positive effects of *"educational interventions"* (p.E15). *"Post-discharge problems continue to be an important issue"* (p.E16).	None specified
5	2009	Dunn & Markoff [(53)]	*(unspecified by author)* Literature- style Review	None specified	-	*"Though the consequences of inadequate communication have been repeatedly demonstrated, the gains from enhanced communication have not been as clearly proven."* (p.E1) Discharge planners could aid information transferral. Barriers to communication include: communication not deemed important by hospital practitioners, time, and unknown appropriate contact information. (p.E2)	1. Large trials showing association between communication quality and important outcomes e.g. patient satisfaction. 2.*" Future studies will need to have sufficient power to detect modest improvements in outcomes".* (pp. E1-2)

Review no.	Date	Author(s)	Review type	Search strategy/ selection Criteria	No. of studies	Key review findings/ discussion	Suggestions for future research (specified by study)
6	2010	Shepperd *et al.* [(81)]	Systematic Cochrane Review	Update of 2004 review (above, no.2). 4 Databases 1966-2012 5/24 RCTS that met criteria based in UK.	3	Some evidence suggests patients who received individualised discharge planning reported increased satisfaction (p.E10). The impact of discharge planning on health outcomes, adverse events and cost is unknown (p.E11). Communication between discharge planners and community carers is "clearly important" (p.E12)	1. Future studies should gather mortality data and consider effectiveness of hospital-community communication. 2. Development of measures to assess effects of discharge quality and delay on bed use.
7	2011	Motamedi *et al.* [(82)]	A Systematic Review	4 databases 1992-2009 Studies which compared computer-enabled and non-computer enabled communication.	12	Computer-enabled discharge communication tools are beneficial and have been associated with reduced adverse events, increased speed of delivery, and increased patient/practitioner satisfaction (p.403). Computer enabled discharge documents were mostly available within 48 hours post-discharge compared to a range of 1-106 days for non-computer-enabled communication (p.405).	1. Evaluation of computer-enabled discharge communication in relation to mortality and readmission rates. 2. *"Rigorous studies comparing various communication tools versus usual care are needed to better characterise the efficacy of such tools".* (p.414)
8	2012	Hesselink *et al.* [(83)]	A Systematic Review	5 databases 1990-2011 RCTs featuring interventions seeking to improve secondary-primary carer discharge handover.	36	22/31 studies which examined communication interventions *"showed a statistically significant improvement in continuity of care, patient status and primary care use"* (p.420). Despite the literature evidence on the problems surrounding lack of formal training on care handover, none of the studies were found to have an intervention on handover education or training (p.426).	1. Further investigation of interventions to improve discharge handover. (p.426)

Review no.	Date	Author(s)	Review type	Search strategy/ selection Criteria	No. of studies	Key review findings/ discussion	Suggestions for future research (specified by study)
						"Given the complexity of interventions and outcome measures, the literature does not permit firm conclusions about which interventions have these [positive] effects." (p.417)	
9	2013	Alberti & Nannini [84]	A Literature Review	A range of Medical, Allied Health & Health Sciences databases 1995-2010	21	Effective communication of discharge instructions & checking patient comprehension of these instructions is vital; evidence suggests this requires *"simplification of material"* (p.193).	1. Further investigation of patient education interventions in relation to different patient learning styles.
10	2013	Spinewine *et al.* [85]	A Systematic Review	5 databases 1995-2010 Trials looking at medication intervention(s) for discharge patients.	14	Adverse event risk was shown in some studies to be reduced through improved healthcare professional communication AND/OR patient education.	1. Targeting of high-risk populations. 2. Use of sample size large enough to be able to measure effect of medication interventions on patient outcomes such as preventable adverse events.
11	2014	Wimsett *et al.* [86]	A Systematic Review	5 databases Medical & Allied Health databases & Google Scholar ≤2013 Studies which listed content components of discharge summaries.	32	4 content components which were *"consistently ranked as important…were: discharge diagnosis, treatment in hospital, results…follow up plan"* (p.435).	None specified

Review no.	Date	Author(s)	Review type	Search strategy/ selection Criteria	No. of studies	Key review findings/ discussion	Suggestions for future research (specified by study)
12	2015	Mills *et al.* [87]	A Narrative Literature review	5 databases Medical, Allied Health and Social Sciences databases 2000-2014	15	Electronic systems of communication made all documents entirely legible but did not eliminate medication errors in discharge communication.	1. Formal evaluation of the effect of electronic prescribing and medical information solutions on discharge communication.
13	2015	Unnewehr *et al.* [88]	Systematic Review	4 databases 1966-2015 Articles on specified components of discharge communication: "content" "processing" "communication" (see p.631)	234	Most of the articles (n=111) focussed on content (p.633). *"A DS should always be as short as possible"* due to time pressures on healthcare professionals and for clarity (p.635). GPs and hospital doctors have different DS expectations. UK guidelines are *"valuable"* and further ahead of other locations (p.637). *"To Improve patient care and safety as well as working conditions for doctors, the current deficits in teaching, discussion and research on this topic must be addressed"* (p.637).	1. Improving uptake of simple teaching interventions of how to write discharge summaries. (p.637)

Overviewing the reviews illuminated that the impact of discharge communication quality on outcomes remains uncertain. Small sample size and a lack of "large trials" in the literature were criticized (82, 85). Notably, many reviews tended to focus on negative outcomes and effects of poor communication.

The rapid overview of reviews and full review searching for previous evidence produced a number of results. In order to analyse the searched and selected data, a rudimentary "thematic analysis" (89, 90) was performed. Literature and documents relating to the general topic of discharge communication were read, re-read and then annotated for ideas relating to: problem areas of discharge communication, how discharge communication may be or needs to be improved and where further research or work is required. During this process, different areas for improvement or problem areas "themes" surrounding discharge communication began to emerge; these were noted and iteratively refined during evidence interrogation until all literature and documents had been sorted into "themes". The final nine problem area "themes" were:

1) Mode and timing of communication
2) Content of letters
3) Structure or form of communication
4) Practitioner training in provision of discharge communication
5) The varied and undefined writers of the communication documents
6) Patient information
7) Vulnerability of high-risk patients
8) Safety issues
9) Medication errors

Evidence within each theme was narratively synthesised and so the problem area "themes" formed the sub-headings to structure this review as presented in the sections that follow.

2.3 Mode of discharge communication: Timing and medium

Literature on "timing" looks at time lapses between patient discharge and receipt of the written discharge communication by the GP. Several early UK studies (1980s and 1990s) focussed on this aspect of discharge communication (91-

96). Adams *et al.* (96) specify 3 days should be the maximum time taken for discharge letters to arrive. Penney (92) summarises that, *"the failure of discharge summaries to arrive leads to errors, omissions, confusion, and all that follows from poor communication."* (p.29) (92) A more recent UK article which considers discharge timing is Barr (2010) (97). Barr's article in *Digital Health (97)* emphasized that almost 50% of GPs do not receive discharge information quickly enough.

"Timing" of discharge communication has also been researched in Australia (13, 98, 99), Canada (100-102) and the USA (103, 104). Comparably to UK research, these studies all report problems with discharge communication timing and receipt. Similarly to Barr (97), Belleli *et al.* (98) and Polyzotis *et al.* (102) found only around half of discharge summaries were reaching GPs within an adequate time-frame. An audit by Wilson *et al.* (13) revealed only 27.1% of discharge summaries were received by the patient-nominated GP; this alongside the level of content accuracy is described as "unacceptable". Van Walraven *et al.* (100) examined 792 discharged patients and found discharge summaries were commonly unavailable for patient visits to their follow up physician. They (100) wrote, *"summaries were most commonly unavailable because they were not generated in time for follow-up visits (20.0%) or were not sent to follow-up physicians (50.8%)"* (p.737). Li *et al.* (99) examined the relationship between delays and discharge summary timing and patient readmissions and reported an association (99). Overall, the UK and non-UK research suggests that timing of discharge documentation is important and should be relatively rapid but problems with delays remain.

Timing of discharge communication is in part dependent on communication methods. Several early studies from the 1990s considered the benefits of electronic discharge communication and suggested this holds the potential to improving timeliness and receipt; studies were from both within the UK (96, 105, 106) and outside the UK (107-110). More recent UK research (111-114) has continued to explore different communication modes. Stetson *et al.* (114) reported that an electronic discharge summary system in the UK saved the hospital money. Barr *et al.* (113) investigated automated processes of electronic discharge information transferral. They found an increase of 9-76% of summaries sent within 24hours of discharge and the study GPs reported *"a noticeable improvement"* (113). Comparably, some UK research explores electronic discharge notification systems (111, 112).

Research in Canada (115) looked at cost-effectiveness and concluded electronic discharge summaries were more cost effective than usual care. There is also research focussing on use of a *shared* electronic medical records to facilitate discharge communication in Australia (116) and the USA (117). However, these studies suggest that the legal implications and difficulties of a shared record need resolving before distribution can take place.

Crucially, not all research positively evaluates electronic interventions. Computer-generated discharge letters are described as "deficient" in UK research looking at 300 discharge letters by Jansen & Grant (118). Abbas *et al.* (119) examined the effect of electronic mediums and found a decline in discharge summary quality after electronic formats were introduced; they suggest reasons for this are unclear (119). Shannon (36) suggests that asynchronous communication facilitated by electronic resources in the UK has reduced physician-physician contact which can be disadvantageous for complex cases. Similarly, an Australian study (120) argues that computerised discharge summaries tackle some communication problems (e.g. timeliness) but not others (e.g. quality).

An Australian RCT in 2010 (15) examined different modes of discharge communication. The RCT (15) found fax to be the preferred communication method by primary carers but summarised that, *"although fax is still the most preferred, email has many advantages that could potentially allow it to replace fax as a standard mode for delivery of discharge communication"* (p.167) (15). Comparably, in 2007, Lane & Bragg (121) surveyed 147 GPs in Australia on their preferred modes of discharge communication; the results showed preference for letter and fax communication and minimal support for email (121). Notably, there is limited UK research on use and effects of email for discharge communication (122).

Despite the somewhat limited UK evidence on email and electronic discharge communication, in October 2015, *NHS England* (123) published new "Edischarge" guidance. This guidance specified that discharge summaries should be communicated electronically, either by secure email, or other electronic transmission to the GP. These new guidelines were hoped to reduce patient risks at point of discharge. Studies evaluating the impact of this new guidance were not identified during this review.

Overall, although use of electronic communications is increasingly popular, they do not necessarily eradicate problems. Further research is needed to look at use of email.

2.4 Content components: What is and is not being said?

Van Walraven and Rokosh (12) argue that in order for inter-professional communication to be improved, the components comprising high-quality discharge summaries must be defined. A Systematic Review (88) in 2015 found 111/234 discharge communication articles focussed on letter content. Another Systematic Review (86) also looked at content components of discharge documents (N=32). Components of discharge documents ranked important (≥80%) by respondents were: *"discharge diagnosis, treatment received, investigation results and follow-up plan"* (p.430) (86). However, in the review, Wimsett *et al.* (86) advised that, *"the adequacy of the components rather than just their presence or absence should also be considered when assessing the quality of discharge summaries"* (p.430) (86).

Some early examples of UK research (1990s) noted problems with discharge letter content (96, 105, 124). One study requested primary care physicians to list and rank what they consider to be the most important information content items in a discharge summary and found "discharge diagnosis" to be ranked top (96). Comparably, 1200 clinicians (GPs and hospital-clinicians) were asked by Solomon *et al.* (124) what information they thought should be included in discharge summaries. The results showed diagnostic information, investigation results, treatment, medication information, follow-up plans, and information given to the patient were ranked highly by the practitioners (124). Similarly to early UK findings, early Australian (11) and Canadian (96) research found "discharge diagnosis" to be ranked number one of discharge components by family physicians.

Recent national (51, 125-129) and international (48, 101, 102, 130-143) research continues to report issues with discharge letter content. Studies tended to gather opinions on letter quality and content from GPs (102, 129, 131, 132, 134, 140, 142, 143)**.** Literature frequently reported a "lack" or insufficient information relating to "follow up" (48, 51, 127-129, 133, 141, 143) and pending test results (101, 136, 137, 139, 144). Newer

UK research finds problems with quality of medication information (51, 145) and suggests this affects patient safety. Cresswell *et al.* (128) summarise that inadequate documentation of discharge components can impact patient care (128).

Kind *et al.* (138) write that there is no defined resolute way to produce a high quality and complete discharge document. They found components such as “primary diagnoses” and “admission date” or, “historical expert-recommended components”, were far more frequently included in discharge documentation than “actionable components” which includes items such as “goals”, “pending studies”, “diet” and “activity instructions” to name a few (138). Kind *et al.* (138) expound that omissions of “actionable components” can hinder patient care plans which can lead to readmissions.

To counter content issues, it is argued by Lees (125) and Hammad *et al.* (126) that standardisation of the discharge process could increase patient safety and ensure inclusion of critical information (e.g. medications). Implications for patient safety are discussed by Hammad *et al.* (126) who describe an association between poor communication and patient harm. Relatedly, in 2013, the *Royal College of Physicians* (*RCP*) (London) (61) generated new standards for content and structure of patient records to include discharge records. This has since been updated in 2015 by the *Academy of Medical Royal Colleges (AoMRC)* (146) and again in 2018 by the *Professional Record Standards Body (PRSB)* *(64)*. Prior to these documents, there was “A Clinician’s Guide to Record Standards” published by the *AoMRC* (147). No major or notable differences were observed in relation to the “discharge summary” guidance or templates between the documents. These standards recommend clinical discharge headings and feature an example discharge template to be used for patient records. Clinical headings (61) for the discharge summary within these documents include: referral details, patient demographics, social context, special requirements, participation in research, admission details, discharge details, clinical details, diagnoses, procedures, clinical summary, assessment scales, legal information, safety alerts, medications and medical devices, allergies and adverse reactions, investigations and procedures requested, patient and carer concerns, information given, plan and requested actions, person completing record, and distribution list. Articles which evaluate the use and effects of these guidelines in respect of hospital discharge were not found during this review.

Comparably to the UK, in the USA, *The Joint Commission* released similar discharge summary content component guidelines in 2008 (148) but, differing to *RCP*, they specify these content components are compulsory. Some studies (135, 141) compare summaries against these USA standards. Kind & Smith (135) found preliminary results indicated 88-100% of summaries included 5/6 of the specified commission components but also suggested that anything less than full compliance to *compulsory components* is concerning in terms of patient safety.

In summary, research reported unsatisfactory discharge summary quality and content. Follow up and pending results information was frequently omitted. Content components ranked as important by UK and USA research and guidelines were: diagnosis, treatment, medications, investigations and care plan. Overall, content omissions and quality issues have negative implications for patient safety and need addressing.

2.5 Evaluating letter forms: Narrative and structured discharge letters

Discharge letters or summaries may manifest in structured template or narrative/dictated forms. A "narrative" letter is whereby text is freely entered with no pre-determined letter structure or content specifications; "narrative" letters are often dictated verbally using Dictaphones and then transcribed by secretaries. A "templated" or "structured" letter is whereby the hospital or trust has a specified format for producing the letter; this often involves a sheet or electronic document with set boxes to complete and a structure for entering content (e.g. date of admission). Structured letters may or may not have multiple choice options or drop-down menus for entering content. Template exemplars for model structured letters are often available through the Trust or health governing body as guidance for the expected quality or standard for using this format.

One early UK study (96) (1993), explored utilisation of structured summaries and suggested a key benefit of this form is that secretarial typing time is eradicated which may reduce delays seen with narrative summaries. Several UK-based studies evaluate the form and structure of discharge letters (43, 92, 93, 149-153). These studies generally found structured formats more advantageous and favoured by GPs (39, 152). Structured headings were suggested to make the document *"easier and quicker to read"* (152) whereas lengthy narratives were described as making it difficult to extract salient information (93). Structured templates for stroke patient discharges were shown by Mäkelä *et al.* (43) to improve completion and content of discharge documentation.

Studies outside the UK (138, 154-158) have also criticised unstructured discharge summaries and demonstrated GPs preference for structured discharge letters (142, 159). USA research (154) suggested narrative forms, *"invite inaccuracies".* Many USA studies looked at the effect of standardised formats on summary *quality*. Positive quality effects (151, 155, 157) and nil effects (156) were observed. An intervention study in Canada by Afilalo *et al.* (160) looked at structured letters in terms of effect on continuity of care between the Emergency Department and GPs; they found a positive effect. Another Canadian study (110) noted advantages of a structured discharge format in terms increased timeliness and preference for this format by the hospital staff. Timeliness and quality improvement were also referenced as outcomes of standardised discharge letters in a recent (2019) French study by Schiele *et al.* *(161)* which focussed on discharge of acute myocardial infarction patients.

Benefits of structured forms expounded from the literature included: faster and clearer documents, minimal administrative workload, increased document completion, and improved content. Disadvantages with narrative forms included: time-consuming to produce, secretarial typing typically required which can cause delays, and difficult to find important information. Notably, both forms continue to be used in practice. Given the benefits of standardised templates, future research should perhaps cease evaluating letter forms and instead devise feasible interventions for integrating a standardised system.

2.6 Junior doctors producing discharge documentation: Is training required?

One reason for discharge summary inaccuracy is suggested by Callen *et al.* (41) to be the junior status of the doctors often producing them. This suggestion has been periodically asserted by different research in the UK (45, 162, 163) and outside the UK (108, 164). An audit of discharge summaries (162) in the UK revealed error rates for consultants was 2% and 17% for house doctors; this is a significant differentiation which can be rationalised by the fact that junior doctors are given minimal training on writing summaries (128, 165). This suggests better training provision is required (128). Yemm *et al.* (165) reported that over one third of doctors in their study (n=36) said they, *"felt inadequately prepared for writing discharge summaries"* (p.125) (165). The importance of discharge documentation education is also emphasised in USA research (53, 138, 166, 167). Training provision was criticised and considered insufficient (166), including by house doctors themselves (168). Dunn & Markoff (53) specifically suggest that teaching needs to convey the consequences of poor discharge information transferral.

Following suggestions for training, more recent studies, both within and outside the UK, have responded by exploring discharge education interventions for quality improvement (52, 128, 157, 166, 169-175). Feasible and "simple" educational sessions in the UK were tested by Shivji *et al.* (173) in 2015, who saw a marked improvement in discharge summary quality and Primary Care Provider communication post-intervention. In the USA, Talwalkar *et al.* (166) implemented an educational program and improved discharge summary quality followed. An USA educational program was similarly implemented by Axon *et al.* (157) and the results indicated that the program was feasible and improved the participant's confidence at producing summaries as well as the summaries themselves (157). Other USA studies also demonstrated discharge summary improvement through educational interventions (167, 172, 176). One intervention saw discharge summary completion <24hrs rise from 38% to 73% (172); this is a marked improvement. Tejedor-Sojo *et al.* (177) took a slightly different approach and utilised financial incentives alongside an "audit and feedback tool"; this was reported as effective.

In summary, studies indicated educational interventions can be feasible and improve summary quality. Future research needs to implement and sustain such interventions.

2.7 Who should be writing discharge communication?

The *British Medical Journal*, in 2008 (178), published the article, “planning a patient’s discharge from hospital” in which it discussed the importance of discharge planning and the coordinator role of the junior doctor. Across the globe, junior doctors, interns and house officers tend to be responsible for discharge planning and documentation; the details and implications of this were discussed in section 2.5. However, some research argues in favour of a multi-professional approach to discharge communication. Wilson *et al.* (13) said that, in order to improve discharge summary quality, nurses and other allied healthcare professionals should contribute to the content; several studies have explored this.

Some studies focussed on the feasibility and quality of discharge summaries produced by nurses (179-183). In the UK, Bench *et al.* (182) explored the benefits and feasibility of giving patients personalised discharge summaries produced by nurses. The research comprised an RCT of 51 summaries (182). The summaries were evaluated and the study found that it is feasible for nurses to produce discharge summaries; the majority of summaries were produced in <15minutes (182). Studies in the USA have also investigated nurse involvement in discharge communication (179-181). In 1991 research by Siders & Peterson (179), nurses received support through an “automated discharge summary function” which allowed them to produce legible and clear individualised care plans for patients; intervention benefits were saved time and overall discharge improvement. More recent USA research in 2011 (180) similarly reported nurse practitioner discharge involvement improved communication and saved time. Comparably, Stauffer *et al.* (181) trialled a USA nurse-led transitional program and found the intervention reduced 30-day readmission rates. A USA editorial by Dunn & Markoff (53) discusses a slightly different approach; they suggest integration of a “discharge planner” into the discharge process to improve information transfer.

In summary, there is reasonably limited research on differing contributors and multi-professional approaches to discharge communication. However, the existing evidence demonstrates that nurse involvement may be feasible, and possibly improve communications.

2.8 Cc Patient: Should patients be copied into discharge communication?

Fletcher (3) described, *"the age-old problem of how much a patient should be told about his condition"* (3). It is a well-established practice that the physician who is to follow up patient care should receive written discharge information. In the UK, patient-copied letters remains to be "good practice" (63, 69, 184, 185) since 2003 and not a requirement; the result is simply that some patients receive letters and some do not (62, 63, 186). The *Department of Health* describe patient copies of letters as a "right" and recommend patients should be copied in where appropriate as a "rule" (62, 63); the *NICE* guidelines also recommend that letters between physicians are copied to patients (59). The purpose of the *NHS* plan initiative (62) was explicated by White (187) to be to improve practitioner-patient relationships, patient informedness, quality of information patients receive, and encourage open, honest information channels. More recently in 2018, the *AoMRC* released the "please write to me" (69) initiative. The purpose of the initiative was to encourage doctors to write directly to patients in simple plain English and copy the letters to the GPs rather than the common convention to write to GPs and copy in patients. The *AoMRC* suggested this initiative could increase patient understanding and resolve any awkwardness of patients reading letters about themselves in third person (69).

Several UK studies suggested benefits of copying patients into their letters (187-193) and evidenced high rates of patient preference for this practice (188-193). O'Driscoll *et al.* (188) found 94% of patients in their study (N=63) wanted copies; they reported that receiving letters increased patient understanding. In another study, 95% of patients (total N=500) favoured receiving letter copies (191). Minhas (190) also observed patients generally favoured and reported high satisfaction rates when receiving copies of healthcare correspondence. Similarly, Pothier *et al.* (191) found 93.4% of patients understood the letter contents and reported minimal queries (n=3). A slightly lower patient preference rate of 76% was reported by Marzanski *et al.* (189) Shee (192), in regard to patients copies, wrote in the *BMJ Letters* that, *"informal feedback from patients has been uniformly favourable".* Shee (192) declares adoption of the practice advises others to try it suggested that it takes minimal time and makes patients feel more involved in their care.

Thornber (193) claims to *"agree with the general principle"* of patient letters but does propose the following: use of plain English, doctors require letter training, separate patient letters are unnecessary, and letters must receive professional scrutiny.

Despite prior studies outlining benefits of this practice, more recent research suggests there is still a need for further research (194). A recent rapid review by Harris *et al.* (194) in 2018 in the UK found a lack of high quality empirical evidence on benefits of patients receiving letters. They concluded that, *"future studies should explore the content and accuracy of copy letters, how they are used and how patients respond to them"* (p.2080) (194).

Some other UK studies form counter arguments or raise concerns regarding patient copies (189, 190, 193, 195-197). The anticipated benefits of patient copies are disputed by Main (196) who argued that, because letters are written in "medical speak", it is *"fantasy to suggest that letters written like that will ever be meaningful, without further explanation, to most patients"* (p.1369). Patient misunderstanding of medical letters and queries relating to content are also concerns raised by McKinstry (197). Additionally, McKinstry (197) expresses worries about the cost of this practice and contends it is necessary to evaluate *"whether the potential overall benefit is worth the cost"* (p.1369) . Marzanski *et al.* (189) wrote that,

> *"although the majority of the patients we interviewed wished to have the copy letter, many of them expressed concerns about confidentiality, the risk of distress and the cost of the process"* (p.56) (189).

The value of patients receiving discharge letters or summaries is researched by Santana *et al.* (131) in Canada. The patients in the study were reported as appreciative of receiving a letter and rated their experience highly. On the contrary, Choudhry *et al.* (198) assert that discharge summaries in their USA study were found to be too advanced in relation to literacy and educational level to ensure patient comprehension. The same assertion was made by another USA study (2018) (199) which suggests that patient materials are currently more difficult to read than recommended and that these need to be written to appropriate literacy standards and readability levels and content. Another recent study in the USA (158) surveyed physicians and reported that, *"although 74% perceived patients as an important audience of discharge summaries, only 43% agreed that* *summaries 'should be written in language that patients…can easily understand'"* (158). Comparably, one USA study (200) found that despite standards (201) which encourage provision of written information (and verbal) to patients that meets their health literacy needs, only *"20% hospitals reported routinely screening patients' for literacy"* (200)(p.103). Furthermore, they found that hospitals who routinely screened for health literacy had higher patient-reported drug adherence and lower readmission risks (200). Similarly, a more recent (2019) USA study by Swartz *et al.* (202) found that low health literacy of patients is,

> *"associated with poor understanding of injuries and treatment provided to them, leading to a decrease in compliance with discharge instructions and longer time to recovery"* (202) (p.187).

One recent study (2019) by Glick et al (203) recommended implementation of literacy-informed interventions in order to increase and promote comprehension of discharge instructions.

Carbon copy letters for paediatric cases may be more complex as the parent or carer would typically be copied into the discharge letter instead of or as well as the child, depending on the age of the child and the age of consent in the discharge locality. Therefore, within these cases the letter is often being read by someone other than the patient and so these cases are distinct from adult patients who have capacity to consent, where the patient themselves would receive the letter. Research on paediatric discharge letters is more limited than that of adults. However, a recent systematic review (204) by Curran *et al.* in 2019 has been conducted in this area; the review was set in the USA and focussed on parent and carer comprehension of discharge instructions within Emergency Departments (204). The review found that several factors may impede upon parental comprehension of discharge instructions to include: parental stress, health literacy and the *"fragmented nature of the communication in the [Emergency Department] setting"* (204)(p1).

Some studies moved beyond the notion of "copying" letters to patients and instead examined provision of personalised letters (158, 205-207). Hall *et al.* (206) looked at provision of written emergency department discharge instructions to patients in the USA and found this may have contributed toward a "safer and higher quality discharge". In Australia, Lin *et al.* (207) found this intervention increased patient understanding of their condition and discharge plan. However, Lin *et al.* (207) suggested further evaluation of the intervention is required. Comparably, in the Netherlands, Buurman *et al.* (205) concluded that healthcare professionals and patients rated use of a personalised patient discharge letter “positively”. In the USA, physicians were reported (158) as agreeing that patients should have separate discharge summaries to primary care physicians. Recent work (2019) in Germany (208) focusses on digital channels and theorises that digital communications such as patient portals for accessing information could improve hospital-patient relationships and support shared decision making.

It is important to note most of the above studies discuss patient letters generally, not discharge letters specifically. However, the underlying principles and outlined advantages and disadvantages are still applicable and relevant to discharge letters. In summary, this section has addressed research on patient discharge letters in terms of advantages (increased understanding, open communication channels, and increased patient satisfaction) and disadvantages (patient distress, cost, and patient misunderstandings/low comprehensibility). Further research is required, particularly in relation to effects of patients receiving letters.

2.9 Patient vulnerability and groups at higher risk post-discharge

Elderly patients are an example group of vulnerable patients who are at higher risks during care transitions due to their often complex needs and multiple comorbidities (209-211); the GP requires the relevant information to continue care. In the UK, timing of sending discharge summaries is emphasised by Closs (39) as being especially crucial for the vulnerable and frail elderly. Closs explained timing should be rapid and discharge documentation for the elderly preferably needs to be received on the day of discharge (39). Timing is also stressed by Williams & Fitton (212) who looked at unplanned readmissions of elderly patients in the UK. They concluded that the time taken to send and receive discharge communication for elderly patients causes *“concern”* (212). UK research suggested that although documentation errors and omissions are common, there is greater negative impact on patients with little family or social support (51), such as elderly patients. One study (51) concluded by labelling UK discharge handovers “haphazard” and unsafe and stating that patients are not being empowered to transfer and act on discharge information.

Discharge Communication research outside of the UK also focused on vulnerable patients to include: other European countries (213), Canada (210, 214-217), Australia (218), and the USA (211, 219, 220). These studies unanimously stress that discharge communication for vulnerable patients requires improvement. Constitution of "vulnerable patients" within studies included cardiac patients (214-216, 218, 219), stroke patients (213, 221), and dialysis patients (216); notably, these are all groups that may be described as *medically complex*. Children or paediatric patients may also be described as vulnerable and studies suggest discharge communication for these patients needs further improvement (204).

Overall, research indicates that discharge communication for vulnerable patients requires improvement as substandard communication has implications for *patient safety*.

2.10 Adverse events: How does quality of discharge communication affect patient safety?

Poor quality discharge communication can negatively impact patient safety and increase the risk of "adverse events" (166). Forster *et al.* (222) define an "adverse event" as, *"an injury resulting from medical management rather than the underlying disease."* (p.162) (222). Subsequently, an "adverse event" may include but is not limited to hospital readmissions (128, 223-226), care discontinuity (51), worsening symptoms (222), patient harm (51) and mortality (222, 227).

Many UK studies considered safety issues (228) and adverse events (51, 128, 229, 230) resulting from poor discharge communication, particularly in terms of hospital readmissions . Williams & Fitton (212) concluded 58% of emergency readmissions could have been prevented. Another study (224) documented 61% of readmissions were preventable (n=108). Inadequate discharge leading to readmissions is explored by Sackley & Pound (14) in stroke patients; their results indicated that discharge document information was often incomplete and insufficient to provide continuity of care (14). Witherington *et al.* (224) focussed on readmission in older patients. Their results showed 22% of patients experienced discharge communication gaps and it is highly likely these “gaps” contributed towards preventable readmissions and other adverse events (224). Poor care transferral can result in care discontinuity, patient harm, hospital re-admissions, and other adverse events (128) which are costly to the *NHS* and suggested to be “often avoidable” (51). Notably, one study (225) did not observe an association between discharge documentation quality and readmission rates.

Studies in the USA (138, 166, 231-234); Canada (235), Hong Kong (236), Austria (237), Norway (238) and Australia (41, 98) reported risks, incidents and patient safety issues surrounding discharge transitions. Corresponding to UK research, post-discharge adverse events are evidenced as high in the USA (53, 79, 133, 239-242). Much USA and Canadian research examined rates of hospital readmissions (71, 104, 141, 227, 243-252). Many of these studies were specific to heart failure patients (104, 243-245, 247, 249-251) which is apt given that it has been reported that almost 25% of heart failure patients in the USA are readmitted within thirty days of discharge (250). Some literature evidences that high quality discharge summaries may be linked to reduced readmission rates (104). On the other hand, Van Walraven *et al.* (227) looked at discharge information continuity in relation to death and readmission but suggested no direct influence. Other studies also reported minimal association between discharge processes and readmission rates (244, 245).

Despite the strong focus on “readmissions” in the literature, there were projects which looked at “adverse events” from different perspectives (80, 102, 154, 241, 253-256). One USA study by Forster *et al.* (222) looked at the effects of poor discharge communication on symptom control, unplanned appointments and tests, and mortality (222); the study found that one in five patients suffered an adverse event and one in three of these were preventable (222). Other USA and Canadian research covered: adverse event detection through patient interviews (254) and use of “trigger words” (257) in discharge summaries, patient safety considerations (253), and reduction of adverse events through improved secondary-primary care provider communication (102, 255, 256). In the UK, Mistiaen *et al.* (80) systematically reviewed discharge interventions aiming to reduce post-discharge problems. However, they found only limited evidence to indicate the interventions were effective.

Adverse events and safety issues following hospital discharge are reported as globally prevalent, yet there does not seem to be universal agreement on how these can be reduced. Future research should continue to explore adverse event prevention and reduction.

2.11 Medication: Errors, omissions and changes

A review of approaches for improving medication management has already been conducted in 2013 (85). The review concluded, *"despite the fact that medication-related discontinuity of care is an important public health issue, the evidence on the effect of approaches for optimization remains limited"* (p.414) (85). However, the review only included studies preceding 2010 and so it is valuable to consider findings of newer research (≤2019).

UK studies continually evidenced a need for improving medication accuracy (258-261). One audit of 100 discharge summaries reported the accuracy of medication information was only 64% (261). Nonetheless, this audit was followed up with the introduction of a formal discharge summary guideline which increased accuracy to 83% (261). Research outside the UK also evidenced substantial rates of medication errors, and omissions. Problems have been reported in the USA and Canada (262-264), across Europe (265-268), Asia (269), and in Australasia (44, 270). *Medication reconciliation* was researched in the USA (271, 272) and Spain (273).

Changes to the patient's medication are often made during the hospital visit which need communicating within discharge documents. UK research as recent as 2018 indicates that better communication is needed between hospital and community clinicians regarding medication changes and reasons for changes (145, 259, 274). Nevertheless, drug changes are only part of the picture and high priority should be given to research which addresses whether changes are maintained (259). Relatedly to UK-based studies, research across Europe (275-277), Singapore (269), Australia (164), and in New Zealand (278) looked at communication of medication *changes*. Similarly, to UK evidence, *reasons* for medication changes were desired by clinicians (269, 277, 279). A New Zealand study considered patient experiences and found that 16 of the 40 participants were unaware of the reasons for their drug changes (278).

Given the issues with discharge medication information, it follows that several studies trialled “interventions” for improving communication (280-282). In the UK, this included use of an electronic prescribing system which had positive quality effects (282) and pharmacist interventions to reconcile and reduce discrepancies (282); this latter intervention has also been studied in research outside of the UK (280, 281, 283, 284).

In summary, research inside and outside the UK reports issues with medication information, particularly around communication of medication changes. Further research should look at sustainable interventions for medication reconciliation.

2.12 Scoping review summary

This chapter has built upon previous research on discharge communication through reviewing evidence through a narrative scoping style which has contextualised research by location. The review has exposed under-researched topics, recurring problems, and identified where further research is required both within and outside the UK. Review findings suggest further research is required across all of the identified nine problem areas; this is not practicable for a single project and so it is necessary to select a focus, which is undertaken in the next chapter. This review implicitly forms part of the rationale for this research. The main review findings, relating to the UK, are summarised in table 2.12 on the next page.

Table 2.12. Chapter 2 review main findings

Discharge communication area	**Summary of main findings from scoping review**
1. Mode, timing and medium of letters	Discharge letters are not always received by physicians in an adequate timeframe. Quality impacts and ethical and legal implications of technological interventions need further research.
2. Letter content	Discharge letters do not always contain sufficient detail relative to content components considered important to recipients e.g. diagnosis. Reasons for content variation, despite availability of guidelines, needs further research as well as better understanding of content items and details important to those involved in discharge communication.
3. Patients receiving letters	Patients do not always receive letters. Reasons for this inconsistency and variation were unclear and needs further research. The format of patient letters varies, and include patient personalised letters and receiving a copy of the letter sent to the GP. The implications of these differing letter forms in terms of cost-benefit analysis and effects on patients are indeterminate and require further research.
4. Letter form	A variety of letter forms may be used for discharge communication, such as dictated letter forms and structured discharge summary templates. Future research should assess feasibility and implications of interventions for integrating more standardised systems.
5. Letter authorship	There are potential issues with junior doctors and inexperienced practitioners producing discharge letters without adequate support. Support interventions such as training may increase discharge quality. Further research is needed to design, implement and evaluate feasible and sustainable training and support interventions.
6. Letter quality related to safety implications	Poor quality of discharge communication can pose risks to patient safety. Vulnerable groups such as those with medically complex needs, the elderly, those with low health literacy, and those with a lack of social or family support may be particularly at risk. Further research is needed to understand the needs of these groups and how risks can be reduced.
7. Medication information	Adequate details regarding medication information, particularly changes to medication, are not always included in discharge letters or clear to recipients. Further research should look at feasible and sustainable interventions for improving communication of medication information.

3. Rationale for research design: Patient and public involvement

This chapter outlines the research questions (RQs) for the thesis and further justifies the research rationale. Section 3.1 introduces the potential research questions based on the review findings (chapter two). The RQ selection process and findings are detailed in section 3.2 followed by section 3.3. which summarises the chapter.

3.1 Introduction

The overarching RQ for the entire thesis was outlined in chapters one and two as, “how can discharge communication between hospital healthcare professionals and GPs and patients be improved”. This question is broad and so was broken down into focussed sub-questions that link in with the overall aim of thesis to identify ways in which discharge communication can be improved. Sub-questions were formed from the scoping review in chapter two which provided several potential sub-focus areas for the research through highlighting different discharge communication problem areas to include: timing and medium, content, structure, who is writing discharge communication, patient copies, vulnerable patients, safety issues and medication problems. Problem areas were rephrased from nominal structure to an interrogative to form sub-RQs (see table 3.1 for list of research questions). However, it is only feasible to tackle one or two of these questions within the scope of a PhD. Thus, the next section details the question selection process.

Table 3.1. Research question options

What content should be included in discharge communication?	RQ1
How can medication changes be communicated effectively?	RQ2
How can patient safety be increased?	RQ3
Through what medium should discharge communication be sent and how quickly?	RQ4
How could new training programmes for trainee doctors improve discharge communication?	RQ5
Should patients be copied into discharge communication?	RQ6
What are the advantages and disadvantages of structured and narrative-style discharge letters, and considering cost and time implications which should be used?	RQ7
Who should be writing discharge communication?	RQ8

3.2 Refining the research questions: Patient & GP involvement

3.2.1 What is PPI and GPI and why is it important?

> *"There is much talk about patient and public involvement in England… it is the cornerstone of the patient-led National Health Service (NHS) and among the standards for which NHS will be audited by the Healthcare Commission."* (285) (p.129)

Selecting and refining focussed research questions for the thesis was achieved through consulting with GPs, who are the primary addressees of discharge letters, and patients, who are the subject of the letters and so have a strong vested interest in the letter content and quality. If a discharge letter is incomplete or of otherwise poor quality, this has consequences for the GP for providing continuity of care and the patient for their health and receiving continuity of care. For these reasons, GPs and patients are key stakeholders who are directly affected by the quality of discharge communications. Thus, the views of these groups were core to what this research was about and so it was deemed important to consult both GPs and patients on the direction of the research and selection of an appropriate and relevant research question.

The process of consulting patients and GPs for their views may be termed public and patient involvement (PPI) and General Practitioner Involvement (GPI) respectively. INVOLVE (286) defines public and patient involvement in research as, *"research being carried out "with" or "by" members of the public rather than "to", "about" or "for" them"* (286). The "public" may include users of health services such as patients and carers (286). *Involvement* may be contrasted with *participation* whereby individuals are research subjects, for example, clinical trial participants (286). As described above, public and patients as well as GPs were *involved* to refine the research question, that is, they assisted in "identifying research priorities" (286, 287).

"GPI" is a term coined for this research to refer to a form of GP stakeholder involvement and collaboration. Several works (288-291) demonstrate and advise stakeholder involvement, particularly in the design stages of studies, in order to improve the relevance and quality of the research and enhance dissemination. The views of GPs were seen as integral to decision-making for this research due to the key role that GPs have in receiving and actioning discharge letters. Therefore, GP views were important to informing this research and so, together with patients' views, were included in this research question selection process.

The concept of PPI draws on a framework which places public and patients, as taxpayers, in the role of "user" or "consumer" (292). As "consumers" of the *NHS* in a democratic society, the public may be viewed as "owners" of *NHS* research and therefore should have input or influence (293-296). PPI is argued to "legitimise decisions" in a democratic political climate as well as potentially increasing public accountability and autonomy (293, 294). Since 2000, the UK government has moved towards increasing PPI in order to have a health service designed from the patient perspective (297). Smith *et al.* (298) say that, *"in the UK, policy recommends that service users (patients, carers and the public) should be involved in all publicly funded health and social care research"* (p.298) (298). UK policy, in regard to the *Department of Health* (DOH), places an emphasis on PPI and considers it to be a feature of good quality health or social care research (295). Hence, use of PPI is growing throughout the *NHS* and is hoped to boost healthcare standards, quality, and produce research applicable to the needs of patients (296, 299-302).

The *National Institute for Health and Care Excellence* (*NICE*) utilises PPI to form National guidelines for the *NHS*; *NICE* (303) argues that *"because of this [public and patient] contribution, our guidance and other products have a greater focus and relevance for the people most directly affected by our recommendations."* PPI ensures research findings are relevant and important to public health users (286, 300, 304). Oliver (301) suggests PPI is beneficial by presenting the research community with the views of health service users. Boote *et al.*(295) and Entwistle *et al.* (293) suggest that PPI has the potential to improve the quality and impact of research.

Examples of studies which demonstrate or outline benefits of PPI are: Kreindler (305), Boivin *et al.* (292), Fleurence *et al.* (306), Piil & Jardon (307), & Sacristán *et al.* (308). The need to increase use of PPI through a model which emphasises autonomy is discussed by Sacristán *et al.* (308). They write that research needs to,

> *"improve the level of information that patients and society as a whole have on research objectives and processes; the goal is to promote the gradual emergence of the expert patient"* (p.631) (308).

Increasing PPI is similarly discussed and exemplified by Piil & Jardon (307); they invite terminal cancer patients and relatives to collaborate in identifying future research priorities within supportive and rehabilitation care.

Systematic reviews of impact of PPI have been undertaken by Conklin *et al.* (309), Mockford *et al.* (310), and Domecq *et al.* (311). Impact on healthcare policy development is focused on by Conklin *et al.* (309); their review reported that PPI evidence for impact on policy development is "scarce" (309). Comparably, Mockford *et al.* (310) reported a lack of impact measurement and little empirical evidence of associated costs. Thus, evidence on policy impact and cost of PPI is limited. Domecq *et al.* (311) look at the value and harm of PPI. Their review included 142 studies and found PPI was often feasible and should be conducted toward the start of research projects. Nonetheless, Domecq *et al.* (311) warn that PPI can be tokenistic and does come at a cost. Additionally, Domecq *et al.* (311) note *"potential harms"* of PPI such as patient frustration with training and transport.

Notably, stakeholder and patient involvement within the research process is not only of national but international interest (307). For example, Tinetti, & Basch (312) discuss patient involvement in the United States with reference to the *Institute of Medicine.* They say that in order for "patient centred care" to occur, patients must be involved in research which informs healthcare decisions (312). This notion of PPI to uphold the notion of patient-centred care is in line with the commonly quoted healthcare mantra "nothing about me without me" (313). Hence, any healthcare system advocating for patient-centred care may be expected to draw on PPI. For these reasons, it was essential to involve patients in selecting research questions.

3.2.2 Identifying and refining research questions: Use of PPI

"Identifying important questions" is a potential contribution lay perspectives can make to research (293). Studies which involve users to identify, refine or prioritise research questions are: Hanley *et al.* (314), Mosavel *et al.* (315), Reed (316), Díaz Del Campo *et al.* (317), and the James Lind Alliance *(JLA)* (318). Díaz Del Campo *et al.* (317) involved the public and patients in defining key research questions in their work which sought to develop patient-centred clinical practice guidelines. They write in their concluding remarks that it is crucial to support involved patients through clear outlining of their role and relevant training (317) . Hanley *et al.* (314) looked at PPI in 62 clinical trial centres. They reported 48 trials rated PPI as mostly positive and involvement took the form of helping, *"refine research questions, improve the quality of patient information, and make the trial more relevant to the needs of patients"* (314) (p.519). Increased relevance of research questions through PPI is noted by Brett *et al.* (319) who review PPI in studies in relation to research design. PPI at the research design stage is similarly examined by Boote *et al.* (295) who explain that the public can ensure the research question is relevant . Nonetheless, the "self-selecting" nature of PPI is made clear by Boote *et al.* (295); voluntary contributors have personal experience and interest in the research area and this bias must be taken into account. Overall, studies which use PPI to help identify and refine research questions continually emphasise the value of this type of early research design involvement.

The *JLA* (318) work to engage patient, public and practitioner stakeholders in discussing research priorities. Following the *JLA*, this project engaged and involved both patient and practitioner stakeholders, addressing the needs of both in practice. Therefore, the PPI and GPI design for this section can be likened to the "priority setting partnership" model of the *JLA* (318).

3.2.3 PPI and GPI: Methodology

The anticipated outcome of PPI and GPI methods was to select and refine research questions for the project, which as the *JLA* (318) describe, were of direct relevance and benefit to clinicians and *NHS* users. Studies often recommend that involvement should take place as early as possible (286, 296). The present project adhered to this recommendation through "research design" involvement in order to maximise contributor influence.

There is no one way to undertake PPI in research due to the diverse nature of research topics and people; methods for early involvement are not clearly outlined in literature. Ross *et al.* (300) explain, *"there is no single blue-print* *for involvement as it entails working with a diversity of perspectives"* (p.273). Similarly, the varying nature is expounded by Smith *et al.* (298) who determine that PPI for different research projects needs to be tailored for purpose rather than identical to previously used formats. Thus, it was necessary to design an involvement process that suited the needs of the project and those involved.

A mixed methods approach to involvement was adopted in order to counter the shortcomings of each method in isolation and triangulate findings (320). Quantitative techniques were expected to permit numerical participant "prioritisations" of the research questions and qualitative techniques were anticipated to explain and justify these priorities. The project's overall methodological approach was to view PPI and GPI as a process of "collaboration" or "partnership" and the *JLA* (318) guidelines were followed. For this reason, later thesis chapters also draw on patient and clinician involvement.

3.2.4 PPI and GPI: Methods

The "checklist" for reporting PPI in research (*GRIPP*) by Staniszewska *et al.* (321) was consulted for guidance throughout involvement reporting. The aim of PPI and GPI in the research design was to prioritise and refine the potential research questions identified in the scoping review (table 3.1) in order to select a relevant and focussed research question(s) for the project.

Objectives

1) To select research questions which are important and relevant to GPs and patients.
2) To strengthen the project rationale through consideration and inclusion of GP and patient perspectives and experiences through questionnaires and individual and group discussions.

It was not possible to offer incentives to those involved due to funding limitations. Hence, it was decided to allow participants to shape and select their own preference for involvement. Participants were given a choice about *how* to give their input to include: group workshop, individual discussion, telephone, or online or paper questionnaire. This ensured that individuals were only involved to a time degree of their own choosing. As compensation could not be provided, those involved were not required to travel or incur other expenses. The methods primarily drew on accessible and opportunistic involvement of participants e.g. speaking to delegates at a conference already taking place.

The questionnaire design adhered to *JLA* (318) guidelines to include: use of an "open" question, requesting no demographic information as none was required, and participant "ranking" of research questions . The "ranking" exercise was comparable to the "interim priority setting", specifically the "choose and rank" exercise, by the *JLA* (318) where respondents rank the importance of research questions; the *JLA* report this process as successful and useful.

The questionnaire asked those involved to rank and prioritise eight research questions (see table 3.1). To increase comprehensibility of the devised research questions, following the guidelines of the *JLA* (318), the wording of the research questions for PPI activities were simplified to ensure they did not include jargon and were in plain English. Thus, the wording of the research questions for PPI and GPI activities were slightly different but the overall meaning of the research questions was the same. The different research question wordings for PPI and GPI can be seen in the left-hand columns of tables 3.2.1 and 3.2.2 respectively.

The *COREQ* checklist by Tong *et al.* (322) was consulted for the group discussion design which was based on the same structure as the questionnaire except participants could also verbally discuss and feedback on the reasons for their research question priorities. In accordance with *JLA* (318) guidelines, participant information materials for recruitment were clear, in plain English, and contained no unexplained jargon.

Recruitment

PPI and GPI participants were recruited through a variety of opportunistic and convenience (323) sampling routes: email invitations from the Clinical Research

Network (West Midlands CRN), Warwick Medical School links, and discussion with meeting and conference delegates, and approaching existing patient participation groups (PPGs). “Snowball” sampling also took place (324); those already recruited approached and recruited people they knew (323).

There was no pre-determined number of participants for this involvement stage; the project sought contributions of as many people as would like to be involved. Sampling methods were advantageous in terms of cost and time although it must be acknowledged that they “over-included” members within certain demographic groups, particularly those of white middle-class highly educated backgrounds.

3.2.5 Findings

The full PPI and GPI findings can be viewed in tables 3.2.1-3. Approximately 30 patients and 60 GPs were involved: 8 patients and 46 GPs responded to the questionnaire, 1 GP took part in a telephone discussion, conference discussions involved 5-10 GPs and patients, impromptu discussions took place with approximately 10-20 patients, and the group discussions included 8 GPs and 9 patients.

Tables 3.2.1-2 translate the response ranking counts into percentages of what proportion of responders marked each research question for prioritisation. The percentages alone may be misleading and so it was necessary to rank the results. Descriptive statistics were appropriate for the small data size. Following Starfield & Shi (325) and the work of the *JLA* (318), a reverse scoring system was used. An “average ranking score” was calculated so it could be determined which research question was preferred overall using the below equation:

$$\frac{x_1w_1 + x_2w_2 + x_3w_3 \ldots x_nw_n}{\text{Total}}$$

w= weight of ranked position x= response count

Ranking score calculation results are displayed in order of research question preference for patients in table 3.2.1 and GPs in table 3.2.2. The results showed patient preference was for RQ6 “should patients be copied in to discharge communication” and GP preference was for RQ1 “what content should be included in discharge communication”. The “content” question was also strongly preferred by patients ranked at #2. “Patient copies” was ranked much lower by GPs (6th) than patients who ranked this topic #1. Noticeably, the GPs and patients agreed on the least important questions and placed “structure” and “who should be writing” in the lowest positions. One of the main disparities between the groups was “medication changes”; patients ranked this #5 but GPs placed this issue at #2. It is important to note that far more GPs (n=46) than patients (n=8) responded to the questionnaire and so contributions could not be considered equally. To counter this imbalance of patient and GP views, it was vital to factor in the qualitative results.

The results are displayed in tables’ 3.2.1-3 on the following pages.

Table 3.2.1 Patient results rankings

PATIENT RESPONSES	**Ranking position**										
Potential research questions	1–	2–	3–	4–	5–	6–	7–	8–	**no. of responses**	**Average ranking score**	**rank**
RQ6 Should patients receive a copy of discharge communication?	25.0	12.5	0.0	25.0	12.5	25.0	0.0	0.0	8	13.38	1
RQ1 What content should be included in discharge communication?	12.5	12.5	25.0	25.0	0.0	12.5	0.0	12.5	8	13.13	2
RQ4 How should discharge communication be sent (e.g. email, letter in post...) and how quickly?	0.0	25.0	37.5	0.0	12.5	12.5	0.0	12.5	8	13	3
RQ3 How can patient safety be increased?	37.5	0.0	0.0	12.5	12.5	0.0	25.0	12.5	8	12.75	4
RQ2 How can medication changes be communicated effectively?	12.5	37.5	0.0	0.0	0.0	25.0	12.5	12.5	8	12.75	5
RQ5 How could new training programmes for trainee doctors improve discharge communication?	0.0	12.5	25.0	12.5	0.0	0.0	37.5	12.5	8	11.88	6
RQ8 Who should be writing discharge communication?	0.0	0.0	12.5	25.0	25.0	0.0	25.0	12.5	8	11.63	7
RQ7 How should discharge letters be structured?	12.5	0.0	0.0	0.0	37.5	25.0	0.0	25.0	8	11.5	8

Table 3.2.2 GP results rankings

GP RESPONSES	**Ranking position**										
Potential research questions	1–	2–	3–	4–	5–	6–	7–	8–	**no. of responses**	**Average ranking score**	**rank**
RQ1 What content should be included in discharge communication?	46.7	24.4	17.8	2.2	0.0	6.7	2.2	0.0	45	12.91	1
RQ2 How can medication changes be communicated effectively?	17.8	28.9	17.8	22.2	13.3	0.0	0.0	0.0	45	12.2	2
RQ3 How can patient safety be increased?	25.0	15.9	18.2	15.9	9.1	11.4	2.3	2.3	44	11.77	3
RQ4 Through what medium should discharge communication be sent and how quickly?	7.0	11.6	23.3	16.3	14.0	16.3	7.0	4.7	43	10.95	4
RQ5 How could new training programmes for trainee doctors improve discharge communication?	2.2	8.9	8.9	13.3	8.9	20.0	22.2	15.6	45	9.42	5
RQ6 Should patients be copied into discharge communication?	0.0	4.5	4.5	13.6	25.0	11.4	15.9	25.0	44	9.18	6
RQ7 What are the advantages and disadvantages of structured and narrative-style discharge letters	2.3	2.3	4.5	9.1	20.5	13.6	27.3	20.5	44	9.05	7
RQ8 Who should be writing discharge communication?	6.5	2.2	6.5	6.5	10.9	17.4	21.7	28.3	46	8.98	8

Table 3.2.3 Involvement methods and results

	Public and Patient Involvement		**General Practitioner Involvement**	
Involvement method	**Quantitative results**	**Qualitative results**	**Quantitative results**	**Qualitative results**
Online questionnaire	RQ6 "patient copies" ranked #1 (N=8)	Recurrent topic: keeping the patient informed [RQ6] Other points: importance of patient safety [RQ3] and discharge letter content [RQ1]	RQ1 "content" ranked #1 (N=46)	Recurrent topics: -medication changes [RQ2] -GPs should not be responsible for chasing follow up results [RQ1] -patients should be copied correspondence [RQ6] -Informing the patient may increase patient safety [RQ3] - letters should be sent within 24hours [RQ4] -patient safety very important [RQ3] Other points: nurses write good discharge letters [RQ8], speed of communications needs improving [RQ4], content needs refinement [RQ1]
Telephone discussion				-*NHS* discharge letters should be compared against private practice letters which are generally far superior -Letters should be sent within 24 hours [RQ4] -Discharge communication should be a commissioning priority -Patient copies are generally good and in line with *NHS* progression [RQ6]

	Public and Patient Involvement		General Practitioner Involvement	
Involvement method	**Quantitative results**	**Qualitative results**	**Quantitative results**	**Qualitative results**
Conference discussions		-Several attendees pointed at the "patient copies" idea and voiced this should be prioritised which they illustrated anecdotally [RQ6] -General uncertainty as to why letters are still used as a means of communicating confidential information [RQ4]		
Informal conversations (opportunistic)		-Technology, and how communication takes place is highly relevant and seems outdated in *NHS* [RQ4] -Many discussions about the concept of a universal electronic health system		
Protected Learning Time event				-Hospital doctors remarked solutions may come from training improvements [RQ5] -The importance of discharge communication research was discussed -Medication and patient safety issues very relevant and important [RQ2] [RQ3]

	Public and Patient Involvement		General Practitioner Involvement	
Involvement method	**Quantitative results**	**Qualitative results**	**Quantitative results**	**Qualitative results**
Group discussions		-Participants felt project was very complex -Marked lack of knowledge on the discharge process -Patient copies rated as highly important and participants felt this was the question most relevant to them [RQ6]		-Information around medication changes and *reasons* for changes needs attention [RQ2] -Patient safety issues are current and important of which medication is the main problem within discharge communication [RQ2] [RQ3] -Ethical issues around concept of universal record -Potential benefits of structured data messaging and the automated discharge messages [RQ4] -GPs not feeling informed about admission events - “Semi-structured” letters would be preferred [RQ1] - Speed important as letter receipt can take weeks -Inpatient communications are inferior to outpatient ones [RQ4] -It would be useful to rate discharge letter quality with a devised tool so clinicians/hospitals can be held accountable for the quality they produce -Perception that patients routinely receive letters -Patients receiving letter copies can prompt safety actions [RQ6] but also lead to worry

The individual telephone discussion occurred as a result of an email conversation whereby a GP who completed the questionnaire expressed interest in a phone call to discuss their views and the project as a whole. Consequently, the discussion was unstructured and discussion based on the points the GP wished to raise. The main discussion points were: the striking difference in quality between private practice and *NHS* discharge letters, timing, issues particularly relating to A&E (Accident and Emergency), and the benefits of patient copies. The general importance of progression and research into discharge communication in relation to Clinical Commissioning Group (CCG) priorities was also discussed. Comparably to the telephone discussion, impromptu informal discussions had no protocol and occurred spontaneously with people in locations such as conferences and acquaintance gatherings. During these discussions, through conversation about the PhD, people would relay their opinions on the research priorities.

All qualitative data was read and re-read and the main topics summarised for each datum. The qualitative data was primarily used to explain quantitative "ranking" exercises. Due to time constraints, it was not possible to complete a full "thematic analysis" (89, 90); this may have revealed pattern subtleties. Topics which were identified as recurrent within patient qualitative responses were: informing the patient (RQ6), content (RQ1), and patient safety (RQ3). GP recurrent topics were: medication changes (RQ2), patient safety (RQ3), patient copies (RQ6), and content (RQ1).

Patient discussions reflected they felt "patient copies" was of great importance in research; opinions were dichotomised "for" and "against" this practice which intrinsically illustrated the complexity of the question. Curiously, patient discussions revealed a distinct lack of knowledge about discharge processes within the *NHS*. Perhaps, this explains why questions relating to items such as "who is writing" were ranked low or often unmentioned by patient participants. In addition, patients frequently talked about "mode" and often articulated that letters seem "old-fashioned". Patients queried the potential confidentiality issues with different communication platforms, for example, email. Following the trend of patients to prioritise "patient copies", the discussion group regarded this research question as very important and relevant. The patients talked about the fact that patient copies can often feel "randomised" as sometimes they receive letters and sometimes, they do not. It must be noted that perhaps some bias was present in the question wording such that patients were perhaps inherently more likely to select the question that used the word "patient", as did RQ6.

GPs repeatedly stressed the importance of discharge communication research as well as reiterating problems with medication information and patient safety issues they had experienced in practice. The GP discussion group felt all of the research questions were relevant and of value to the *NHS* and consequently the GPs expressed their difficulty completing the paper questionnaire ranking exercise. The initial GP discussion focussed on medication changes and patient safety issues, which the GPs ranked top. Ideas for countering these issues included: structured data messages, increased communication speed, and doctor training.

Following the initial discussion and questionnaire completion, one group of GPs, through a workshop-style event (group discussion), were presented a summary of the preliminary GP and patient involvement results. This may be compared to the process used by the *JLA* (318) where PPI participants are exposed to the research question scores in the final stage of research question selection for discussion (see also *Delphi Method (326)*). Given the prominence of "patient copies" in patient responses, the GPs explored this topic further. This exploration clarified that GPs often ranked this question reasonably low as they felt the answer to "should patients be copied in" was a clear "yes" and so not a viable research question. Moreover, GPs asserted that they were under the impression patients were routinely copied into letters; this contrasted with patient accounts. This contrast illustrated the incongruity between what GPs think is happening and what patients say is happening; this stressed the importance of including *both* perspectives at this research design involvement stage. Upon reading and hearing about the mixed patient perspectives, the group agreed that "patient copies" was an important research area and has the potential to improve patient outcomes. Subsequently, with GP involvement, question RQ6 was altered to "should patients receive or not receive discharge communication, why and in what form?" as this had better scope. Overall, the group and individual discussions exemplified the importance and usefulness of qualitative work to clarify and explain the quantitative results (questionnaires).

3.2.6 Discussion

Overall, the involvement work findings indicated priority for the RQs relating to "content" [RQ1], "mode" [RQ4] and "patient copies" [RQ6]. On reflection, the topic of "mode" [RQ4] was felt to be beyond the scope of a PhD and has patient confidentiality implications which need addressing as many technology modes are not currently *NHS* approved; this was therefore not selected as the thesis research question. Given that qualitative findings indicated that the area of "patient copies" [RQ6] was important to both patients *and* GPs, this was selected as the primary research focus for the thesis. Hence, RQ6 formed the primary research question for the research going forward. As "content" [RQ1] was also conveyed as important, particularly through quantitative GP findings, this was selected as the secondary research focus and secondary research question for the thesis.

In relation to the selected primary research focus "patient copies" [RQ6], informed by the involvement work, it was anticipated that variation and diversity in the extent to which patients may wish to receive discharge communication will occur. Therefore, the research question [RQ6] needed to account for variation; the "in what form" adjusted element of the question tackles this.

Research Question: "Should patients receive or not receive discharge communication, why and in what form?"

Research Aim: To describe why patients currently receive or do not receive discharge communication and how different stakeholder groups think this process should take place in order to optimise patient experience and outcomes.

Research rationale: Refining the process of whether and how patients receive discharge communication has the potential to improve patient outcomes across the *NHS*.

It is important to consider that the GP and patient involvement was not intended to be a comprehensive sampling strategy. The aim was to recruit as diverse a population as possible into activities. However, participants were involved on a voluntary and opportunistic basis, and those who took part included educated individuals who were explicitly interested in research. PPI participants were predominantly accessed through the CRN and existing patient participation groups as well as those who attended research conferences and wished to express their views as an *NHS* service-user. Those who took part were primarily of white middle-class backgrounds. It is acknowledged that lack of financial compensation, which could not be provided due to limited PhD funds, may have excluded interested individuals and in particular marginalised groups; participation was limited from members of minority ethnic groups and those with low literacy. This biased research question rankings towards the opinions of certain demographic groups and limits the applicability of PPI findings. Nevertheless, this does not mean the PPI and GPI findings were not of value and involving patient service-users of the *NHS* and GPs within the process of research question selection was felt to be a strength of the research; the use of PPI and GPI increased the relevance and importance of the research focus.

Allowing participants to select and shape the project research question was considered to be a substantial impact on the research design. Interestingly, the GPs preferred the questionnaire and the members of the public tended to prefer face-to-face short discussions; this illuminates the value of an adaptive involvement strategy. Involvement work helped to select a research question from a list of questions which all seemed important from the scoping review. Moreover, GP input re-worded and thus improved the research question.

Problems with the PPI and GPI included: lack of understanding about research area, incomplete or incorrectly completed questionnaire responses, and misunderstanding that those involved were not research *participants.* The involvement limitations included: low number of patient quantitative results, that only one researcher interpreted the qualitative results increasing risk of bias, the lack of patient diversity, and that the involvement stage took place over 6 weeks which may have limited involvement.

3.3 Chapter summary

PPI and GPI were conducted through a mixed methods approach in order to draw out two focus areas (patients receiving letters and letter content) for the research that were perceived by participants as important and relevant to the *NHS*. This chapter has exemplified the value of external involvement in research and furthermore the value of consulting *both* patients and practitioners as they had different contributions and ideas for the project. The next chapter discusses methodological approaches for tackling the research questions.

4. Methodology and Methods

Chapters 1-3 outlined the background and rationale for this research. This chapter will describe and justify the methodology and methods for the studies that follow. The chapter covers the methodology in section 4.1 followed by a discussion of philosophical foundations in section 4.2. The overall research design is presented in section 4.3 after which the realist review is overviewed in section 4.4. The primary data collection methods and plan for analysis are in section 4.5. The methods for integrating studies and study findings are found in section 4.6 followed by an outline of the ethics process and ethical considerations in section 4.7. The chapter is summarised in section 4.8.

The protocol for the PhD has been published open access (72) by *BMC Health Services Research*. Sections of this chapter are modified extracts from the protocol publication.

4.1 Methodology

4.1.1 Interdisciplinary methodology

The project combined the disciplines of Health Sciences and Applied Linguistics. This was due to the topic focus on communication and content of discharge letters which lent itself to being researched from a linguistic and health sciences perspective; the combined approaches allowed in depth analysis of the language used to talk about discharge communications as well as the medical content of discharge letters. The project aimed to intrinsically exemplify the value of combining approaches from these disciplines.

4.1.2 Mixed methods

"Mixed methods" may simply be defined as use or "mixing" of both quantitative and qualitative methods, techniques and approaches (327-329). The differentiation between these methods is often framed as quantitative being "numbers" and qualitative being "words" (330). However, an alternative viewpoint is to reject the notion of a clear dichotomy and instead consider the methods to reside on a continuum (331). Thus, mixed methodology draws on various research and philosophical continua (332, 333); it is sometimes referred to as the third research paradigm (333).

Mixing methods of inquiry has been suggested to allow combinations of different design components to better tackle complex and specific research questions (328). Many researchers suggest that the combination of mixed methods offsets the weaknesses and/or capitalises on the strengths of both (320, 327, 328, 331, 332, 334-343). Examples of strengths of a quantitative approach are that it is useful for testing hypotheses and conducting large-scale studies as data collection and analysis is relatively quick but also numerical and precise (328, 344). Weaknesses of a quantitative approach are that data may be de-contextualised and hypothesis-testing may focus on a single or pre-defined hypothesis and thus "miss" evidence and theories within the data (328, 344). Examples of strengths of a qualitative approach are that data can be rich and detailed and qualitative analytical strategies allow consideration of settings and affecting factors in great depth (328, 344). Weaknesses of qualitative work are that findings may be very specific and not generalizable to the general population or across multiple settings; this can limit conclusions (328, 344). Overall, quantitative and qualitative approaches have both strengths and weaknesses and therefore combining the methods may be viewed as a stronger approach than each on its own. Pluye & Leech (345) articulate that mixed methods blends *"the power of stories and the power of numbers"* and views the combination and synthesis of the different data as more valuable than each in isolation. Creswell & Tashakkori (346) summarise that, *"conclusions gleaned from the two strands are integrated to provide a fuller understanding of the phenomenon under study"* (p.677) (346). Moreover, Johnson & Onwuegbuzie explain the fundamental principle of mixed methods research as follows:

> "*According to this principle, researchers should collect multiple data using different strategies…Effective use of this principle is a major source of justification for mixed methods research because the product will be superior to mono-method studies*." (p.18) (328)

The advantages of mixed methods are well-documented and subsequently many recent healthcare studies have applied mixed methods approaches (215, 347-358). Mixed methodology rests on the principle that mixing methods can better explore complex research questions and thus provides a more comprehensive understanding of the phenomena under scrutiny than either method alone (327, 333, 336). Consequently, as the research question of *how* and *why* patients should or should not receive discharge communication was complex, mixed methods was a suitable and useful approach.

4.2 Philosophical Foundations

Quantitative research views knowledge construal within a positivist (341) epistemology. A *positivist philosophy* considers observations to be objective, that is, there is a *"common objective reality across individuals"* (359). Much of healthcare research such as Randomised Controlled Trials positions itself in positivist epistemology whereby observations are viewed as single objective realities and grounded in empirical data (328, 359). In contrast, qualitative driven research may commonly view knowledge construal as "subjective" within an interpretive paradigm (332, 360-362); this *constructivist* (341) perspective rejects the notion of an objective reality and argues that there are multiple realities which are subjectively interpreted as the *observer* and *observed* reality cannot be separated (328).

This research was mixed methods and interdisciplinary, informed and guided by multiple methodological approaches. Thus, the above paradigms in isolation were not appropriate frameworks for this study design. It was important that the selected theoretical framework for the study supported and accounted for mixing methods and disciplines as well as the complexity of the concept under scrutiny, "communication". Thus, the underlying foundations were not purist (328) but entrenched within quantitative and qualitative philosophical paradigms.

The epistemology and theoretical framework identified as the most suitable for this research was "realism", specifically, critical realism (363). A "critical realist" may view the world as a single reality with multiple interpretations and a "realist view of causation" (364, 365) (see chapter five for details on realist logic). Thus a critical realist approach both combines and rejects insights of objectively and subjectively-minded philosophers (360, 366). Critical realists combine notions of empirical realism within traditional positivist quantitative Science and idealist views of subjectivity within the qualitative Social Sciences (360, 366, 367). Critical realism accounts for complexity and focuses on "what works" to include considerations of affecting factors such as "context" (363, 366, 368). Due to the potential to comprehend complex intervention impacts, critical realism is being increasingly used in healthcare research (365, 369-371). Therefore, a critical realist view was apt and was taken to underpin methodological decisions, analysis, and interpretation of findings.

4.3 Overall research design

The primary research question (RQ) for the project started as very broad: "How can discharge communication between hospital healthcare professionals and GPs and their patients be improved?" Following patient and public involvement (PPI) and General Practitioner involvement (GPI) (see chapter three), the question was refined to: "Should patients receive or not receive discharge communication, why and in what form?" Sub-research questions were then constructed in order to break up different elements of the question. The main sub-RQs are below. The RQs focussed on both describing *current* practice and how different groups think this process *should* take place.

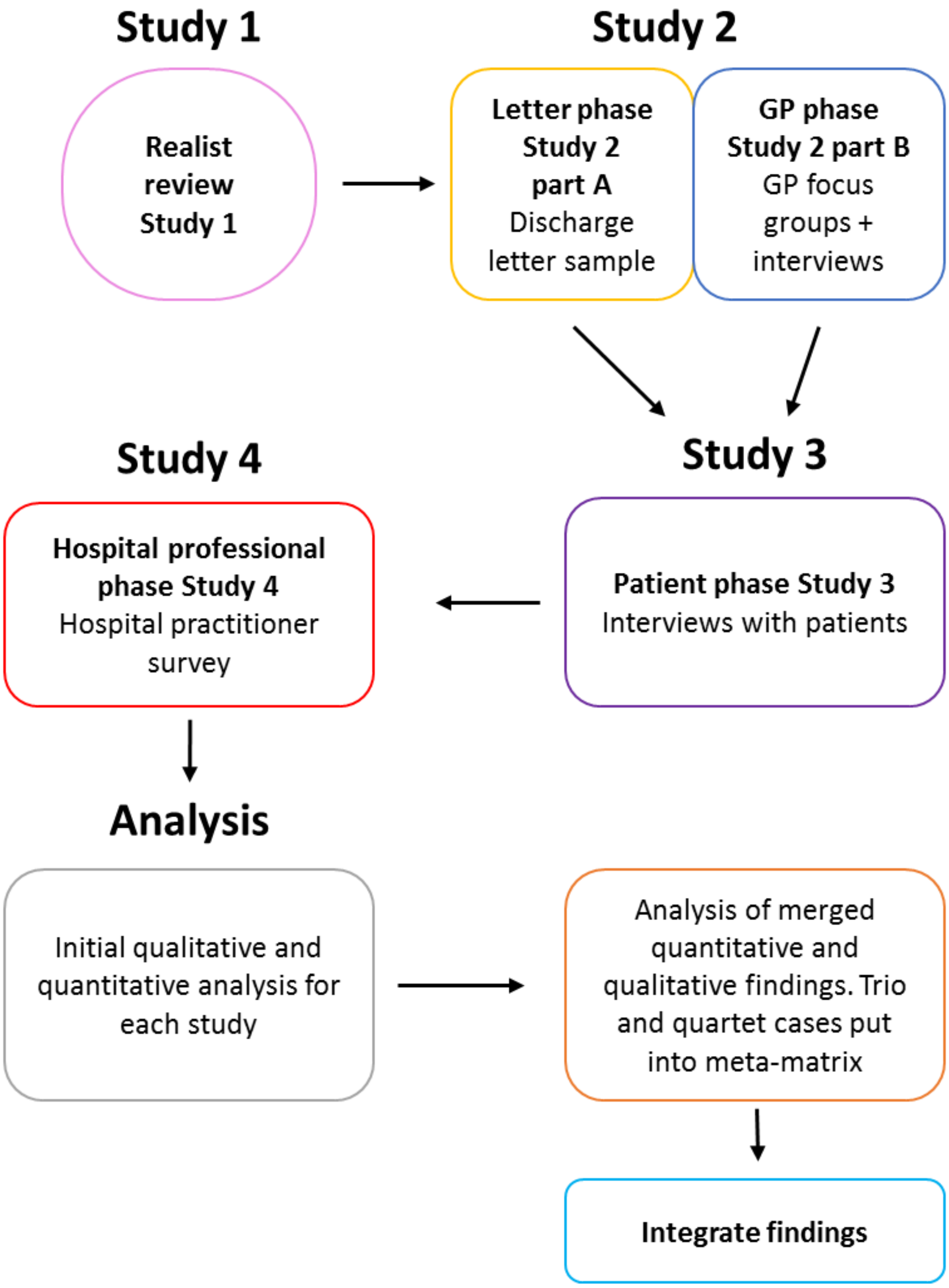
Main sub-research questions (RQs):

1. In what form do patients currently receive written discharge communication and why?
2. What are the effects of patients receiving written discharge communication and why?
3. Should patients receive or not receive discharge communication, why and in what form?
4. What are the features and key content-items of "successful" discharge letters?

Informed by the RQs, an exploratory mixed methods four phase study was conducted over a 4-year period. Each study aimed to address the same overarching research question, “should patients receive or not receive discharge communication, why and in what form?” Study 1 involved secondary data analysis of the intervention of patients receiving discharge communication through a realist review. Study 2 built a discharge letter sample for content analysis alongside exploration of the quality of discharge letters from the perspective of GPs through interviews and focus groups. Study 3 focussed on patient experiences through interviews. Study 4 considered hospital professional (HP) viewpoints through surveys. The design aimed for studies to be sequential but allowed for them to overlap to fit with participants, research resources, and time limitations.

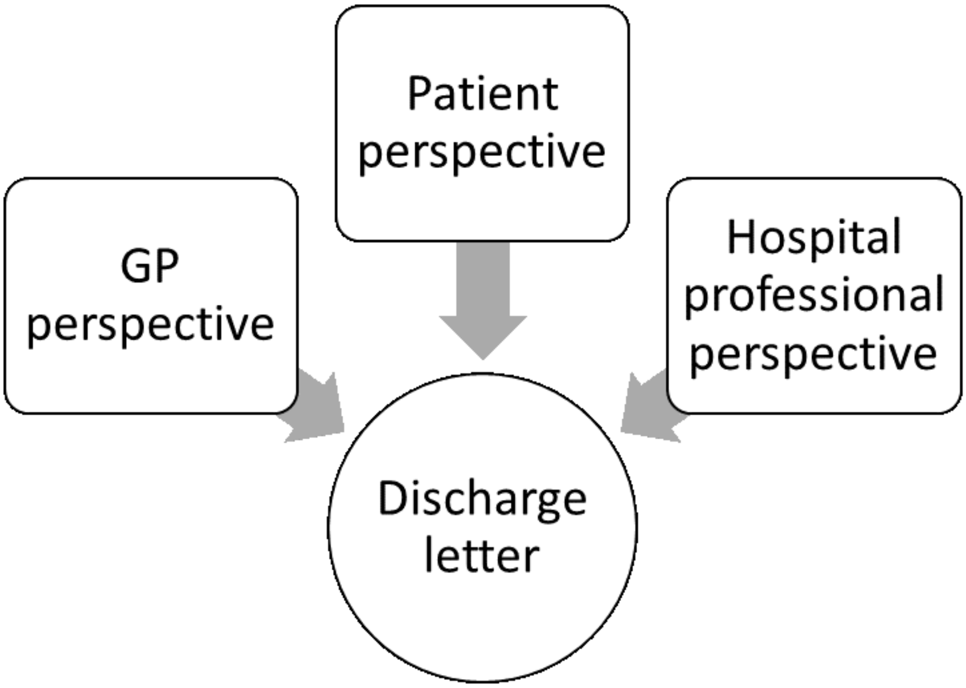
A mixed methods convergent (372) parallel design informed primary data collection in studies 2-4. In these studies, quantitative and qualitative data collection was simultaneous (373), then results were combined and merged for overall analyses (330, 340). Leech *et al.* describe this style of design as an exploratory *“fully mixed concurrent equal status design”* (374) whereby the quantitative and qualitative phases have *“approximately equal weight”* and the phases are *“mixed concurrently at one or more stages or across the components”* (374). The mixed methods for studies 2 and 4 were integrated during data collection and data analysis (344). In study 3, the mixing was during data mining and interpretations. This design permitted concurrent data collection which was anticipated to minimise time limitations. The primary purpose of mixing methods within this design was for “explanation”, that is, each set of results was planned to aid expansion and interpretation of the other in overall analyses (334, 336, 338). This was a *complementarity* mixed methods design as one method allowed more detail to be revealed as one set of results elaborated and helped explain the results of the other (338, 375). A “matrix” to visually juxtapose all results was prepared to aid combing the results and comparisons of all four studies in chapter ten (332). In the merging stage, the plan was to highlight result convergence and divergence. The overall research design is presented in Figure 4.3.1 on the next page.

Figure 4.3.1 Overall research design



The research primarily focussed on patients receiving discharge letters with a secondary focus on discharge letter quality. The design allowed each phase to capture different perspectives within the discharge communication process: GPs (study 2), patients (study 3) and hospital practitioners (study 4). Perspectives across studies were then “matched” to each respective case via a specific discharge letter; this alignment created multiple viewpoint “cases” termed in this research “quartets” as they mapped together four elements. The “quartet” design is illustrated in figure 4.3.2 below.

Figure 4.3.2 Discharge communication quartet



Quartets allowed discharge letters to be linked with the perspective of the patient to whom the letter relates, the GP who received the letter, and the HP who wrote the letter. This process permitted triangulation and comparison of different experiences within a single discharge event which allows for direct viewpoint comparisons and potential reconciliation of data disparities. Use of matched *data quartets* allowed different perspectives and realities to be paralleled within one communicative event; this was befitting for research informed by “critical realist” epistemology (see section 4.2).

Following the design of the research, each RQ was numbered according to the study which it related; these are listed in table 4.3 on the next page.

Table 4.3 Sub-research questions for each study

Study 1 RQ1:	What positive and negative effects have been reported on patients receiving written discharge communication?
Study 1 RQ2:	What are the important contexts which determine whether the different mechanisms produce positive and negative effects, and why?
Study 2 RQ3:	What content items do GP-assessed successful discharge letters contain?
Study 2 RQ4:	According to GPs, in what form do patients currently receive discharge communication, and why?
Study 2 RQ5:	According to GPs, should patients receive or not receive discharge communication, why, and in what form?
Study 3 RQ6:	According to patients, in what form do they currently receive discharge communication, and why?
Study 3 RQ7:	According to patients, should they receive or not receive discharge communication, why, and in what form?
Study 4 RQ8:	According to hospital practitioners, in what form do patients currently receive discharge communication, and why?
Study 4 RQ9:	According to hospital practitioners, should patients receive or not receive discharge communication, why, and in what form?

4.4 Methods for secondary data analysis

Study 1 Improving best practice for patients receiving hospital discharge letters: a realist review

The first study was a realist review. This was informed by background work in chapters two and three. The review protocol has been published (376).

A realist review may be defined as a systematic and explanatory, *"theory-driven, interpretative approach to the synthesis of evidence"* (377). The evidence synthesised may be qualitative, quantitative or mixed methods (378). In line with taking a theory-driven approach, one of the main steps of a realist review, as outlined in the work of Pawson (363, 379-385), is to develop and refine a middle-range theory, specifically, a "programme theory" (PT) which details how an intervention or programme may be theorised to "work" as well as under what contexts, for whom, why, when, and to what extent (377, 384). Thus, the review sought to develop a "programme theory" for patients receiving written discharge communication.

The aim of the review was to understand how and why the different effects are produced from patients receiving discharge letters. The objectives and RQs are below.

Objective 1:	To conduct a realist review to understand how and why the different effects arise when patients receive written discharge communications.
Objective 2:	To develop a programme theory for patients receiving written discharge communication.
Objective 3:	To make recommendations for best practice for patients receiving written hospital discharge communication in the *NHS*.
RQ1:	What positive and negative effects have been reported on patients receiving written discharge communication?
RQ2:	What are the important contexts which determine whether the different mechanisms produce positive and negative effects, and why?

The objectives and research questions above make references to different "effects". For the purposes of this research, effects and outcomes are simplified throughout the thesis into desired or "positive" and undesired or "negative" depending on whether the outcomes are reported as beneficial (e.g. patient satisfaction) or detrimental (e.g. patient anxiety).

A realist review aims to *explain* how and why an intervention may be theorised to "work", or not (384). The notion of moving beyond evaluation of an intervention and onto *explanation* of how and why an intervention works is one of the key distinctions between a realist review and other review types such as a systematic review. A value or strength of a realist review is the capacity to account for complexity and non-linear causal relationships. This was particularly relevant for research on the complex intervention of patients receiving written discharge communication (377). Whether a complex intervention, such as this "works" was unlikely to be a simple "yes" or "no"; complex interventions require consideration of who is affected, context, and circumstances. This consideration is congruent with one of the key principles of *realist evaluation* which argues evaluating interventions is not simply about "does it work" but for whom, when and in what circumstances and exactly how and why? (381, 382, 385) Patients receiving discharge letters may be described as a complex intervention as there is an immense amount of variability in relation to *how* patients may receive letters (e.g. direct copy, patient-directed letter), as well as multiple interactions that occur within discharge communication between participants themselves and the circumstantial variables (e.g. practitioner communicative competence, patient education and understanding, and attitudes and experiences of the professional and patient). Due to the well-documented strengths of realist reviews, it is perhaps unsurprising that realist reviews are being increasingly used within healthcare contexts, some examples include: Kastner *et al.* (386), Pearson *et al.* (387), Brennan *et al.* (377), Wong *et al.* (378), Greenhalgh *et al.* (388).

No realist review was found specific to the intervention of patients receiving discharge letters or communication and therefore conducting one contributed to the research base. Furthermore, as described above, a realist review is useful for tackling complex questions, such as those in this project, which looked at "how" and "why" the intervention may be theorised to work, or not. Therefore, it was concluded that a realist review was a suitable method for consolidating evidence on written discharge communication. Moreover, the review is an important element of the thesis as it highlighted practicable ideas for improving the current situation with patient discharge letters in the *NHS* and concepts which may not have been covered in the primary data studies. The findings of the review were planned to be consolidated with findings from studies 2-4 in chapter ten in order to make suggestions for improving current processes and drawing conclusions based on both primary and secondary data, that is, a range of evidence. More information about the rationale for choosing a realist review can be found in the protocol (376), the published review (73), and chapter five.

4.5 Methods for primary data collection: studies 2-4

4.5.1 Settings

The study involved purposive sampling (389, 390) at GP practices within the region of the West Midlands (UK) to recruit a variety of GP, patient and HP participants. In order to increase sample variation, GPs were planned to be recruited from 15 practices across: North & South Warwickshire (including Coventry & Rugby), Herefordshire, and Worcestershire if required. The target was to recruit two large practices (>10000 patients), two medium practices (5,000-10,000 patients), and two small practices (<5000 patients) in Coventry & Rugby and South Warwickshire, and one practice of each size (small, medium, large) in Herefordshire, across a spread of urban/rural areas. The hospitals that accounted for most discharge letters to these practices were eligible to participate, as were patients registered with these practices. Thus, an anticipated strength of the study was the planned number of recruitment sites which varied in size and were to be spread across inner city, urban and rural areas in the West Midlands with varying socioeconomic characteristics; this aimed to increase sample heterogeneity in terms of locality, affluence, size, participant demographics, and discharge type.

4.5.2 Inclusion and exclusion criteria

Inclusion:

- *NHS* adult (18+ years) patients discharged* from a hospital following an episode of inpatient or outpatient care.
- Patient registered with a participating GP practice.
- Treated at and discharged from an *NHS* hospital within North and South Warwickshire, Coventry, Rugby, Herefordshire or Worcestershire.
- Cases where written discharge communication has been sent to the patient's GP (may also have been sent to the patient).

Exclusion:

- Children (those aged <18 years).
- Patients who lack capacity to give informed consent to participate (e.g. Alzheimer's) or are deemed by the GP to be unsuitable for participation (e.g. end of life).
- Patients discharged to providers or units other than their GP (e.g. discharge from hospital to a rehab unit).
- Discharge communication from mental health services.
- Communication about individuals who are considered unable to participate in an interview or focus group or survey conducted in English.
- Patients who have expressed a prior wish not to participate in research.

**any episode of care (complete or incomplete) where hospital-GP written discharge communication takes place. Any borderline or ambiguous cases will not be included.*

The criteria were developed in order for the research to encompass a variety of discharge types and be relevant across hospitals and specialties for a range of patients. However, there was a need to exclude some discharge episodes. The reason for excluding discharges to care providers other than GPs (e.g. another hospital) is because this research specifically focuses on discharge communication to GPs and patients rather than referrals or care handovers. As the project focussed on patients receiving discharge communication, the research primarily targeted those who would ordinarily be responsible for receiving and interpreting their own post in England. Hence, discharge communications related to children were excluded as the parent or carer, rather than the patient, would generally be the letter recipient. It was also not possible to include: vulnerable patients (i.e. patients who lack capacity to consent), those with particularly specialised communicative needs (i.e. unable to take part in English) or where participation may have a higher perceived risk of harm (e.g. psychiatric discharge). The needs of these excluded groups may be arguably more complex and variable within and between groups and warrant research in their own right. These exclusions limited the applicability and generalisability of findings.

4.5.3 Recruitment, sample size, and data collection

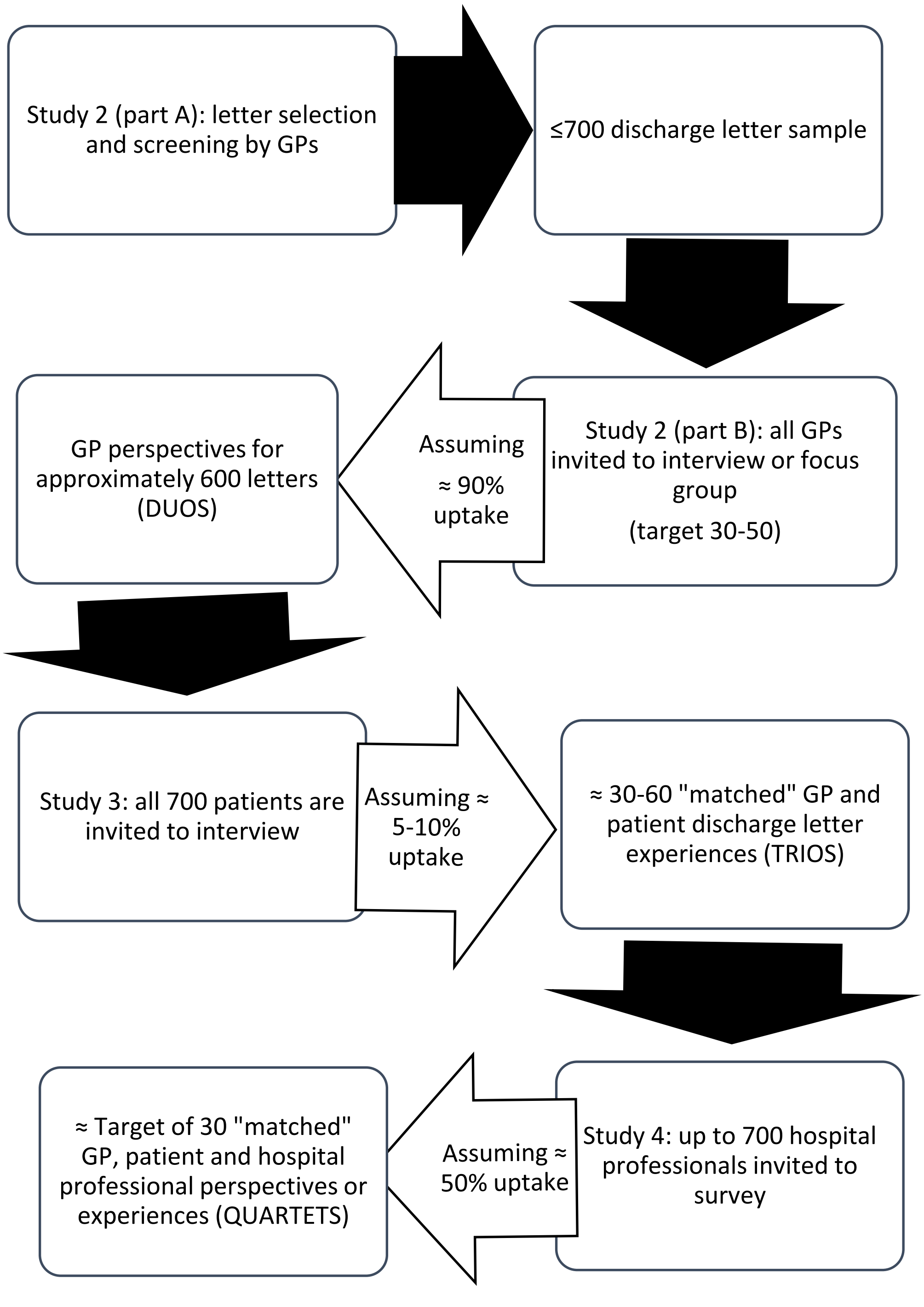
As the project sought to capture "experiences" and had no quantified outcome measures, no statistical sample size was calculated; this decision was advised by a statistical expert at Warwick Medical School (WMS) and confirmed by supervisors. Subsequently, qualitative and mixed methods sample size literature was consulted in order to determine the sample size for the research. Marshall *et al.* (391) describe and evaluate methods of justifying sample sizes in qualitative research. They explain that *"justifying sample size is evidence that the dataset is sufficient to address research problems"* (p.10) (391). Marshall *et al.* (391) suggest that one method for determining sample size is to cite other studies with *"similar designs"* and *"similar research problems"* (p.20). Due to the somewhat novel nature of the "quartet" design described in this chapter, it was not possible to consult studies with identical designs. Instead, those which addressed similar problems and topics were examined. The most comparable study found was by Reilly *et al.* (392) who looked as patients receiving letters following outpatient consultations from the perspectives of consultants, patients, and GPs. This was an interview study with a total of 48 participants: 16 patients, 12 GPs, and 20 consultants. Since this study was more homogenous (outpatient letters only) than the current study, it was apt to use these numbers as a guideline but to consider slightly larger samples across the three populations. Other relevant studies were found to include: an interview study with 52 patients by Krishna *et al.* (393) which looked at patients' attitudes towards receiving outpatient letters from ocular oncologist clinics, and another interview study which similarly looked at patients' attitudes towards receiving summaries in the context of genetic cancer consultations; this latter study was by Hallowell *et al.* (394) and involved 40 patient interviews. Thus, the above studies were used to guide and inform the sample size for the research outlined below.

Following a realist framework and the work of Pawson and colleagues (363, 379, 382, 384) , this research assumes the practice of patients receiving letters "works" in some contexts and not in others. Therefore, in order to address the research questions, I planned for sample to be "purposive" (389, 390, 395) and drawn from *"deviant case sampling"* (323, 396). "Purposive sampling" may be defined as the selection of units based on specific purposes in relation to addressing research questions (389, 397). "Deviant case sampling" looks at outliers or *"the most extreme cases of a phenomenon"* (396). Therefore, this purposive type of sampling involved examination of extreme case examples which was apt for research which considered contexts where the practice of patients receiving letters does and does not work. I decided, following discussion with supervisors, that the most suitable variable for capturing outlier or deviant case data was discharge letter quality, as, following realist theory, we judged that within contexts of poor discharge letter quality, the practice of patients receiving letters was less likely to work and vice versa. Hence, GPs built the letter sample by selecting letters which were "extreme" case examples of letter quality, that is, discharge letters which they assessed to be particularly "successful" or "unsuccessful". These binary GP letter grading differentiations sought to address the research questions and increase sample diversity. The drawback of this method of deviant case sampling was that "typical" cases of discharge letters were excluded; this means the findings cannot be seen to be representative of discharge letters or experiences for adult NHS patients, although, as described above, this was not the purpose of the research. To increase "transferability" of findings (396), context considerations were planned throughout the research to make clear the relevance and applicability to other settings.

It was important to consider the sample size in line with the research aim, objectives and RQs as well as consulting previous sample sizes in literature as described above. The aim was for the sample to be as diverse as possible whilst still being feasible within the time and funding limitations of the research. In light of these considerations, I determined that the project should aim to build a minimum of 30 quartets; this created a minimum participant sample of 90. This sample size was thought by KW, the supervisory team, and a statistical advisor at WMS, to involve a feasible number of in-depth interviews in order to produce findings that reflected the views of the groups included as participants, whilst still being large and diverse enough to increase generalisability of findings. Since, heterogeneity was anticipated across participants and discharges (e.g. age, gender, discharge speciality, education, ethnicity, GP perceptions…), having a minimum of 30 participants for each group was expected to exhibit diversity and hence increase validity and reliability of findings. The estimated uptakes allowed some flexibility, the work was still feasible if uptake was higher, and the sample size was still reasonable if uptake was lower than expected.

The statistical assumptions to achieve 30 “matched” data quartets are outlined in Figure 4.5.1 overleaf; 30-50 GPs, 30-60 patients and 30 hospital professionals would be required to participate. Assumptions displayed in figure 4.5.1 were informed by existing studies, chapter three involvement work, and the research expertise of the supervisory team.

Figure 4.5.1 Recruitment assumptions



An average uptake was assumed in the patient group (5-10%), which meant the target letter sample was set at 700 discharge letters in order to attain 30 quartets. Sampling decisions were grounded in the mixed methods design (329) and allowed a potentially somewhat large sample for quantitative analyses (<700 letters, <700 surveys) but a comparably smaller sample for in depth qualitative analyses (<90 interviews). The intention was for all GPs, patients and hospital professionals (HPs) linked to the 700 letters to be invited to take part in the research.

Low uptake was anticipated across all groups of patient participants, particularly in low education and ethnic minority groups. It was also expected that some data quartets may be incomplete. Nevertheless, incomplete quartets were still thought to likely provide valuable insights into experiences of discharge communication. The intention was to seek different participants for each strand across all data quartets in order to gather 90 unique perspectives. GP and Hospital practitioner quartet overlap was allowed as it was anticipated that clinicians may form part of multiple quartets and that practitioner opinion would vary depending on the discharge letter under scrutiny. However, it was decided at the outset that only a maximum of two opinions could be included for the same clinician within the final 30 quartets in order to minimise over-representation of individual perspectives. The sampling strategy aimed to ensure that patient perspectives were adequately captured and weighted equally to that of the GPs and hospital clinicians.

Letters were intended to be selected by GPs as and when they came across them in practice over a given time period. The sample of discharge letters was selected by GPs based on their experiences and views on whether or not the letter contained information they considered important to discharge. Thus, whether or not a letter was deemed “successful” or “unsuccessful” was not based on any pre-defined criteria or parameters but was a value judgement made by the GP selecting the letter. There was inherent subjectivity in GPs’ selection of the discharge letter sample; “successful” and “unsuccessful” letters were defined from the perspective of the GPs. This subjectivity was intentional given that one of the foci of the research was to understand from the perspective of GPs, what constitutes successful written communication and what is seen as being unsuccessful.

In order to build the sample of 700 discharge letters, assuming target uptake by 30-50 GPs, GPs needed to select 14-24 letters for the sample; 7-12 “successful” and “unsuccessful” exemplar letters each. However, in practice, GPs selected letters depending on the size of the practice, the level of managerial and administrative support, and their availability and interest in the research. GPs were asked to provide a reason for each letter selection and successful/unsuccessful grading and were given a template for this (see appendix A). The selection template was completed by the GP for each sampled letter to record study ID code for the letter, the success grading (binary “successful”/” unsuccessful”), and comments on their reasons for their selection and categorisation. Comments, as with the categorisations, were entirely open; there were no guidelines or lists of reasons. The template was expected to help GPs structure their reasons for selection and permit quartet matching through inclusion of corresponding letter and patient ID codes. This sampling method was trialled preceding the funding proposal for this project and proved effective and practicable.

Study 2 A GP-selected sample of “successful” and “unsuccessful” discharge letter exemplars and GP perspectives on hospital discharge letters

Study 2 opened in August 2017 and comprised two main parts: letter selection by GPs and GP interviews and focus groups. The aim was to explore GP perspectives on why patients currently receive or do not receive discharge letters and how this should take place in order to optimise patient experiences and outcomes. The need to look at “outcomes” was discussed in Section 2.1.2 as several reviews identified a literature gap in this area. When “outcomes” is used within this research, it descriptively refers to any and all “outcomes”, in keeping with a realist framework (363, 380, 384); this includes but is not limited to clinical outcomes such as hospital re-admissions and medication side-effects as well as patient-reported outcomes such as increased understanding and patient satisfaction. The objectives and RQs are on the next page.

Objective 1: For GPs to select a sample of successful and unsuccessful exemplar discharge letters for analysis.

Objective 2: To assess the letters through content analysis guided by policies and guidelines and through feedback from the GPs who selected their letters about their strengths and weaknesses.

Objective 3: To gather GP perspectives through focus groups and interview data on whether and how patients should receive discharge communication.

Objective 4: To transcribe and then analyse the GP focus group and interview data patterns utilising corpus linguistics techniques.

RQ3: What content items do GP-assessed successful discharge letters contain?

RQ4: According to GPs, in what form do patients currently receive discharge communication, and why?

RQ5: According to GPs, should patients receive or not receive discharge communication, why, and in what form?

GP practices were initially invited to take part through invitations circulated via the local primary care clinical research network team (CRN), collaborating Clinical Commissioning Groups (CCGs), and university links with practices. The study was also advertised through local primary care newsletters and at GP practice training events. All GPs at participating practices were eligible to take part; individual GPs expressed interest through direct email, discussion during site visits, and communications via the CRN. Practices that expressed interest in participation were provided a study protocol and participation information sheet. Where practices requested more information before committing to participation, a site visit took place with KW or research network facilitator.

The study aimed to recruit 30-50 GPs across 15 practices, with a target of 2-3 GPs per practice. Participating GPs were asked to screen and select discharge letters as part of their routine practice review of letters in line with the study inclusion and exclusion criteria. GPs were advised that letter selection determined the patients and HPs to be invited into studies 3 and 4 respectively and so inclusion and exclusion criteria applied to all studies. This meant that through letter selection, GPs determined which patients were appropriate for participation in the research. In addition, opt-out posters were provided for participating practices to display to allow patients an opportunity to opt out of the study. Following letter selection, GP practice staff redacted the letters of patient identifiable information before transferral to KW.

The GPs involved in letter selection were then invited to take part in an interview or focus group with KW; these could take place face to face or over the telephone. The purpose of offering both was to allow GPs a choice of whether they would prefer to discuss their views alongside their colleagues or just with KW. It was anticipated that the latter focus group option would allow data collection to take place during existing GP practice meetings and so allow increased participation. The recruitment target for this stage was 90% of those GPs who had taken part in letter selection. Written consent was required for participation. The interviews and focus groups were "narrative" (398, 399) in style with a single opening question around GP experiences of discharge communication (see appendix B for interview/focus group guide). Narrative interviews are described by Blödt *et al.* (398) as, *"aim[ing] to capture individuals' experiences and meaning-making"* (398). The benefit of the narrative interview-style was that it was participant-led rather than researcher-led and hence there was potential for information to be revealed that was otherwise not anticipated or questioned (399). GPs were encouraged to have sight of a copy of their letter sample and selection template to facilitate both discussion of their views on discharge letter content and patients receiving letters generally and in relation to the specific letters they selected for the study sample. The rest of the interview or focus group was planned to be relaxed and led by what the GP(s) wished to discuss related to discharge communication problems. The COREQ checklist by Tong *et al.* (400) for qualitative reporting was used to structure reporting and analyses of the interview and focus group data.

Study 3 Adult patient perspectives on receiving hospital discharge letters: a corpus analysis of patient interviews

Study 3 opened in October 2017. The aim of study 3 was to explore patient perspectives on why they currently receive or do not receive discharge communication and how they think this process should take place in order to optimise patient experience and outcomes.

All patients associated with each of the discharge letters selected in study 2 were sent by their GP practice an invitation pack for interview. The pack contained an invitation letter, patient information sheet, and copy of the consent form. It covered how and why the patient had been selected, the purpose of the study, risks and benefits of participation, research team details, and instructions of how to participate.

The objectives and RQs are below.

Objective 1: To gather patient perspectives on whether and how they should receive discharge communication through interviews about their experiences.

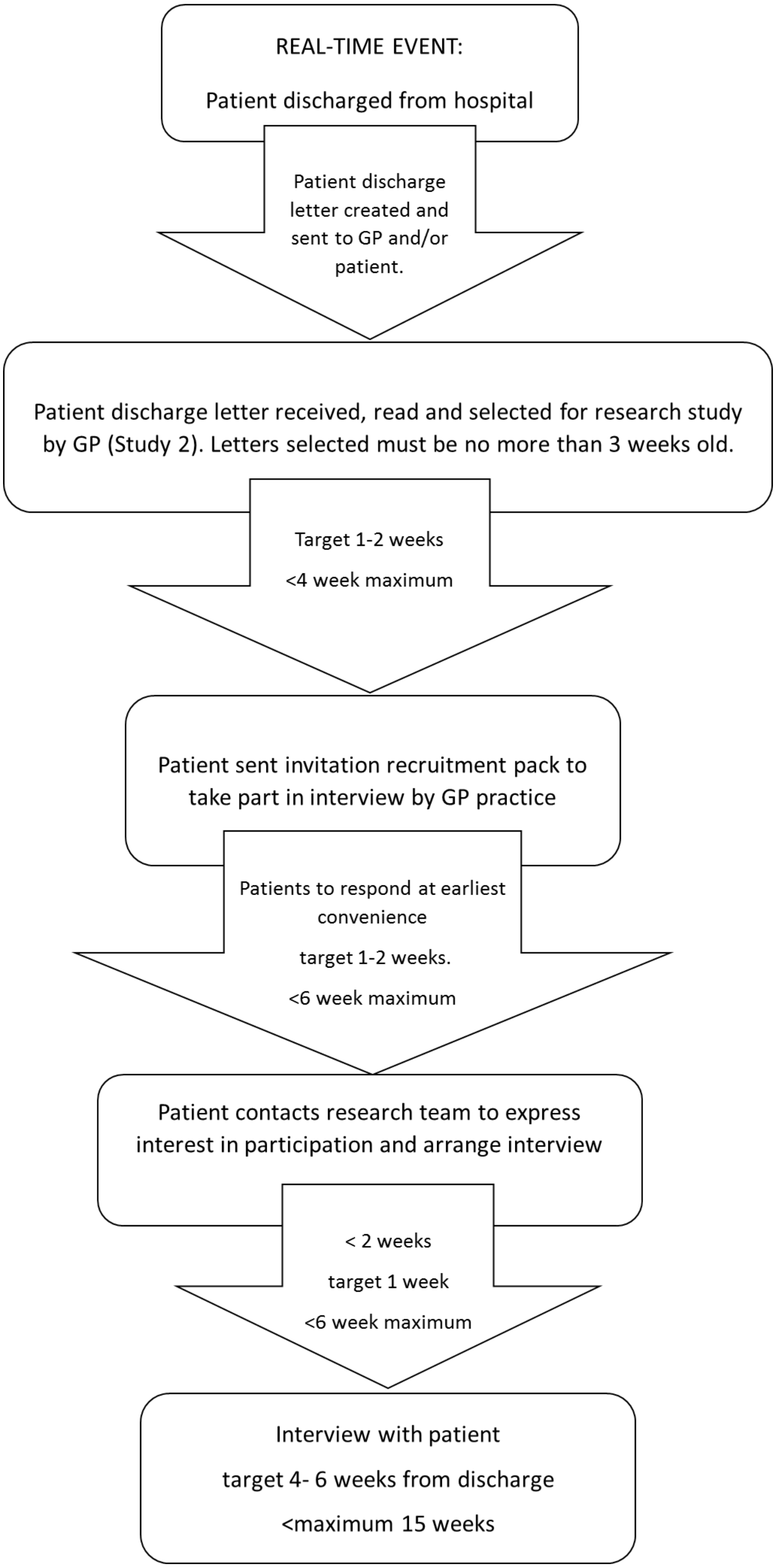
Objective 2: To analyse the interview data using corpus linguistics to examine patterns of patient experiences and views on written discharge communication.

RQ6: According to patients, in what form do they currently receive discharge communication, and why?

RQ7: According to patients, should they receive or not receive discharge communication, why, and in what form?

The invitation pack explained about the anonymised discharge letter sample and that one of the sampled letters related to recent contact that the patient had with the hospital. It explained that, if they wished, patients could withdraw their letter from the sample. It was also explained that the identity of the patient would only become known to the research team if the patient made contact with KW. Patients could contact KW or their practice with any questions and to arrange an interview with KW at their GP practice or home. If they chose to participate, they would have the option to contact KW to enquire about viewing the discharge letter at interview and that this would be enabled if their GP was in agreement. For those who had seen their letter previously, they were encouraged to bring or have this available at the interview. This design of letter availability for interviews, where possible, reduced recall bias. The target timeline for interviewing patients from the date on their discharge letter was 4-6 weeks. This time period aimed to minimise rates of attrition. This target recruitment timeline is presented in figure 4.5.2 on the next page.

Figure 4.5.2 Patient target timeline



Where possible, patient interviews were encouraged to take place at the GP practice. It was considered by KW and the supervisory team that the letter being shown to the patient at interview could have been upsetting or confusing if the letter contained previously undisclosed information or was written in inaccessible language (e.g. unexplained medical jargon). In such instances, the protocol was to advise the patient to contact their GP with any queries and concerns. The protocol for participants becoming upset in the interview was as follows: option to pause, stop, terminate interview, have a break (e.g. hot drink), reschedule. Participants could bring friends, partners and relatives with them to the interview for support.

Prior to commencement of interview, the purpose of the research and right to withdraw were reiterated. Written consent was required for all patient interviews in the presence of the interviewer (KW). As much as was possible, the setting and length of interviews was accommodated to participants' preferences, and aimed to reflect the research values of equality and diversity. The running time was flexible although expected to last between 30 minutes and an hour. Patient interviews could take place at their home rather than the GP practice if they preferred, in order to minimise any difficulty associated with traveling to their surgery. Study packs encouraged those who felt burdened or had concerns around interview accessibility to contact KW to discuss their individual needs so that, within feasibility limitations, these could be addressed. Marginalised groups such as ethnic minorities were of particular concern as they may have specific difficulties engaging with research. Thus, it was important to consider potential barriers to research participation such as travel, time, and child-care. Strategies to include travel reimbursement were considered to help overcome these in order to encourage participation and increase the diversity of participants.

The patient interviews were "semi-structured" (399) with eight predominantly open questions based on patients' experiences of discharge communication, their thoughts on their recent letter (if applicable), as well as their preferences for receiving discharge letters and how they feel discharge communication could be improved (see appendix C for interview guide). Towards the end of the interview, the participant was invited to add any further thoughts. Interviews were intended to be relaxed and conversational; all interviews were audio recorded. The purpose of a semi-structured interview design was so that

KW could plan questions and provide an interview framework whilst still allowing participants to have the freedom to explore any other relevant topics.

Participants were thanked for participation and offered a £20 multi-site high street voucher as a token of gratitude, with the options also to decline or donate the voucher. In addition, any out of pocket expenses incurred could be reimbursed if the patient notified KW. After interviews, participants were provided the opportunity to have a copy of their signed consent form and given a post-interview support sheet; this signposted them to different services for any queries or concerns (e.g. complaints) in regard to their discharge experience.

Study 4 Hospital clinician views toward written discharge communication: a survey of hospital professionals

Study 4 opened in May 2018. The aim of study 4 was to explore hospital practitioner perspectives on why patients currently receive or do not receive discharge communication and how this process might be improved. The objectives and RQs are below.

Objective 1:	To gather hospital practitioner perspectives on whether and how they think patients should receive discharge communication through surveys.
RQ8:	According to hospital practitioners, do patients currently receive discharge communication, and why?
RQ9:	According to hospital practitioners, should patients receive or not receive discharge communication, why, and in what form?

All HPs who wrote or signed the discharge letters selected by the GPs in study 2 were invited to take part in a survey. The content of the survey questionnaire was intended to reflect issues that had emerged in the prior studies. Hence, its content was finalised following data collection for studies 2-3, and the final design is presented in chapter nine (section 9.1). It was anticipated the survey questionnaire would ask the HPs about their assessment of the letter they wrote, their current practices and views on patients receiving or not receiving discharge letters, and how they think written discharge communication could be improved.

4.5.4 Data analysis

Content analysis

The initial stage of letter assessment was achieved in the selection phase; GPs were asked to give a *reason* for their selection of why the letter demonstrates a particularly successful or unsuccessful example of discharge communication. The protocol was to analyse the discharge letter sample from study 2 using *content analysis* (401). *Content analysis* (402) may be described as a systematic approach to qualitative textual data utilising coding techniques in order to deduce quantitative findings (401, 402). “Content analysis” is whereby textual material is coded and evaluated (401). Letters were to be coded in respect of presence or absence of specific content features (e.g. diagnosis, medication…) in order to characterise features of letters graded “successful” or “unsuccessful” by GPs. To increase validity and replicability of coding and analyses, content “codes” or categories were to be based on UK NHS standards and guidelines for content of discharge summaries and letters. Selection of appropriate and relevant guidelines was to take place immediately prior to analysis to ensure that the most relevant and recently published guidelines were considered (further details relating to this process and the coding scheme for content analysis can be found in sections 6.1 and 6.4 within chapter six). Categories from within selected standards and guideline documents were to be extracted and synthesised to form the coding headings for content analysis. To ensure that coding had relevance to the research questions, it was predetermined that categories would only be extracted if they related to content of discharge letters or informational needs of patients and GPs. This method for content analysis may be considered advantageous in that it guaranteed each discharge letter would be subjected to the same categorisation criteria for coding. The initially devised coding system was to be piloted by KW on a 5% sample of the discharge letters and then second coded by PhD supervisor JD for reliability with kappa set at $K \geq .8$ (403). Inter-coder disagreement ($K < .8$) was to result in discussion between the first and second coder until a coding consensus has been reached. Next, coders were to discuss how to improve the system for the remainder of coding and would refine, adjust and remove categories as necessary. Coding of the full letter sample would then be undertaken by KW.

Next, features coded between the successful/unsuccessful GP letter groupings were to be quantitatively compared using inferential non-parametric statistics (Chi-square, $p<0.05$) in order to test hypotheses for differences between discharge letter content features of the two groups of letters. It was expected that analysis of the 700 letter sample would attain content “saturation” whereby addition of further letters would have yielded no new patterns or information (404). It was anticipated that content analysis would reveal insights into what makes a “successful” or “unsuccessful” letter according to GPs. These insights had direct relevance to RQ3 and to shedding light upon how discharge letters can be improved. Content analysis was piloted with 30 anonymised letters from 3 GP practices prior to ethical approval in order to ensure this was a suitable approach to the data. The pilot work was feasible and was successful in revealing insights into content components of differing qualities of discharge letters. Additionally, the plan was to analyse any GP comments included on the GP letter selection template using corpus linguistics (hereafter, CL) employing the techniques described below. Using CL methods for GP comments permitted triangulation with content analysis findings for the purposes of confirmation and explanation of findings, or otherwise.

Corpus linguistics

Analysis of the interview and focus group data from studies 2-3 was analysed using linguistic methods, namely, corpus-driven (405-408) techniques. A “corpus” (409) may be defined as, *“a body of written text”* for linguistic analysis and description (407, 408). *Corpus linguistics* (CL) is the study of language through corpora (410) (plural of *corpus*), which are electronic, machine readable *“collections of texts”* (411). *Corpus Linguistics* is a sub-discipline of linguistics that focuses on analysing patterns of co-occurrence and meanings in corpus data (412-414); its application can bring new insights to research questions (415). CL is often described as the study of “real life” language use (416, 417). CL can be described as a methodology (418, 419) and typically draws on both *“quantitative and qualitative analytical techniques”* (p.4) (418).

CL has previously successfully been used to analyse healthcare data (21, 23, 420-429). Skelton and colleagues (34, 421, 430, 431) in several studies combine qualitative and quantitative approaches in order to consider contextualised language use within the doctor-patient consultation. Within these studies, the researchers place emphasis on examining specific features of language use such as colloquialisms. Patient-doctor interactions are also analysed using mixed methods corpus linguistics techniques by Adolphs *et al.* (429). These researchers looked at interactions between patients and nurse practitioners with a focus on politeness strategies of the nurse to resolve the consultation and induce positive outcomes. Comparable to Skelton *et al.,* Semino *et al.* (22-24, 432) use CL to look at specific features, namely metaphors, in healthcare discourse; they predominantly focus on the illness contexts of cancer, pain, and end of life care. These researchers argue that corpus linguistics is an *"empirical examination of linguistic phenomena"* (432)(p.12) that is both appropriate and rigorous. Hunt and Harvey (428) use CL to look at the discourse of persons with eating disorders. They demonstrate how CL can be useful to identify salient features of illness and identity discourse to provide insights into personal experiences and concerns of people with eating disorders. Harvey has also looked at the discourse of mental health with Brookes (426). They argue that the application of corpus techniques allows insights into how people discursively construct experiences of illness.

Brookes and colleagues (427) exemplify the value of corpora for examining large bodies of health data through their work on *NHS* choices feedback. They used mixed methods CL techniques to study 228,113 *NHS* choices comments in order to determine drivers of positive and negative feedback. They found, despite the importance of technical competence, that interpersonal skills and communication were key drivers in feedback and patient evaluation. Baker *et al.* (433) also published a book relating to this work on patient feedback using CL which explores their findings in more detail. Crucially, these studies all suggest that quantitative analyses in CL are not ends but beginnings; it is prudent and apt to compliment frequency and keyword analysis with fine-grain contextualised qualitative explorations in order to glean meaningful insights. CL focuses on analysing patterns and meanings in data. Kennedy (407) says:

> "*The corpus provides contexts for the study of meaning in use and, by making available techniques for extracting linguistic information from*

> *texts on a scale previously undreamed of, it facilitates linguistic investigations where empiricism is text based”* (407) (p.9)

Corpus processing can reveal language patterns and commonalities as well as rare cases; neither of which are likely to be reliably available through manual searching or intuition alone (417, 434, 435). Moreover, computational methods of CL affords rapid qualitative and quantitative analysis of large quantities of qualitative data (416, 419, 436) that would otherwise be insurmountable to analyse manually (23, 410, 418); the computer-assisted features of modern corpora mean that corpus software has the potential to search, sort and process *“huge amounts of data”* with speed and replicability (407, 416). It was for this reason that CL was particularly suited to the data for studies 2-3 where 30-60 patient and 30-50 GP interviews and focus groups were anticipated.

Initially, all interviews and focus group recorded data were transcribed by KW. Self-transcribing aimed to ensure uniformity across transcripts and increase data familiarity (417). Transcription conventions were foregrounded by contemplation of how the data was to be used (437). Thus, superfluous details such as phonetic features were not transcribed and instead transcription was verbatim and aimed to capture discourse features important to the RQs (e.g. laughter, pauses). Following, Leech & Rayson (438) and Love *et al.* (439) a “standard orthographic” (439, 440) transcription style was employed. This is a relatively rapid transcription style that is also highly accessible in terms of interpretation. A key of transcription features is found in table 4.5; this key is based on conventions used by Cameron (441), Koester (442), Sacks *et al.* (443), Jefferson (444), Ten Have (445), and West (446).

*Table 4.5 Key of transcription features**

Symbol	**Denotation**
(.)	pause
…	Ellipsis/where quote is shortened
=	latching
italics	Emphatic emphasis
?	Rising intonation
!	Animated tone
*	Paralinguistic behaviour
[]	Overlapping speech
[CAPS]	Identifiers changed to generic terms

During transcription, it was essential to anonymise the research data and develop a coding system for managing withdrawals and organising data for matching of “quartets”. Any identifiable features found in transcripts or research data (e.g. surveys) were removed and replaced with generic terms e.g. [NAME]. A coded nomenclature for the research was developed as follows: all participants were assigned unique ID codes so that they could be identified by the research team only (e.g. P001), letters were labelled with ID codes that corresponded with patient codes in order to allow quick letter “matching” for patient interviews and quartet building, participating sites were given generic labels (e.g. hospital A). A secured key was kept for tracing sites and participants from their codes back to their original identifiers if required. Names were only disclosed for patients where they took part in interviews; this information was only recorded on the written consent forms which were stored separately to other research data. Notably, the regions in which the research took place could not be anonymised. This is because the collaborating CCGs (South Warwickshire, Coventry & Rugby), which had to be acknowledged as funders of the research, defined the surrounding localities in which the research took place within the West Midlands, UK. Therefore, although sites are labelled generically and with codes, it is acknowledged that descriptions of sites (e.g. hospital sizes) mean that hospital sites can be identified. However, this has been considered throughout the research and individual participant data is at no point linked with particular sites; the result is that even if a site is identifiable, the data relating to that site should not be traceable to individual participants.

Following transcription, copies of formatted transcripts were converted to plain text files and imported into *Antconc* (447), a specialist linguistic software or *concordancer* (410), to build two corpora; one for GP data and one for patient data (see appendix D for table displaying word counts for all thesis corpora).

The relevant CL technical terms for this study will now briefly be defined in line with their interpretation and usage in this thesis.

A frequency list in isolation, that is a ranked list by raw frequency of the words or lexical items in the corpus, is likely to reveal “functional words” e.g. *the*, to be top-ranked (23, 410, 440). This means words which are highly common in the language (English here) for instance “the” may also present as highly common or frequent in the corpus and therefore such a finding is hardly remarkable (410, 440). It is for this reason that “keywords” and “keyword lists” can be useful. A “keyword list” is a ranked list of “keywords” generated when the frequency lists of two corpora are compared statistically (23, 410, 418); “keywords” are words which are statistically more significantly frequent (410) or "key" (23, 448) in one corpus list compared with another (418). As Szudarski (418) explains, *"such words are useful because they provide information about the keyness or specificity of a given corpus in terms of what it is about"* (p.25) (418). The corpus compared with the one under study (target corpus) is often called a "reference corpus" (410, 418) and is generally a much larger corpus (23).

Firth (449) famously said *"you shall know a word by the company it keeps"* and is often credited as the founder of the concept of *collocation* (450). "Collocation" (414, 451) is the phenomenon whereby words or "collocates" (434) habitually co-occur with one another (405, 451). Collocates can be reckoned through statistical calculations such as log-likelihood or mutual information calculations (416, 417, 434, 452-454).

Lemmatised (455) forms of words or *lemmatisations* include synthesis of all variants of a word *lemma* or base (e.g. to discharge) encompassing all inflectional variations such as those marked for different tense or person (e.g. discharged, discharging…).

"Concordance lines" (410), display words of interest, "keywords" or "nodes" in their context within the text, that is, with a chunk or span of co-text either side (410, 418); the standard display for concordances is termed keyword in context (KWIC) lines (405, 418, 440). Therefore, concordance lines allow words to be viewed in their immediate lexical and semantic context; this is important as language varies according to context (412, 413). Concordance lines permit rapid identification of language patterns and particular word and phrasal frequencies (435). Szudarski (418) describes that detailed reading and exploration of concordance lines can provide information regarding collocates, phraseology, syntax, and semantic tendencies.

Hardie (410) makes a clear distinction between the concepts of *semantic prosody* (456) and *semantic preference* (457) and defines them both as follows:

> "*Semantic preference or semantic association refers to a consistent co-occurrence with a set of words which – again, while perhaps not individually significant collocates – are drawn from a recurring semantic field. Finally, semantic prosody or discourse prosody refers to a broad function or meaning which tends to co-occur with the node but which may be variously realised."* (410) (p.513)

Other features of the corpus can also be statistically mined such as measures of dispersion of a linguistic item (414). *Dispersion* refers to how evenly or unevenly a word is spread across the corpus (23, 414, 458). It is important to consider the *dispersion*, particularly of seemingly frequent features, as the high frequency may be due to frequent use of a word within a single text rather than across the corpus (23, 405, 458, 459). Observing distributional patterns through considerations of dispersion were made utilising the *Antconc* "concordance plot" function. Crawford (405) describes this function as beneficial due to the easy to interpret *"visual representation of the distribution patterns".* This function displays: the overall number of word occurrences, the number of texts in which the word occurs, and the number of times the word occurs within each text. This can help avoid or at least reduce false positives and over-generalisations (448).

The concepts of *corpus-based* (436) and *corpus-driven* (405, 406) methods are often contrasted whereby the former generally refers to a deductive approach where pre-determined linguistic features are examined in the corpus and the latter embraces a "bottom-up" inductive approach where features emerge (436) and patterns are generated from the data without pre-determined topics or pre-conceived theories (460). However, contrasting and creating a binary distinction between these two concepts has been previously contested (406, 436). Therefore, this research considers both concepts to lie on a spectrum of corpus methodologies; the CL methods described below and employed in this thesis bears closer resemblance to a corpus-driven approach.

In line with a predominantly corpus-driven (436) approach and following previous corpus linguistics health-focussed papers (421, 426, 428), quantitative techniques in the form of *keyword* lists (410) were used as a point of departure for identifying "patterns" (406, 413, 434, 461-463). Hence, analysis was keyword-driven and focussed on sorting keywords by *keyness* in order to expound salient corpus features (461). Adolphs *et al.* (429) describe this approach as *"taking the pulse"* (p.25) (429) of the data. The *BNC* Spoken (2014) (439) was used as a reference corpus for generation of keywords due to the comparable spoken data mode. This is an 11.5 million-word component of the *BNC*2014 containing transcripts of spoken data from 672 speakers. Baker *et al.* (433), in their study on the language of online patient feedback, use "log-likelihood" for the generation of keywords. They (433) explain this statistical test as follows:

> "*Log- likelihood is a hypothesis- testing measure that assigns to each word in the corpus a score that reflects how likely the word is to be a keyword when the corpus is compared against the reference corpus.*" (433) (p.29)

Following Baker *et al.* (433), the statistical calculation for sorting "keywords" by "keyness" was log-likelihood (LL). This was calculated according to the *Antconc* default settings (5 per cent level; $p < 0.05$; critical value = 3.84). This level ($p < 0.05$) is also commonly used as the cut-off for statistical significance within the health sciences (464, 465).

Thereafter, qualitative techniques, informed by the quantitative findings, were used to investigate and examine *collocations* (452) and *concordance lines* (410); this allowed more in depth exploration of quantitative findings (410, 415, 461). All concordance line outputs were read and random samples were used to illustrate patterns; ID codes of transcripts for sample lines were checked to ensure the samples were not drawn from the same one or few participants. The number of characters displayed either side of the keywords in the concordance lines was automatically generated using the *Antconc* software (characters=25 either side of the keyword); this character count does not include spaces and lines were tidied to ensure words were not cut-off. The "span" for proximity of collocation was set to four words (418, 440) either side of the word under scrutiny or "node" (418). Again, the statistical calculation for generating collocates was log-likelihood ($p<0.05$). In their work on patient feedback, Baker *et al.* (433) make use of the measure "log-likelihood" for generating both keywords and collocates. They (433) explain and justify this choice of measure in regards to their collocate analysis as follows:

> "*…in cases where we are more interested in the wider range of meanings that a word possesses, as opposed to merely focussing on evaluation, we have used the log- likelihood measure of collocation as that produces a wider range of collocates but also tends to filter out high- frequency grammatical words like* the *and* of*.*" (433) (p.31)

Subsequently, for collocation analysis in this research, log-likelihood (LL) was selected as the statistical measure because, following Baker *et al.* (433), this measure was judged likely to produce a wide range of *content* word collocates; this was appropriate and suitable for the research as *content* words and meanings were of particular relevance to the research questions, as opposed to highly frequent *grammatical* or *functional* words (e.g. “the”). Hence, following Baker *et al.* (433) as an exemplar, and also for consistency of statistical calculations throughout the corpus analysis, “log-likelihood” was selected as the statistical measure of collocation. Again, in line with common convention, the p-value cut-off was set at 0.05.

Concordance examination for keywords, where relevant and applicable, considered all lemma (455) realisations which were manually synthesised or *lemmatised* (455). Corpora were also mined for measures of dispersion (414, 458, 459, 466) of salient linguistic items and patterns in addition to considerations of *semantic prosody* (456, 457).

To structure analyses and presentation of results, categorisation systems were developed for each CL dataset. Results for the corpus comment analysis in chapter six were anticipated to be somewhat small as the template had limited space and each participating GP was intended to make multiple comments. Therefore, comment corpus results were thought to be manageable as a single narrative. The GP data for chapter seven had no inherent categorisation system as interviews were narrative. Therefore, following examples of previous corpus studies (424, 427) dealing with somewhat unstructured bodies of data, keyword results were put into “themes”. A “theme” was derived by grouping keywords by their contextual meanings which were salient to the research questions. Themes were defined initially by KW during preliminary qualitative analyses of keywords through concordance line reading and re-reading, and then confirmed by supervisors. The use of “themes” here to group keywords and structure the write-up of analysis is distinct from a qualitative “thematic analysis” (89) whereby the data would be read, coded and then checked for theme validity (89, 90).

The CL analysis of the patient data was planned to be categorised by interview question as well as any overall patterns being described narratively in a separate sub-headed section. As the interview questions were designed around the RQs, the structure for analysis considered each of the consolidated question responses in turn as well as an overview of the entire corpus to elucidate any missed patterns. The quantitative keyword-driven analysis and hand-searching were predicted to allow pattern-identification and quantification of how patients currently receive written discharge communication or not (RQ4, RQ6) and whether or not patients should receive letters and why (RQ5, RQ7). The qualitative methods were anticipated to allow expansion and explanation of quantitative findings to include reasons why patients are currently receiving or not receiving letters and the reported outcomes (RQ4, RQ6) in addition to why patients should receive or not receive discharge communications (RQ5, RQ7).

Triangulation (467) of CL findings with active corpus searching and hand-searching was also undertaken to increase analytical robustness and validity of findings (467) and to identify any “missed” patterns, to attain or at least come close to attaining *pattern saturation* with relevance to the RQs (427, 468).

Statistical analyses

Across all studies, demographic information, where provided, was analysed descriptively. Inferential and descriptive statistics were used to describe the sample as well as for hypothesis-testing, where applicable, to ascertain whether there are differences of viewpoints on discharge communication between groups.

HP survey results were explored using descriptive and inferential statistics. This included frequency tables, percentages, mean, range, median, IQR, and, where appropriate, standard deviation or skewness and kurtosis scores (469). The free text data was intended to be manually analysed and narratively overviewed if numbers were small. CL analysis was planned to be undertaken if there were a large number of responses. Additionally, where possible, inferential statistical analyses or hypothesis-testing (470) statistics were anticipated where independent variables would take the form of any disclosed sociodemographic (e.g. age) or administrative information (e.g. hospital role). Overall, quantitative analysis of survey data depended on selecting statistics appropriate to the data and number of returned surveys. The survey results were expected to describe *if* practitioners currently copy patients into their letters and *how* hospital practitioners think this process *should* take place.

Discussion of planned data analysis

Analyses and comparisons of aligned multiple perspectives through “quartets” were anticipated to provide new insights into some of the previous reported discrepancies on the impacts of patients receiving letters. It was expected that for some discharge letters, it would not be possible to form a complete quartet. Nonetheless, participant viewpoints and letter analysis would still provide data and valuable perspectives relevant to the study research questions. Qualitative data analysis can be subjective and interpretation of qualitative data may be limited by the researcher; individual identities and attitudes inherently impact upon data interpretations (471). Therefore, “reflexivity” was practised throughout the research to account for this subjectivity and reduce but not eradicate bias (471, 472). The quantitative methods involved in the corpus-driven analysis of qualitative data augments accountability and replicability of the findings in order to increase validity and reliability and satisfy falsifiability standards (436). Nevertheless, quantitative analysis was expected to be limited by the study sample; due to small anticipated sample sizes and predominantly categorical variables, parametric testing was unlikely to be possible.

Further limitations of the methodology are discussed later in the thesis, in chapter ten.

4.6 Integration of Study Findings and Dissemination

Findings from trio and quartet cases across studies were intended to be integrated in a secondary-level data analysis through use of meta-matrices (473, 474) to allow synthesis of qualitative and quantitative findings across phases in chapter ten. The advantages of using a meta-matrix to synthesise and compare quantitative and qualitative results are described by O’Cathain *et al.* (475) to be a clear display of congruent and incongruent results and patterns across cases. Furthermore, Wendler (474) writes, *“the meta-matrix method provides a useful alternative approach for secondary-level data analysis in mixed-methods research.”* (p.521) (474) Hence, a meta-matrix is a suitable tool to integrate and compare findings. The juxtaposition of perspectives through the meta-matrix will be used to highlight convergence and divergence and trends between different groups. The matrix will also clarify where there are perspective “gaps” or incomplete data quartets.

Individual perspectives across phases were planned to be matched to specific discharge letters within the sample to build “quartet” cases (target=30 with 90 unique perspectives). This aimed to provide insights to make practicable recommendations for how discharge communication in terms of patients receiving letters and letter content may be improved.

The programme theory (PT) from the realist review in chapter five was planned to be further developed based on primary data study analysis in order to generate a resultant theory for when patients receiving and not receiving discharge letters does and does not “work”. The research begins with a realist interrogation of evidence in study 1 (realist review, chapter five). Although studies 2-4 in chapters 6-9 do not explicitly use realist evaluation to approach the data, one of the purposes of these studies is to produce findings for realist interrogation during the data and findings synthesis stage in chapter ten. Thus, all studies provided evidence for realist interrogation and all findings are synthesised in order to inform the resultant realist programme theory which is presented in chapter ten. Hence, a realist approach grounds the research and draws together the findings from across all of the research studies.

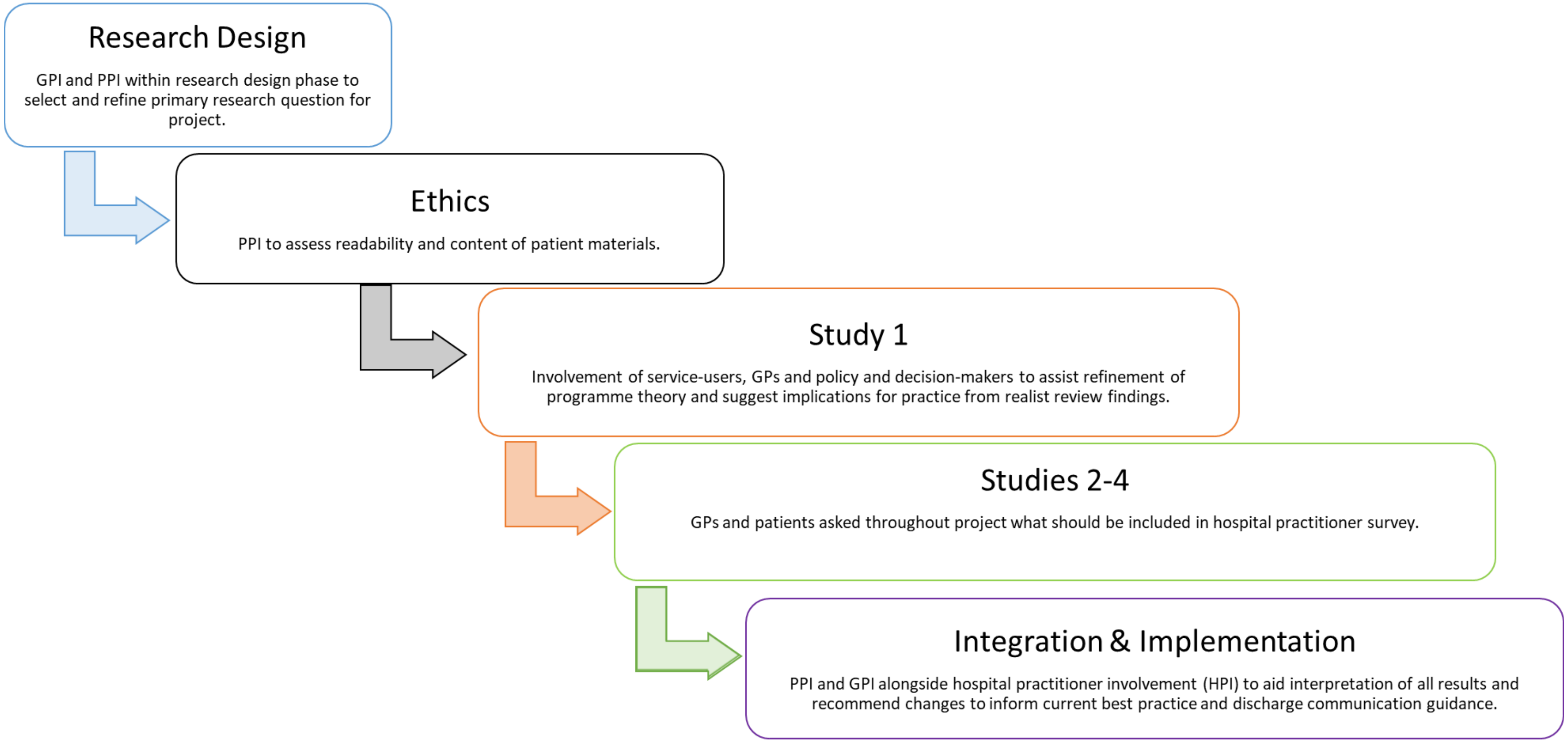
The project’s overall methodological approach involved PPI, clinician, and policy maker involvement in a process of collaboration (476). This was undertaken in the design stage and was also planned for interpretation of results and consideration of the research finding implications for practice. Thus, the project aimed to intrinsically exemplify use of multiple stage involvement or *collaboration*. This approach directly contrasts to studies that involve PPI in only a single stage or what may be criticized as tokenistic or “tick box” PPI (477).

The objective for involvement work was that participants and stakeholders who collaborated in the study were to be contacted toward the completion of data analysis, where interest in results was expressed on the consent form. It was planned to provide a results summary and invite interested stakeholders to assist in interpretation of results. This stage of involvement was intended to mirror involvement methods in the design phase. The protocol was to vary involvement methods depending on the preference of those involved and feasibility limitations. Methods were expected to include but were not limited to: group discussions (e.g. discussion of findings with local PPGs), telephone and electronic feedback (e.g. communications with service users who provided email or phone contact details to hear about results in study 3), and presentations (e.g. KW present at meetings with collaborating CCGs). This involvement work was intended to increase the relevance and impact of the research findings and provide an opportunity for participants and stakeholders to suggest recommendations and improvements for best practice. It was hoped that the results would aid updating and informing policy and guidelines on discharge communication with a specific focus on current practice of patients receiving discharge letters.

Planned project outputs for research dissemination included publishing papers in peer-reviewed journals, newsletter outputs, and conference and teaching presentations as well as the thesis itself. A summary of findings in plain English was to be circulated to interested participants and sites, collaborating stakeholders, the local CRN, the HRA (Health Research Authority), and any other interested parties.

The plan for PPI and GPI within the project stages is displayed in Figure 4.6 on the next page.

Figure 4.6 PPI plan



Research Design

GPI and PPI within research design phase to select and refine primary research question for project.

Ethics

PPI to assess readability and content of patient materials.

Study 1

Involvement of service-users, GPs and policy and decision-makers to assist refinement of programme theory and suggest implications for practice from realist review findings.

Studies 2-4

GPs and patients asked throughout project what should be included in hospital practitioner survey.

Integration & Implementation

PPI and GPI alongside hospital practitioner involvement (HPI) to aid interpretation of all results and recommend changes to inform current best practice and discharge communication guidance.

4.7 Ethical Considerations and Approvals

4.7.1 HRA (Health Research Authority) approval: initial drafting

Ethics approval (appendix E) was granted in July 2017 by the *NHS* Health Research Authority (HRA) (IRAS ID: 219871, REC reference: 17/WM/0170). The University of Warwick acted as the research sponsor. Appendix F summarises the ethical issues and proposed solutions from the IRAS form. Following IRAS submission, the CRN confirmed the study had been formally accepted onto the CRN portfolio which made the study eligible for study support costs, support during study set up, and recruitment and ongoing support with engagement of sites and conducting the research. CRN support was felt to have markedly increased recruitment.

4.7.2 PPI: informing ethical considerations

There are several papers which suggest PPI should be integral to ethical approval applications (478-481). PPI is described by Tarpey & Bite (479) to potentially improve and inform ethics application documents. Similarly, INVOLVE (480) write that PPI can improve quality of consent information and participation information sheets. Moreover, they say sharing ethics documents with patients, the public, and health service users can ensure the relevant and important information is available in the patient study sheets and that this information is comprehensible to lay persons. Tarpey (478) also makes reference to PPI as useful for assessing the suitability of consent information for informed consent. Many of the benefits of PPI for ethical considerations are explicitly highlighted by Staley *et al.* (481) who argue the views of PPI members are *"informed by knowledge and experience"* (p.36) and therefore valuable to research design considerations. They make reference to the use of PPI in relation to considering practical arrangements for participants, risks and benefits of the research, recruitment plan, research design and data protection, and confidentiality as well as patient information documents (481). Consequently, given the high value of consulting patients with ethical considerations, it was decided to use PPI during the ethics process (see Figure 4.6).

Patient information materials were shared with service-users for them to check the readability, clarity, and content of the materials. A pre-established panel of *NHS* service-users set up for another research project was approached to review these patient materials. Feedback was given electronically or over the telephone by 4 respondents. The service-users had personal experience as patients, caring for others, coordinating carer groups, and some had worked for *UNTRAP*, Warwick University's PPI organisation.

Several changes were made to the documents following their feedback. Changes included: patient participation information sheet reduced from 9 to 4 pages as patients felt this length was not manageable, details which the panel members considered to be excessive or unnecessary were removed (e.g. exact details of data storage), page numbers across the 3 documents were aligned to form a “recruitment pack” so it read as a single document, and the annual income question changed to "pay bands" rather than open question as this was considered less intrusive. Phrasing changes were made throughout all documents and terminology and grammar simplified. As far as possible, short simple sentences in plain English with no jargon were used in the patient materials. The expenses and £20 thank you voucher were also discussed with the ethics PPI group who felt this was a suitable amount. None of the panel members reported concerns with what the research asked of participating patients or potential harm. PPI members commented that they liked that the research included the opportunity for participants to provide feedback on the research results. They reflected that it is frustrating to participate in research and then not receive further contact.

Overall, the process of PPI for reviewing ethics documents improved the quality of patient materials. It strengthened the argument for readability of patient materials because they had been tested and trialled with lay persons. The feedback was highly valued.

4.7.3 REC Meeting

At the REC meeting (24/05/2017), the committee focussed on: interviewing patients about their discharge experience and potentially showing them a letter which they had not seen before, without a clinician present. The risks of harm weighted against the benefits of the research were discussed. I argued the value of the study and that sharing information with patients aids memory recall and promotes transparent health communication which is in line with patient-centred care. Following the meeting and minor revisions, the REC then issued a favourable opinion for the study (see appendix E for top sheet of letter). The process of REC review improved the quality of the ethics documents and the wording and clarity of materials.

4.7.4 Research passport

Research and Development permission was needed to conduct the research at each site; this included capacity and capability assessments, managerial signing of site agreements and GP reply slips. As the research involved unsupervised patient contact, it was necessary to obtain a research passport with DBS and occupational health clearance. Sites issued “letters of access” and “honorary contracts” as required.

4.7.5 *NHS* ethics approval: final reflections

From the point of drafting the IRAS form and supporting documents until the ethical approval process was completed in its entirety in total took 8 months. This was a complex and multi-stage process which would have been difficult to achieve in a shorter time span. Completing the *NHS* ethical approval process as part of a PhD may not have been possible were it not for a 4-year scholarship funding stream. This was a valuable learning experience and helped make definite methodological decisions and improve the quality of the research. I found it very beneficial to have completed this process as part of a PhD under supervision. This experience has increased my confidence for producing future ethics applications.

4.8 Chapter summary

This chapter has outlined the research design and ethical approval process. Methodological approaches have been justified to include the mixed methods design, use of CL, and underpinning realist theory. This chapter has explained that the thesis comprises four studies with an overall target of building a sample of 30 matched data “quartets” for discussion in chapter ten. The next chapter introduces the first study, the realist review.

5. Study 1 Improving best practice for patients receiving hospital discharge letters: a realist review

This chapter outlines the secondary data synthesis stage of the project in the form of a realist review. The justification for this approach, as described in section 4.4 within chapter four (page 62), was due to the complexity of the intervention under scrutiny, "patients receiving discharge letters" which may have a considerable range of uncontrollable and variable affecting factors; these are described in section 5.2 below. This chapter includes an Introduction (5.1), rationale behind selecting a realist review and methodology (5.2), aims and questions (5.3), review design (5.4), the six steps of the realist review and findings (5.5-5.14), resultant programme theory and discussion (5.15-5.16), the review limitations (5.17), and conclusion (5.18).

The full realist review protocol (376) and realist review (73) have both been published by BMJ Open (73, 376). The protocol is also registered with PROSPERO 2017: CRD42017069863. Sections of this chapter are modified extracts from the publications.

5.1 Introduction

Chapter two reviewed literature on patient discharge letters and covered different problematic discharge letter topic areas. The chapter reported issues, on a national and international level, with patients receiving letters inconsistently and variation on the letter forms patients receive (e.g. direct copy of clinician letter, patient personalised letter…). In the UK specifically, patient-copied letters remains to be "good practice" and not a requirement; the result is simply that some patients receive letters and some do not (62, 63, 186). However, research on the impacts of this variation remains somewhat limited (187, 191).

This chapter comprises a *realist review* specific to the intervention of patients receiving written discharge communication (discharge letters or summaries). For the purposes of this chapter, the intervention or programme of "patients receiving written discharge communication" will be referred to as the "intervention" and defined as: the patient being given or sent any form of written paper or hard-copy hospital discharge communication or such communication being made available digitally; this could be a direct copy (cc: [PATIENT]), a patient-directed letter, or a combination of the two.

A realist review is a "theory-driven, interpretative approach to the synthesis of evidence" (377). The realist review is a more focused synthesis of evidence than the scoping review in chapter two as it has been informed and refined by the scoping review findings. Chapter two briefly described the effects of patients receiving letters whereas realist review methodology allows for the *how*, *why, when,* and *for whom* related to this intervention to be explored and explained. This is apt as whether or not it is beneficial for patients to receive discharge communication and whether this should be a direct copy or personalised letter remains equivocal. No review or evidence synthesis of this intervention was found.

The capacity of a realist review to *explain* how an intervention *works*, as described above, rather than just *evaluating* an intervention is one of the main differences between a realist review and other review types; it is also arguably one of the key strengths of a realist review (363, 482) . The advantages of realist approaches are well-documented and have been growing in popularity, including within healthcare contexts, examples are: Kastner *et al.*(386), Pearson *et al.* (483), Brennan *et al.*(377), Wong *et al.*(378) and Greenhalgh *et al.*(484).

5.2 Realist Review Methodology

As outlined in the work of Pawson (363, 379-382, 384), a realist review should develop and refine a "programme theory" which explains how an intervention or programme may be theorised to "work"; this details within what contexts, for whom, why and to what extent (363, 377, 380, 384). A programme theory comprises a series of "context, mechanism, outcome" configurations (CMOCs); Pawson (384) describes "context" as the intervention setting, "mechanism" as a person's psychological reaction to the intervention, and "outcome" as the resultant effect. A "programme theory" for patients receiving written discharge communication was developed during this review. The review protocol (376) described justification for a realist review as follows:

> *"A realist review approach views "causation" as generative, that is, "mechanisms" may be triggered within certain "contexts" resulting in one or more "outcomes" following an event or "intervention" (384). A realist review, therefore, is valuable to inform attempts to reproduce beneficial or positive outcomes through understanding how an intervention works and hence under what circumstances, the mechanisms connected to beneficial outcomes may be triggered (485). Hence, within a healthcare context a realist review can aid understanding and explanation of how the intervention may improve clinical outcomes. Another value or strength of a realist review is the capacity to account for complexity and non-linear causal relationships; this is particularly relevant for research on the intervention of patients receiving written discharge communication (363, 377). The intervention under scrutiny is complex in several ways: the form of discharge communication may vary and the success of the intervention is highly context-dependent and most likely influenced by factors such as practitioner communicative competence, patient education and understanding, and attitudes of the patient and professional."* (p.2) (376)

Thus, a realist approach is suitable and useful for reviewing the evidence base on patients receiving discharge communication.

5.3 Realist Review Aims, Questions and Objectives

The review aims, objectives and research questions are displayed in table 5.3 over the page.

Table 5.3 Aim, Objectives and RQs

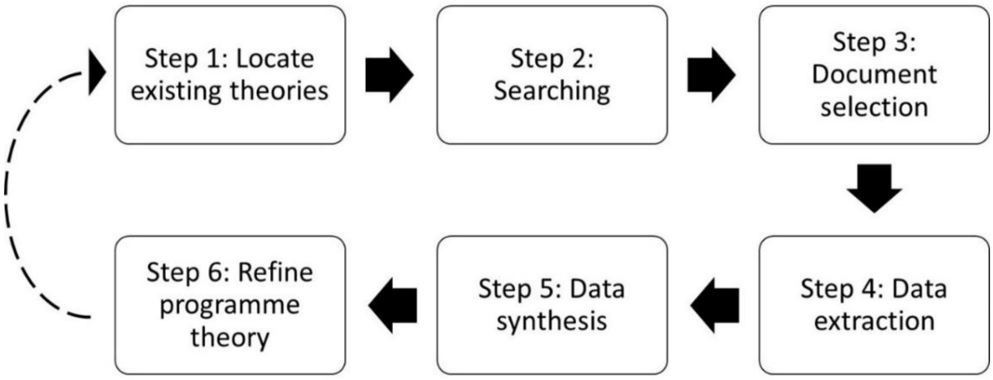
Aim:
To understand how the different effects* are produced from patients receiving written discharge communication.
Objectives:
1. To conduct a realist review to understand how and why the different effects arise when patients receive written discharge communications. 2. To develop a programme theory (PT) for patients receiving written discharge communication. 3. To make best practice recommendations for patients receiving written hospital discharge communication.
Research questions (RQs):
RQ1: What positive and negative outcomes have been reported on patients receiving written discharge communication? RQ2: What are the important contexts which are associated with whether the varying mechanisms produce the different effects, and why?

**Effects may be simplified into desired or 'positive' and undesired or 'negative' depending on whether the outcome is reported in the source as beneficial (e.g. increased satisfaction) or detrimental (e.g. increased anxiety)* (376).

5.4 Review Design

The overall review design was informed by previous literature, driven by the research questions, consists of six steps (378, 384, 482) and is further described in the protocol paper (376). This design is summarised in Figure 5.4.

Figure 5.4 Review design



5.5 Step 1: Locate existing theories

The task of locating existing theories to develop an initial rough PT was achieved through a scoping search. Theories were sought which contributed toward understanding how patients receiving discharge letters *works* or not. Search terms were based on the intervention (e.g. patient cop(y)ies). Published resources and healthcare websites were searched to ascertain a range of evidence. Details of the sources searched and terms are in table 5.5.1 on the next page. The search strategy was altered for different sources as required.

Table 5.5.1 List of sources searched and search terms

Source	Search terms
MEDLINE	written [All Fields] AND ("patient discharge"[MeSH Terms])
	("patient"[All Fields] AND "discharge"[All Fields])
	("patient discharge"[All Fields] OR "discharge"[All Fields]) AND ("communication"[MeSH Terms])
	("communication"[All Fields]) AND ("patient discharge"[MeSH Major Topic]) AND ("patients"[MeSH Terms])
	("patients"[All Fields] OR "patient"[All Fields]) OR ("letter"[Publication Type] OR "correspondence as topic"[MeSH Terms])
	("correspondence"[All Fields]) AND ("patients"[MeSH Terms])
	("patients"[All Fields] OR "patient"[All Fields]) AND "patient discharge"[MeSH Major Topic]) AND ("communication"[MeSH Terms])
	("communication"[All Fields]) OR (receiving [All Fields]) AND ("letter"[Publication Type]) OR ("correspondence as topic"[MeSH Terms])
	("letters"[All Fields]) AND ("patients"[MeSH Terms] OR "patients"[All Fields] OR "patient"[All Fields]) AND ("patient discharge"[MeSH Major Topic])
	("patients"[MeSH Terms] OR "patients"[All Fields] OR "patient"[All Fields]) AND ((copies [All Fields]) AND "patient discharge"[MeSH Major Topic]))
	((("patient discharge"[MeSH Major Topic] OR "patient discharge"[MeSH Terms]) AND letter [Other Term]) AND ("patients"[MeSH Terms] OR "patients"[All Fields] OR "patient"[All Fields])
	1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11
Web of Science	Written patient discharge communication
	Patients receiving letters
	Patients receiving discharge letters
	Patient copies of written information
	Patient copies written information
	1 OR 2 OR 3 OR 4 OR 5
Department of Health	Discharge communication OR patient letters OR patients receiving letters
Royal College of Physicians	Discharge communication OR Patient letters OR Patients receiving letters OR Patient copy OR Patient copies OR Patients receiving written information

Search strategies within articles and article indexing were noted in order to inform the larger search (step 2); these are in table 5.5.2.

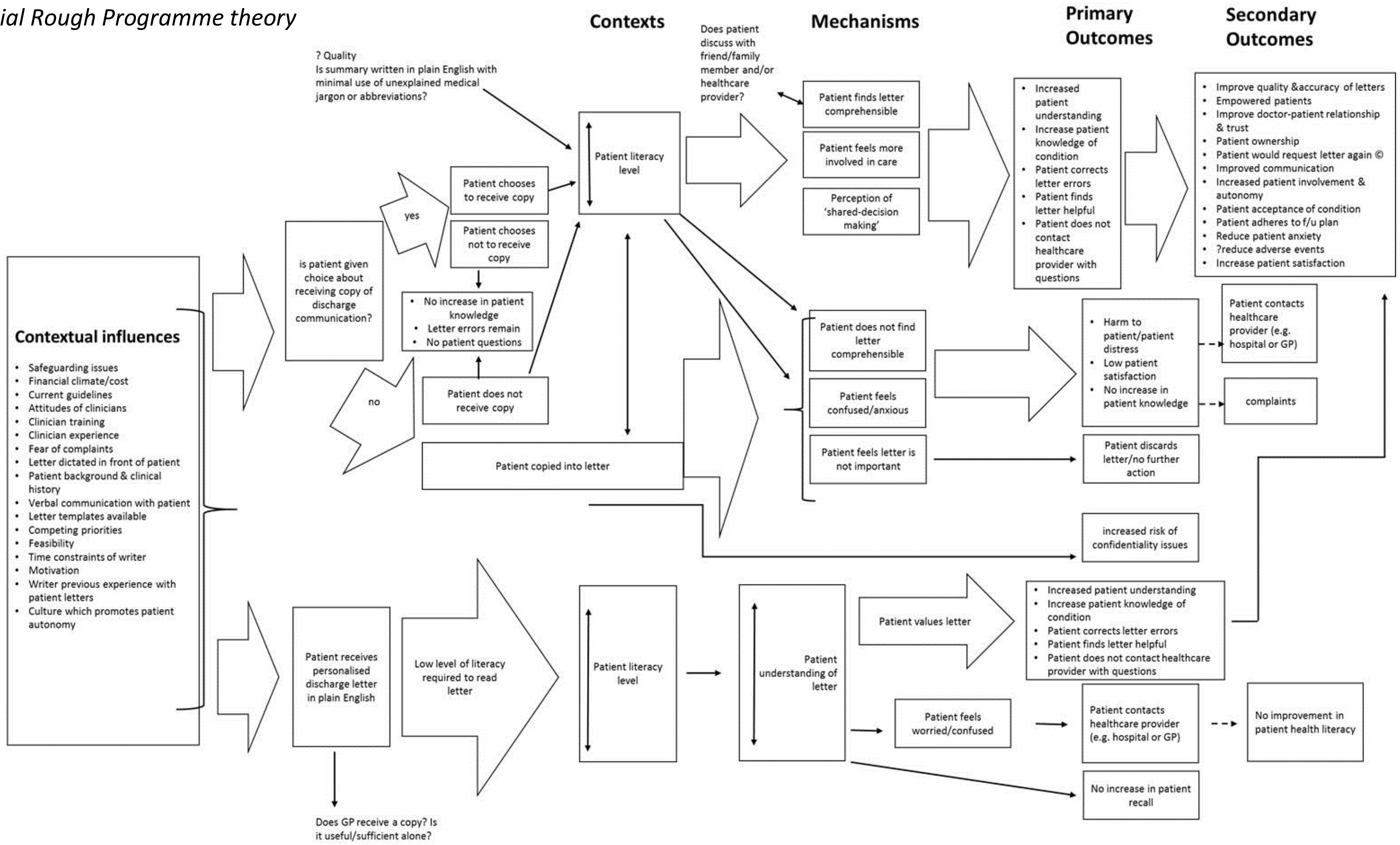
Table 5.5.2 Indexing identified in articles

Type of indexing/search	**Terms**
Keywords	letter, communication, information, comprehension, correspondence, patient education, written information, doctor-patient communication, personal letters, writing to patients, patient comprehension, hospital discharge, hospital processes
MESH	patient access to records, physician-patient relations
TOPIC	correspondence, patient education, patient satisfaction
Free text	Patient letter, copy letter, copy correspondence, doctor letter
TAGS	*NHS*, patient involvement, delivery of care, health informatics

As the purpose of a scoping search is to locate existing theories and initial concepts, the search was not intended to be exhaustive or comprehensive. Sources were selected based on their "relevance" (363, 379, 384) to the PT; where *relevance* concerns "*does the [source] address the theory under test?"* (p.29) (363) (see page 106 for full document selection criteria for review). Crucially, the whole source did not need to inform the PT but the relevance and contribution of sections of the document were considered (363). During the review the initial programme theory is gradually developed. There are no hard and fast rules for how well developed the initial programme theory needs to be before the main searching is undertaken (376). Instead judgement is needed as is the need to balance the degree of comprehensiveness and practicalities (376).

Due to feasibility limitations, no more than 30 documents were to be screened for theories in step 1. In total, 27 documents were selected from the scoping search. All were then interrogated and coded for any CMOCs, concepts, or theories which could inform development of a PT e.g. Choudhry *et al.* (198) was coded for "context" as "letters written above 6th grade level", "mechanism" as "patient finds letter difficult to read" and "outcome" as "patient does not understand or action letter instructions". The coding was consolidated to form Figure 5.5, the initial PT, which is on the next page.

Figure 5.5 Initial Rough Programme theory



The initial PT shows two main channels for discharge communication; patient copied into (or not) the hospital to GP letter and patient received a personalised letter. Limited evidence was available for the option of “patient does not receive copy”. Patients being copied into discharge letters, whether by choice or otherwise, is associated with a large range of mechanisms and outcomes. Contexts such as “patient literacy level” are likely to influence generation of mechanisms (patient does/does not find letter comprehensible) and outcomes (increase/no increase in patient knowledge), but this was unclear from the evidence reviewed in the scoping search. The scoping search revealed a range of “contextual influences” (e.g. “time constraints of writer” may affect whether a patient is given a choice about receiving a letter and also the overall letter quality). It was unclear where some CMOCs began and ended (e.g. “is patient given choice about receiving copy of discharge communication” falls between contextual influences and context labels). In Figure 5.5, f/u stands for “follow up” and the small circled “c” icon refers to an outcome which could also thereafter take the form of a context. In summary, there were clear “gaps” and information missing from the initial PT, confirming that the scoping search in isolation was insufficient for realist theory generation; further evidence and searching was needed to clarify details and simplify CMOCs (steps 2-6).

5.6 Step 2: Searching

Searching was purposive and guided by the initial PT and an information-specialist. An initial search strategy was developed which was piloted and adapted for MEDLINE until a diverse and relevant range of search results were yielded (target 500-3,000). Table 5.6.1 on the next page shows the final search strategy for MEDLINE. The search strategy was not intended to be exhaustive, but to provide a large enough overview of evidence to be meaningful for PT development (363).

Table 5.6.1 MEDLINE and AMED search strategy

1. letter$
2. summaries$
3. Correspondence
4. patient copies$
5. patient letter
6. communication (MESH term if MEDLINE)
7. patient$ receiving
8. written information
9. discharge document$
10. patient-directed letter
11. personalised letter
12. personal letter
13. personalized letter
14. copy letter
15. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14
16. Hospital discharge (MESH if MEDLINE) AND 15
17. Patient discharge (MESH if MEDLINE) AND 15
18. 16 OR 17
19. 18 and patients (MESH HEADING if MEDLINE)
20. Patients adj3 receiving adj3 letter*
21. Patients adj3 receiving adj3 discharge adj letter*
22. patient adj3 cop$ of written adj information
23. written adj3 patient adj discharge adj communication
24. secondary to primary adj care adj3 communication
25. hospital adj3 GP adj3 communication
26. writing adj3 to adj3 patients
27. 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26
28. 27 OR 19
29. patient discharge letter
30. discharge communication
31. discharge letter
32. discharge summary
33. discharge summaries
34. 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 10 OR 11 OR 12 OR 13 OR 14
35. 34 OR 28
36. discharge correspondence
37. copy correspondence
38. doctor letter
39. copy letter
40. 36 OR 37 OR 38 OR 39
41. 40 OR 35

Thereafter, the remainder of databases were searched and results imported into *Endnote*. In line with a realist approach, searching was iterative; the search strategy was refined for each database or source as required. A full list of the adapted strategies could not be included in the thesis due to size constraints but was published as an additional file to the review which is freely available (73).

Table 5.6.2 lists the sources searched and number of results. Sources included electronic databases, healthcare sites, and grey literature.

Table 5.6.2 Sources searched

	Sources searched	**Results**
1	*MEDLINE*	1596
2	*EMBASE*	558
3	*CINAHL*	100
4	*DARE*	2
5	*ASSIA*	47
6	Web of Science	205
7	*ZETOC*	29
8	*AMED*	26
9	*NHS* Digital	0
10	*NHS* Evidence (public domain only)	244
11	Department of Health	2
12	*NICE* Guidelines	0
13	Cochrane database of systematic reviews	21
14	*EPPI-CENTRE*	20
15	*SCOPUS*	38
16	Google Scholar	6
17	*OpenGrey*	3
18	*Greynet* sources	0
19	ProQuest dissertations and theses	210
20	General Medical Council	0
21	Royal College of Physicians	5
22	Local Medical Committees (West Midlands)	0
23	Clinical Commissioning Groups (West Midlands)	0
24	*SIGN*	0
25	*NHS* Improvement	1
	TOTAL RESULTS	3113

Evidence was searched up until September 2017; publications were monitored thereafter but no new evidence affected the PT. In total, 3113 documents were selected for screening.

5.7 Step 3: Document selection

Inclusion or exclusion of source review evidence was according to the criteria on the next page.

Inclusion criteria:

- Full text or section of source had *relevance* (363, 384) to informing the PT
- Relate to inpatients/outpatients discharged from general hospital setting to GP (or equivalent)
- Relate to discharge where "written discharge communication" is sent to GP or referring physician (may also be copied to patient)
- Source written or published in English

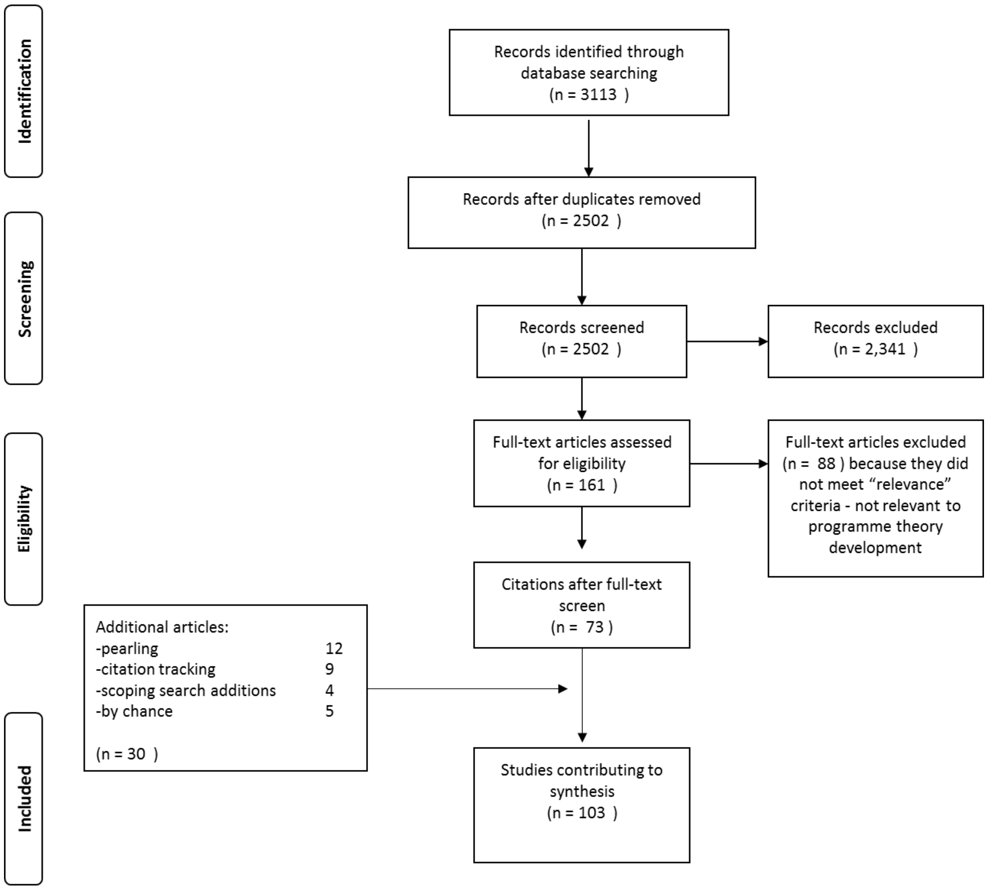
Exclusion criteria:

- Specific to discharge to units/physicians other than GPs (or equivalent), e.g. another hospital
- Specific to discharge of patients who lack cognitive capacity, e.g. dementia, or where there may be higher risk of harm, e.g. mental health discharge
- Lack of written communication having taken place, e.g. telephone only
- Specifically relate to patients <18 years
- Source not written or published in English

The criteria were developed to include evidence that encompassed a variety of patients and be relevant across different healthcare settings. The exclusion criteria posed limitations on the review; children under 18 (where the parent would often be the letter recipient), patients with particularly specialised communicative needs (e.g. patients without capacity) or where the intervention may have a higher potential risk of causing harm (e.g. psychiatric discharge documents) were excluded. The communication needs of some of these patients may be more complex and variable within and between groups and therefore was not possible within review scope. The first exclusion criterion states patient discharge communication to those other than GPs or equivalent (e.g. family or community physicians) was excluded. This is because the review specifically focussed on discharge communication to GPs and patients rather than referrals or care-handovers. Furthermore, the review aimed to develop a theory for patients receiving discharge communication and inclusion of hospital-hospital discharge may have reduced clarity and produced a less focussed theory.

Once the documents had been screened by title and abstract, second reviewer (medical student, EM) screened a random 10% test selection; this proportion was selected following Wong *et al.* (378). Inter-reviewer agreement was set at kappa measure K≥.8 (403). A result K<.8 would require all documents to be second screened. Inter-reviewer agreement was calculated as sufficient (K=0.82). In the first screening phase, 611 duplicates were removed and 2,341 documents excluded. The full texts of the remaining 161 documents were then screened, primarily for relevance (363, 384) by KW, with EM screening a random 10% sample. Inter-reviewer agreement was again sufficient (K=0.92). Eighty-eight documents were excluded at this stage leaving 73 for inclusion. In addition, hand-searching of bibliographies, "cited by" searching, and contacting experts was undertaken. This identified a further 30 relevant documents, creating a total of 103 documents (58, 60-63, 67, 86, 96, 149, 182, 186, 191, 198, 205, 207, 251, 392-394, 486-569). The document selection process is summarised in an adapted PRISMA (570) diagram below (Figure 5.7.1).

Figure 5.7.1 PRISMA diagram



5.8 Step 4: Data extraction

A "hybrid" (378, 571) approach to data extraction was undertaken. This allowed extraction of document characteristics together with annotation and labelling of context mechanism and outcome (CMO) ideas for synthesis and integration into the PT (363, 384). The *Excel* data extraction form was designed iteratively to record pertinent details. Final columns included: author(s), year, locality, healthcare system, design aim, number of participants, intervention, clinical speciality, inclusion/exclusion criteria, conclusions, rigour/quality and relevance assessment (363, 384), topic focus, form of discharge communication e.g. discharge summary, and participant mix. Following data extraction form completion, documents were annotated in NVivo for CMO and PT ideas. Annotations were guided by the initial PT.

5.9 Step 5: Data synthesis

During step 5, data and annotations of PT ideas and CMOs were consolidated. A realist analytic approach, following the work of Pawson (363, 379, 382, 384), was used to interrogate the theory during data synthesis. Pawson (363, 379, 382, 384) presents several different frameworks for synthesising data evidence. The framework (363) entitled *"synthesis to consider the same theory in comparative settings"* was selected which involves five analytical strategy steps. This framework was chosen as it assumes theories sometimes "work" and "do not work" according to the particular setting; Pawson *et al.*(363) describe this as *"aim[ing] to make sense of the patterns of winners and losers"* (p.25). Hence, this framework is suitable for the RQs which focus on cause and context of positive effects "winners" and negative effects "losers". Thus, data synthesis was grounded on the assumption that the intervention *effects* or *outcomes* of the intervention may differ according to *context*. The following five realist analytical strategy steps were undertaken simultaneously (363, 378, 384):

1. Juxtaposition of data sources – align sources and use evidence of each to build upon and clarify each other
2. Reconciliation of data discrepancies – examine and explore reasons for apparent disparities between data
3. Adjudication of data - quality consideration
4. Consolidation of data - inference of mechanisms for outcomes
5. Situation of evidence - consideration of details of settings in order to complete "context" element of CMOCs and explain differing outcomes of intervention

During, "reconciliation of data discrepancies" (363, 378, 384) and "adjudication of data" (363, 378, 384), the data coded within NVivo was used for scanning and comparing data to identify disparities. Adjudicating and situating evidence was important to reconcile discrepancies (363, 378, 384). The data coded within each node were interpreted, and judgements were formed as to which sections of text might be functioning as contexts, mechanisms or outcomes. Assessments were then made about what the context mechanism outcome configuration (CMOC) might plausibly be for each CMO based on the data within each node. An example of a data discrepancy was related to patient *understanding*. Main (196) suggests patient understanding is low and that patients sometimes require letter translation. However, Brodie & Lewis (489) record high levels of patient understanding (96%). Data examination reveals Main (196) refers to perceived patient understanding from the clinician perspective, whereas Brodie & Lewis (489) is a research paper documenting patient views of their own letter understanding. Thus, both excerpts may be relevant, but the latter may be considered a more reliable and trustworthy source of understanding assessment; this highlights the importance of adjudicating and situating evidence to reconcile discrepancies.

In total, 19 nodes, which are seen in Table 5.9.1, were coded. After table completion, following Pawson's framework (363), it was important to make sense of the "winners" and "losers". CMOCs were primarily labelled according to how evidence was reported in the included documents, such as whether the outcomes were described as desirable or beneficial. Where evidence was limited or outcomes were not clearly described or evaluated, what data were available were interpreted and judgements were formed about these CMOCs based on content expertise in order to generate "positive" and "negative" labels. CMOCs were not limited to one per document or one per patient experience. Thus, multiple outcomes and CMOCs could be annotated for a single experience; this exemplifies the complexity of the intervention under scrutiny.

Table 5.9.1, which displays the 19 nodes used for coding CMOs, is on the next page.

Table 5.9.1 Coding nodes

Node name	No. of sources coded	Total no. of source references
Autonomy	5	5
Clinician context (views)	23	57
Confidentiality	12	15
Context (when it does not work)	29	46
Context (when it does work)	54	107
Cost/resources	20	33
Dictate in front of patient	3	5
Doctor patient relationship	5	7
GP preference	4	8
NHS policy or contextual standards (international)	30	51
Outcomes (positive)	58	128
Outcomes (negative)	22	28
Patient as delivery method	2	2
Patient harm	24	33
Patient letters	18	34
Patient preference	37	94
Patient recall	11	12
Queries and contact	10	12
Understanding	46	88

The final CMOC table is seen over the following pages (table 5.9.2). Notably, there were a greater number of CMOCs relating to positive outcomes (N=31) than when the intervention does not work (N=12) and neutral or unclear outcomes (N=5). Some contexts in the table are repeated e.g. “patients receive letters where appropriate”; these repeats are due to instances where data provided different *outcome* evidence associated with varying *mechanisms* triggered from what appeared to be identical contexts. The repeat cases exemplify the non-linear (363, 377) causal relationships commonly associated with complex interventions. Additionally, not all mechanisms could be inferred from the data resulting in some visible mechanism “gaps” within the table. Nonetheless, the primary data evidence in chapters 6-8 will aid understanding of these processes, effects and “mechanisms”; this demonstrates the usefulness of drawing upon both primary and secondary evidence.

Table 5.9.2 CMOCs

CMOC number and supporting references	Context	Mechanism	Outcome	Effect assessment	Does it "work"?
CMOC1 (62, 506, 516, 572)	Patients not offered letters	Patients feels less involved in care	Reduced autonomy of patients	negative	does not work
CMOC2 (63, 192, 393, 503, 510, 516, 517, 551, 572)	Patients offered the opportunity to receive letter(s)/choices respected	Patients feel more informed and involved in care	Increased autonomy and involvement of patients in treatment, care and communications	positive	does work
CMOC3 (67, 495, 506, 508)	Large clear posters displaying patients right to choose and importance of correct contact information	Patients realise they should inform hospital of address changes and preferences	Lowered risk of confidentiality breaches	positive	does work
CMOC4 (62, 506, 516, 572)	*NHS* drive for patient-led care (influence or context)	Clinicians increasingly offer patients choice of receiving letter/sharing information with patients	Increased empowerment of patients	positive	does work
CMOC5 (96, 182, 192, 394, 488, 489, 493, 500, 516, 518, 521, 531, 542, 551, 572, 573)	Clinician views letters to patients are beneficial e.g. increases transparency, compliance, trust, satisfaction, understanding and recall	Clinicians feel patient should be offered letters	Potential increase in autonomy & satisfaction of patients	positive	does work
CMOC6 (182, 186, 197, 205, 394, 489, 493, 497, 500, 504, 508-510, 517, 521, 531, 534, 546, 551, 553-555, 566, 572, 574, 575)	Clinician views letters to patients as not beneficial e.g. letter not comprehensible to patient, medico-legal issues, increased cost and staff workload, patient harm (anxiety, distress, and confusion) and issues around confidentiality	Clinician feels patients should not be offered letters	No autonomy of patients	N/A	unclear

CMOC number and supporting references	**Context**	**Mechanism**	**Outcome**	**Effect assessment**	**Does it "work"?**
CMOC7 (67, 155, 182, 393, 489, 497, 500, 517, 520, 566)	*NHS* guidance that all hospital-GP correspondence should be copied to patients as a "right" where appropriate and if patients agree (unless risk of serious harm or legal issues)	Clinicians increasingly offering patients a choice of receiving letters	Increased use of *NHS* resources to send letters but patients benefit through increased understanding & potential reduction in queries (costs balanced)	positive	does work
CMOC8 (516, 572)	Data Protection Act 1998 (UK)	Patients may become aware of their right to know what is written & stored about them	Patients informed of their stored electronic information (increased transparency)	positive	does work
CMOC9 (493, 551, 554)	Doctor copies letters to patients	Patients trust doctors more	Improved doctor-patient relationships	positive	does work
CMOC10 (500, 519, 520, 551, 566, 574)	Patients offered choice of receiving letters	Patients choose to receive letters	Increased administrative staff workload and costs of printing & posting letters	negative	unclear
CMOC11 (489, 573)	Patients offered choice of receiving letters	Patients choose to receive letters	Reduced queries and GP visits and reduced hospital re-admissions (limited evidence)	positive	does work
CMOC12 (58, 60, 61, 67, 198, 492, 510, 513, 514, 518, 523, 526, 540, 541, 543, 556, 557, 562, 563)	Structured discharge letters written clearly in plain English (pref. 5th grade level) with medical jargon defined, no value judgements of patients and minimal abbreviations	Patients understand letters	Increased patient's knowledge	positive	does work
CMOC13 (193, 533)	Doctors provided training in letter writing & record keeping (contextual influence) leading to doctors write letters of higher quality and more appropriate for patients	Patients understand letters	Increased knowledge for patients/potential increase in doctor confidence in letter writing	positive	does work

CMOC number and supporting references	**Context**	**Mechanism**	**Outcome**	**Effect assessment**	**Does it "work"?**
CMOC14 (58, 192, 393, 488, 492, 516, 521, 534, 572)	Patient's preference for letter copies acknowledged and patients offered choice of receiving letters	Patients feel able to express their preferences	Decreased strain on resources & increased patients' autonomy & satisfaction	positive	does work
CMOC15 (149, 394, 488, 489, 493, 517, 518, 521, 522, 525, 530, 542, 548, 564)	Patients provided written & verbal information	Patients reflect on written record of information for reference	Increased patient's knowledge of care plan, recall and acceptance of illness or condition	positive	does work
CMOC16 (96, 182, 192, 497, 500, 531, 551, 573)	Human Rights Act (1998) and Race Revelations Act (2000) - clinicians equally offer all patients letter copies regardless of background	Clinician feels all patients should be offered letters	Increased equality and accessibility of information to patients	positive	does work
CMOC17 (197, 251, 524, 536)	Use of pictures/pictographs/cartoons with written information	Patients understand letters	Patients benefit from improved understanding e.g. adherence to agreed care plan	positive	does work
CMOC18 (149, 488, 517, 518, 525, 530, 548, 564)	Verbal information only	Patients may not be able to retain information	Reduced patient's recall	negative	does not work
CMOC19 (531, 554, 566)	Professionals who are not involved/limited involvement with patients writes letters	Professional does not understand patient's plan	Letter's quality reduced/increased risk of harm	negative	does not work
CMOC20 (63)	Patient's hospital visit of sensitive nature and/or patient's lack capacity e.g. psychotic episode, dementia	Patients find letters distressing and/or confusing	Harm to patients	negative	does not work
CMOC21 (500)	Patient's letters written above patient's educational level or in a language the patients do not read	Patients find letters difficult to understand	Patients are confused with no increased knowledge of care/possible misinterpretation of care instructions	negative	does not work

CMOC number and supporting references	Context	Mechanism	Outcome	Effect assessment	Does it "work"?
CMOC22 (567)	Letters contain inaccurate information	Patients identify inaccuracies	Patients notify hospital/GP of inaccuracies and corrections are made leading to improved record keeping	positive	does work
CMOC23 (197, 497, 500, 508, 551, 566)	Patients receive discharge letters	Patients do not understand entirety of letters	Patients source answers (internet, GP, friend or relative)	positive	does work
CMOC24 (207, 486, 489, 531, 539, 544, 552, 566, 568)	Patient specific letter sent to patients	Patients find letters clear	Improved patient's comprehension/patients may use letters as aid to explain condition to family and friends	positive	does work
CMOC25 (197, 488, 489, 551, 567, 574)	Patient specific letter sent to patients		Increased staff workload and costs	negative	does not work
CMOC26 (497)	Patient specific letter sent to patients	Patients identify that the information sent to GP and patient is different	Medico-legal concerns could be raised over letter discrepancies and any withheld information	negative	does not work
CMOC27 (67, 531)	Hospital sends patients discharge letters without verifying patient's contact details without notifying patients	Hospital workers do not identify and correct incorrect information	Potential breach of patient's confidentiality	negative	does not work
CMOC28 (67)	Hospital routinely checks patient's addresses and sends discharge letters to patients marked confidential using full name	Hospital workers identify and correct incorrect information	Patients receive letters, minimal risk of patient confidentiality breaches	positive	does work
CMOC29 (67, 191, 495, 500, 551)	Patients receive discharge letters	Patients may have questions relating to letters	Patients contact health providers with queries (evidence suggests minimal impact and queries)	positive	unclear

CMOC number and supporting references	Context	Mechanism	Outcome	Effect assessment	Does it "work"?
CMOC30 (567)	Discharge letters/summaries dictated in front of patients	Patients query any inaccuracies	Letters less likely to contain inaccuracies	positive	does work
CMOC31 (576)	Hospital gives patients discharge letters/summaries to deliver to GP	Patients may find they are unable to make deliveries	GP does not always receive letters/summaries	negative	does not work
CMOC32 (197, 497, 500, 508, 551, 566)	Patients receive letters not written at appropriate levels for them	Patients feel confused and do not understand letters	GP spends time reassuring patients and explaining letters to ease patient's upset	negative	does not work
CMOC33 (555)	Patients have anxiety that doctors talk about things behind their backs	Patients who receive letters feel reassured that there is no hidden information	Decreased patient's anxiety and improved doctor-patient relationships through transparency	positive	does work
CMOC34 (182, 500, 566)	Patients receive discharge letters	Patients feel they are important to clinicians	Patients are impressed with letters and feel clinicians have an interest in them	positive	does work
CMOC35 (182, 497, 500, 504, 510, 517, 521, 531, 551, 555, 574, 575)	Choice about whether letter is sent to patients	Clinician feels letters would be a disaster and inappropriate for patients	Patients do not receive letter(s)	N/A	unclear
CMOC36 (489)	Patients receive discharge letters		No impact on patients	N/A	unclear
CMOC37 (67, 489, 500, 531, 532)	Patients receive discharge letters with bad news	Patients find letters initially distressing	Letters causes initial distress but final outcome that patients find letters helpful and aids recall and acceptance of condition	positive	does work
CMOC38 (63, 67, 493)	Letters sent to patients containing information not discussed with patients or abnormal results	Patients feel distressed and anxious reading letters	Patient harm/unethical practice	negative	does not work
CMOC39 (67, 182, 497, 500, 549, 554, 566, 574)	Patients worried about diagnosis and patients receive letters	Patient's understanding helped by letters	Patients feel less anxious due to being more informed	positive	does work

CMOC number and supporting references	Context	Mechanism	Outcome	Effect assessment	Does it "work"?
CMOC40 (394)	Patients' preferences for letter copies not acknowledged		Patients may receive letters who did not want them leading to decreased patient's satisfaction	negative	does not work
CMOC41 (58, 188, 393, 488, 489, 492, 493, 495, 506, 521, 527, 534, 554, 573)	(best practice) Patients offered choice of receiving letters/opt-in system	Patients enabled to decide on preferences for receiving letters	Patients may or may not receive letters depending on their preferences resulting in higher patient satisfaction	positive	does work
CMOC42 (67, 155, 393, 489, 500, 517, 520)	Patients who feel copies of letters are not necessary for themselves		Patients not given letters so patients satisfied, secondary outcomes: costs and time saved	positive	does work
CMOC43 (489, 573)	Patients receive discharge letters where appropriate	Patients understand letters (high evidence)	Patients find letters informative and helpful	positive	does work
CMOC44 (63, 192, 393, 503, 510, 517, 551)	Patients receive discharge letters where appropriate	Patients feel involved in care plans	Patients ensure follow up plans are followed and books any necessary tests etc.	positive	does work
CMOC45 (488, 493)	Patients receive discharge letters where appropriate	Patients feel letters are important	Letters forms permanent records of hospital visits and kept for future reference	positive	does work
CMOC46 (488, 493)	Patients receive discharge letters for breaking good news	Patients reminded of discussion	Patients feel reassured and have "peace of mind"	positive	does work
CMOC47 (58, 393, 488, 492, 521, 534)	Patients receive discharge letters where appropriate (patient choice)	Patients likes receiving letters	Patient's satisfaction increased	positive	does work
CMOC48 (182, 500, 566)	Patients receive copies of discharge letters where appropriate	Patients become aware of what GP knows	Patients feel reassured that GP informed	positive	does work

5.10 Step 6: Refine programme theory

The final review step was to test and refine the programme theory in light of the synthesised data (363) and stakeholder perspectives. The consideration of stakeholder perspectives is described by Brennan *et al.* (377) as a "reality check" for "checking" whether the programme theory aligns with real-life experiences and practices. The discussion for step six can be found in section 5.15 "*Resultant programme theory"*.

5.11 Document characteristics

The 103 evidence sources were from 16 countries across various continents with most emanating from England (54%), the USA (17%), and Australia (7%). Healthcare settings were split between insurance style systems (23%) and publicly funded systems (77%), such as the *NHS*. The date range of the sources was from 1979-2017 and the total number of participants detailed across the research studies was 16,383; this included staff and patient participants but there was not enough detail across all of the studies to quantify the participant type proportions. Most had been published in the 10 years prior to the search: 1970-1979 (1%), 1980-1989 (2%), 1990-1999 (7%), 2000-2009 (40%), and 2010-2017 (50%). The source type was mixed: discussion and opinion pieces (20%), survey-based study (19%), guideline documents (12%), abstracts (7%), review (5%), interview-based study (5%), experimental study (5%), pilot study (5%), randomised controlled trial or randomised intervention study (5%), non-randomised intervention study (3%), report document (3%), cohort study (2%), mixed methods (not covered above) (1%) and other e.g. PhD thesis (8%).

The evidence covered a wide range of specialties. Most specified inclusion of adult patients only (over 18 years) but often did not detail the exact patient ages in the write up; a few studies focussed on elderly patients. Information relating to patient demographics e.g. gender, was often not found in the sources and hence these were not summarised. Many sources instead focused on the speciality under consideration in the document and clinical presentations of interest to that speciality e.g. ECGs (577). Participants who were staff included medical students, hospital doctors of all training grades, nurses, GPs, non-specified hospital staff, and non-clinical staff. However, the majority of documents (66%) either did not provide staff participant details or they were irrelevant e.g. guideline document, no participants. The type of discharge communication varied: direct copies (47%), discharge instructions (12%), pictures (1%), personal discharge packs (1%), personalised letters (12%), information booklets (9%), multiple types of discharge communication (7%), and other (11%). Where the sources came from showed some variation such as Department of Health archive (3%) but the greatest number of sources was from journals (68%).

5.12 Quality and document rigour

The findings of this review in the following sections should be considered in light of the quality and rigour appraisal results of included documents to avoid over-interpretation of the findings. During data extraction in step four, documents were quality appraised for *rigour* and assessed for *relevance* as defined by Pawson (363, 379, 384). The concept of *rigour* is defined by Brennan *et al.* (377) as *"whether the methods used to generate the relevant data are credible and trustworthy"* (p.4). Appraisal was conducted according to *RAMESES* guidelines (578, 579). *Relevance* and *rigour* were scored on a scale from very low to very high and factors such as document type (e.g. opinion piece or scientific trial paper) were considered. It is acknowledged that the appraisal process was scalar and subjective. Following Pawson *et al.* (363) documents were not excluded solely based on rigour as sections or extracts of documents with a lower quality score may still have valid contributions to make toward the PT.

The quality of evidence was variable, with 53% graded as medium or above in relation to relevance and 80% for rigour. Information relating to setting and context was often limited.

5.13 Context-mechanism-outcome configurations and programme theory

The following section forms a narrative overview of theories of how patients receiving discharge letters does or does not work, as informed by the reviewed evidence. The sub-headed themes emerged during data interrogation and consolidation although many acted as “nodes” in earlier annotation and coding (see table 5.9.1). Sections contain references to CMOCs, quotations from data texts, and references. Quotations have been chosen which illustrate the described theories and highlight key elements of CMOCs.

Evidence relating to some aspects of the PT was limited, particularly in relation to negative outcomes, intervention costs, current clinician views, impact on doctor-patient relationships, personalised patient letters, and patients not receiving any intervention. Evidence was also thin in relation to data disparities. Although, context and outcome information were generally well supported, mechanisms were frequently omitted. Where possible, based on the evidence, reasons were inferred for disparities and what the likely mechanism(s) were within any CMOC.

Patient preference/choice

Allowing patients to make their own choice for receiving letters may: reduce unnecessary resource strain (566)[CMOC14], only take minimal time (192), make patients feel more involved in their care (63, 192, 393, 503, 510, 517, 551) [CMOC2], increase satisfaction (58, 393, 488, 492, 521, 531, 554, 572) [CMOC14, CMOC41, CMOC47] and aid information acceptance (493):

> “*I wanted to know as much as possible about what was going on with my body*” (493)(p.73)
>
> “*Sometimes for whatever reason you don’t fully take on board what the doctor has told you. I found the letter useful to read over and digest properly what was written*" (63)(p.3)

Many patients report that receiving letters is useful (63, 188, 489, 492, 500, 503, 517, 554, 566). Patients may show friends/family to help them better understand their condition/treatment (149, 393, 493, 517, 531, 554, 555, 575). Patients may use letters as a reference/reminder for the consultation (393, 488, 492, 493, 517, 554)[CMOC45]:

> *"My mind went blank after seeing the doctor and the letter reminded me of what had been said" (517)*(p.83)

Across a range of specialties and settings, the reported patient preference for receiving copies of their discharge letter was generally high (79%-97%) (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574). However, not all patients may find letters helpful (531, 566) or necessary (188, 393, 492, 495, 531, 551, 566), and some may not want to be reminded of their diagnosis (393), which could decrease satisfaction, and generate queries if these patients were sent letters without a choice [CMOC40]. Hence, several studies argue in favour of respecting patient choice and suggest the patient's right to "opt out" needs to be addressed (188, 486, 492, 493, 495, 506, 527, 554) [CMOC41]. In situations where the patient is not offered a choice, such as third party information or risk of harm (63), the clinician should be able to justify this decision (67). In relation to sensitive information or social habits, patients generally do not object to this being included in the letter as long as it has "some relevance" (67).

Comprehension, queries, and recall

There was considerable evidence, particularly from patient viewpoints, to support the view that the majority of patients may understand their letters (67, 188, 191, 393, 394, 489, 493, 500, 510, 517, 546, 551, 555, 566) and hence find the letter beneficial and helpful (182, 500, 566) [CMOC7, CMOC39, CMOC44]. Moreover, a letter copy which is understood can reassure patients they are being listened to (500, 531, 573) [CMOC34, CMOC48]. Patient understanding of discharge instructions may increase their knowledge (531) and this might reduce unnecessary or avoidable hospital readmissions (251, 524, 536, 550, 565) and lower patient anxiety (558) thereby supporting patient wellbeing (67, 554, 574) [CMOC39]:

> *"I found the letter very comforting and reassuring"* (533)(p.58)

Although there may be a risk that patients receiving letters is associated with an increase in queries to seek clarification about what has been communicated (486), several sources indicated that this occurs to a minimal extent (67, 191, 500, 520, 551) [CMOC29]. Examples of patients not understanding letters were sometimes described as a "small proportion" (566) or low percentage "7%" (393).

If patients are provided verbal information only, they may fail to retain the information (488, 517) [CMOC18] which can decrease recall and adherence [CMOC21]:

> *"By the time I have got home, I have forgotten half of what was said in clinic."* (500)(p.255)

Due to this, combining written and verbal information (487) may improve patient understanding (517, 518, 525, 548, 564) [CMOC15, CMOC18], increase patient's involvement in their care (517, 554) and compliance (63, 186, 489, 547, 562, 573) [CMOC11, CMOC43], and improve recall (394, 488, 489, 493, 518, 521, 522, 542, 551) [CMOC5, CMOC15].

Contexts which may increase likelihood of triggering patient understanding include: letter language translation (58, 86, 530), writing the letter at a 5th or 6th grade reading age level (58, 198, 518, 526) [CMOC12], use of glossary (490, 554), pictures, pictographs or equivalent (490, 511, 518, 545) (particularly for low literacy or illiterate patients) [CMOC17], lay explanations for "technical terms" (67, 554) and writing in plain English with minimal jargon/abbreviations (60, 63, 67, 193, 492, 510, 518, 523, 526) [CMOC12].

Two sources with the same lead author suggested training medical students on writing patient letters can help produce letters that are more meaningful to patients (532, 533) [CMOC13]. However, the evidence around training in relation to the intervention was limited.

Personalised or patient-directed discharge letters

Producing a letter which is comprehensible and useful to both GPs and patients has been recognised to be an issue (186, 197, 198, 575). Patient-directed or personalised patient letters have been proposed [CMOC24, CMOC36]. Patients often rate these letters positively (207, 531, 539) and this may heighten satisfaction (531), and improve understanding (207, 497):

> *"Simplifying written communication has also been shown to improve patient comprehension."* (207)(p.855)

However, personalised letters have the potential to lead to resource consumption (489) [CMOC25], staff time depletion (489, 497, 566) and patient anxiety that they have been given different information to their GP (497) [CMOC26].

Patient to deliver letter

The context of patients delivering letters seems to have few reported positive outcomes. Posting and electronic transferral of letters may be preferable as:

> *"It is not considered good practice to send the discharge summary home with the patient as there is no guarantee that the information will be passed on to the general practitioner"* (576)(p.7)[CMOC31].

Dictating letters in front of patients

Evidence for this concept was somewhat thin. One study suggested that dictating letters in front of patients can make patients feel less in need of a copy of the letter (191). Another paper suggested this practice may also provide a context that triggers patients to challenge inaccuracies, improving letter quality (567) [CMOC22] [CMOC30]:

> "*The content of letters to GPs is sometimes incorrect and this may be remedied by dictating the letter in front of the patient."* (p.4) (567)

Confidentiality

There are concerns and legal implications surrounding potential confidentiality breaches associated with patients receiving letters, particularly when they are sent out in the post (197, 488, 506, 508, 510, 535, 574). One recent paper (508) (2013), which looked at confidentiality, continued to stress risks around postal communication and the importance of secure information transfer:

> "*There is a substantial risk of breaching patient confidentiality when distributing correspondence by post. A well-designed security arrangement is therefore required to ensure the safety of confidential information."* (508)(p.35)

Some documents (63, 67, 506, 508, 510) suggested ways to reduce potential risk of confidentiality breach through communication platforms and the processes involved in sending letters e.g. verifying patient contact details before sending letter (510, 573) [CMOC3, CMOC27, CMOC28].

Patient harm

Patient anxiety or "harm" in general are often cited as reasons for clinicians not wanting to copy letters, particularly in "bad news" settings (186, 394, 489, 493, 517, 540, 546, 554, 575) [CMOC6]. Letter inaccuracies can cause concern leaving patients feeling confused or anxious (566) [CMOC19]. Nevertheless, the letter can reassure the patients their problems are being handled (574)[CMOC46] and initial anxiety can settle or be nullified by the usefulness of the letter (67, 188, 489, 500, 531, 532, 535, 572) [CMOC37]. Moreover, one study (492) published in the *Lancet* in 1991 suggested patient letters in "bad news" settings may be more useful than "good news":

> "*Patients who had received bad news found the letter significantly more useful in helping them to understand and remember what they had been told during the consultation than did patients receiving good news… almost half the patients receiving bad news found their letter distressing to some extent; however, with 1 exception, all patients were pleased to have received it."* (492) (Pp.924-925)

Although the above paper was published in 1991, no recent evidence or system changes were found to dispute the notion that "bad news" letters may be of particular use to the patient. Hence, despite risk of initial "harm", "bad news" letters should perhaps not be avoided.

Practical and feasible suggestions were found in some documents for minimising harm or anxiety: not copying letters with information not previously disclosed to the patient (62, 63, 67, 493) [CMOC38], abstain from use of value judgements e.g. pleasant lady (517) [CMOC12], potentially avoid or carefully consider copying letters where there are "problems of privacy at home" and/or where the patient lacks capacity (63) [CMOC20], and checking the patient consents to a letter (67) [CMOC41].

Clinician views

GP and hospital clinician views were described both as broadly in favour (96, 192, 497, 551, 552, 573, 575) [CMOC5, CMOC16] and not in favour of patients receiving written discharge communication across a range of specialities (196, 497, 502, 510, 517, 521, 551, 552, 554, 555, 574, 575) [CMOC6, CMOC35]. The response section (192, 196, 197) to a BMJ article (580) (2008) on patient letters demonstrates the clinician view dichotomy as practitioners argue for and against patients receiving letters:

> "*My colleagues and I have had to explain to alarmed and bewildered patients who have received copies of their correspondence the meaning of phrases…"* (197)(p.1369)

> "*Generally, doctors who are sceptical about copying letters to patients seem not to have tried it, whereas those who send copies routinely are enthusiastic."* (192)(p.1370)

Practitioner perceived benefits found in the sources [CMOC5] included: improved patient understanding (497, 575), increased transparency (555) [CMOC33], improved trust/doctor-patient relationship (192, 497, 575), dispelling fears of "secretive relationships" between clinicians (575) and heightened sense of patient importance (575). In addition, the patients' right to view the information was noted (497) [CMOC7, CMOC16]. A ubiquitous practitioner concern of the intervention across specialties was letter comprehensibility and patient understanding (196, 197, 205, 497, 509, 510, 517, 551, 554, 555, 574, 575) [CMOC6]. Other concerns included: cost of additional materials/staff time (186, 197, 497, 508, 551, 566, 574) [CMOC23, CMOC32], patient anxiety (186, 497, 502, 510, 517, 554, 574, 575) [CMOC6, CMOC19], increased patient queries (186, 551) [CMOC29], potential confidentiality breaches (575) [CMOC6, CMOC27], and that letters would need to be oversimplified (186, 497, 504, 509, 554, 575). An attitudinal issue found in two oncology documents (497, 555) published 17 years' apart was the view that letters are tools to be used between doctors only [CMOC6]. Additionally, juniors can learn from and mimic superiors and also not send letters to patients (502).

Confusion around "letter comprehensibility" and lack of "patient understanding" were the commonest clinician reservations relating to the intervention (196, 197, 205, 497, 509, 510, 517, 551, 554, 555, 574, 575). However, as covered in the *comprehension* section, patients are often reported as *understanding* their letters (67, 188, 191, 393, 394, 489, 493, 500, 510, 517, 546, 551, 555, 566) and furthermore they tend to express strong preference for receiving such letters (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574). Thus, it may be inferred from the evidence that patient understanding of letters is possibly higher than clinicians perceive (489, 546, 551). The following from a recent (2016) abstract (555) concisely summarises an example of patient and clinician view disparity:

> "*While some oncologists assess the copy letters as inappropriate for supplemental patient-oncologist-communication, breast cancer patients regard this tool as predominantly gainful. Oncologists appear to stick to their traditional perspective which perceives the copy letter mainly as a communication tool from doctor to doctor*." (555) (p.185)

Notably, much of the evidence reporting clinician views was published from 2002-2008 and current evidence on clinician perspectives remains limited. Moreover, although sources occasionally referred to conflicting clinician views, information on *why* attitudes differed was thin. Overall, better understanding of current clinician views on copying discharge letters to patients is required.

Cost and resources

The estimated costs associated with the intervention varied (554) but this must be considered in the context that included documents spanned a wide time range and thus factors such as inflation need to be considered. In addition, robust health economic analyses were not found in the included sources. Documents (67, 186, 197, 393, 486, 488, 500, 506, 517, 519, 520, 527, 551, 554, 566, 567, 574) referred to "cost" or financial implications [CMOC25] of sending letters in different ways such as use of consumables (186, 486, 519, 520, 527, 551, 566, 574)[CMOC10], and secretarial (67, 186, 486, 500, 517, 519, 551, 554, 566, 574) [CMOC10] and clinician time required (186, 566). A few sources (63, 67, 155, 186, 393, 489, 517), including guideline documents and research papers, suggested that benefits were such that associated costs were minimal, or even reduced by patients being more informed from receiving discharge communication [CMOC7, CMOC25, CMOC42]. However, as many of these views were based on personal comment or studies with weak methodologies, the true cost consequences remain unknown.

Autonomy

One source suggested that when patients are not given letters, they may feel less involved in their care, resulting in reduced patient autonomy (572) [CMOC1][CMOC6]:

> *"To refuse to provide such information if this is the patient's wish is to deny their autonomy."* (572) (p.388)

Conversely, some evidence (516, 554, 572) was found that providing patients with written discharge letters is their "right" (62, 506), may create a sense of involvement, and increase patient autonomy and satisfaction (516, 572) [CMOC2] [CMOC4] [CMOC5] [CMOC8] [CMOC14].

Doctor-patient relationships

Few documents (63, 192, 493, 497, 554, 562, 575) were found which considered the intervention in terms of the doctor-patient relationship. However, much of the limited evidence that was found indicated that patients receiving letters has the potential to improve communication, trust and the doctor-patient relationship [CMOC9] (63, 493, 554, 562, 575).

5.14 Cycling of review steps

As a realist review is an iterative process, steps may be repeated. As described in step two, new publications were followed and analysed for evidence but provided no new or conflicting PT knowledge. Thus, it was deemed that "theoretical saturation" (379, 384) in accordance with Pawson's realist review methodology (363, 379, 380, 384) was attained and no further searching or step cycling was required.

5.15 Refined resultant programme theory

Programme theory (PT) refinement through stakeholder perspectives

As detailed in step 6 (5.10), the final review step was to refine the programme theory through stakeholder perspectives. Three groups were consulted: local commissioners, GPs and service-users/patients. Stakeholder involvement took the form of group discussions and email correspondence. As the PT was continually being developed throughout the review process, stakeholders commented on the most recently developed PT at the time of their involvement. Groups were relatively small; due to feasibility it was not possible to achieve diverse and representative group samples.

Group discussions were centred on the programme theory; members were encouraged to critique and feedback on the PT diagram. This included concepts not covered or explored in detail in the PT diagram such as: the importance of comprehensible language and terminology, difficulty and problems retaining verbal information only e.g. following use of anaesthesia, patient choice of receiving letters, illegibility of handwritten discharge communication, critical context of prior patient communication of a high quality to increase likelihood of understanding discharge letters, issues around personalised patient letters considering *NHS* resource availability, and concerns around writing a letter which meets the needs of both GP and patient. The commissioner and GP representatives emphasised the importance of patient safety and that this should be central to best practice recommendations. In addition, the patient group reported reading a letter about themselves written in third person was peculiar. The service user group felt patient letters were very important for patients taking responsibility for their health in line with the *NHS* promotion of patient-centred and patient-led care.

Several different members across the various groups commented that in practice, patients do not always receive their letters, despite this process being recognised as best practice. Recommendations were suggested to rectify this by the commissioner members to include: clinicians should assume when writing letters that they could be made available to the patient, early clinician and student training in good letter writing and record keeping, and that hospitals should support the initiative e.g. quality improvement activities and audits.

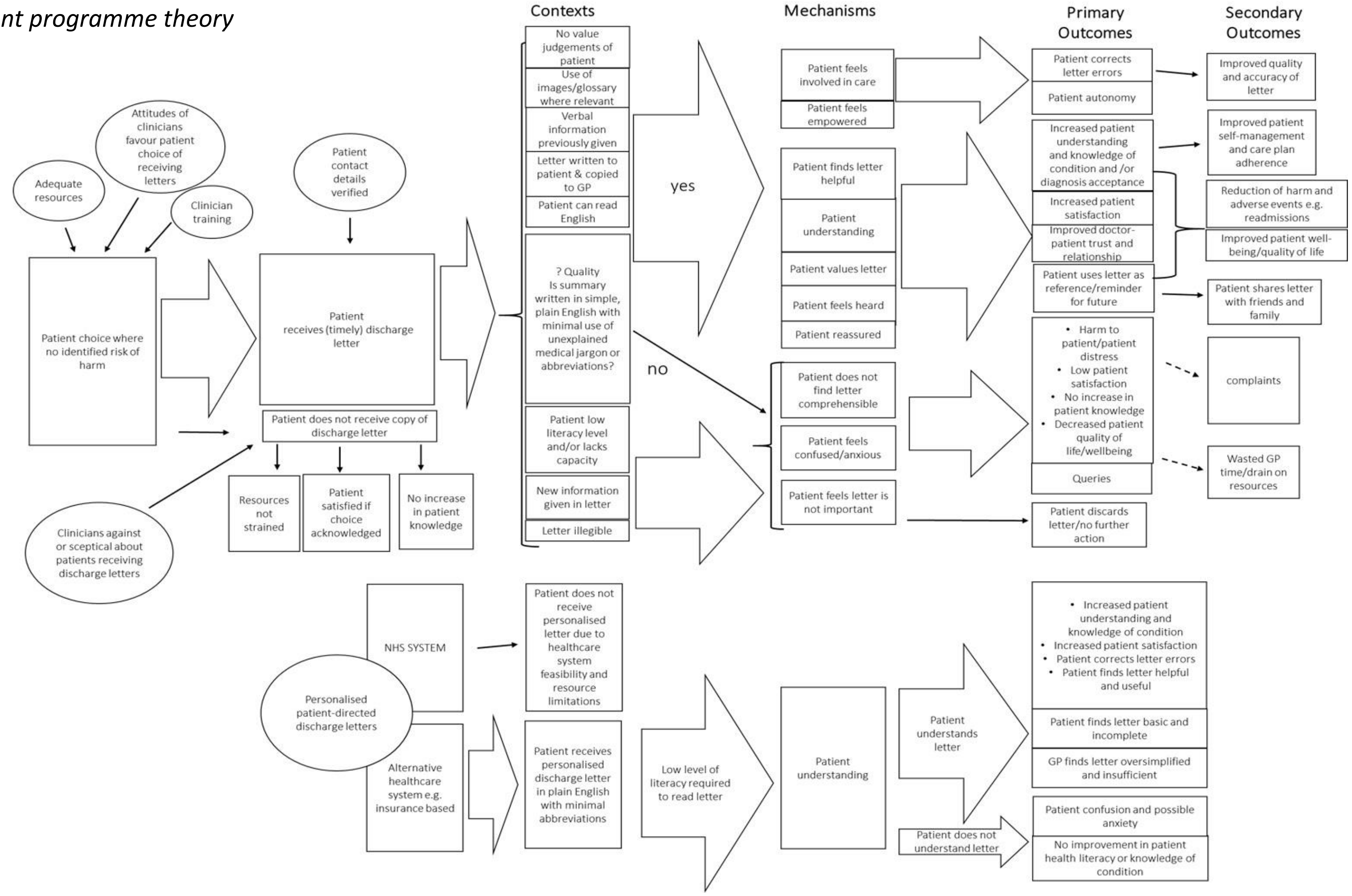
Resultant refined PT

The PT was systematically updated to produce a resultant PT following review steps 1-6. The points raised by stakeholders and evidence from the data sources were subsequently fed into the initial programme theory (Figure 5.5) to produce the resultant programme theory (Figure 5.15). The PT still shows two main channels for CMOCs: patient copies of letters and patient personalised letters. There remained limited CMOCs for where patients do not receive letters, due to the paucity of evidence available. Contexts for when the patient does receive their letter(s) were condensed into an aligned grouping of five key contexts for when the intervention may be theorised to work and four key contexts for when the intervention may be theorised not to work. The feasibility of providing a personal patient letter was updated on the PT; findings from both stakeholder feedback and data synthesis suggested personalised letters may currently be more feasible in private or insurance-based healthcare settings than in the *NHS*. In addition, the box of contextual influences was deleted, and the points integrated into the overall diagram. Patient outcomes throughout the PT were simplified and clarified (e.g. the outcomes such as “empowered patients” and “reduce patient anxiety” were simplified to the outcome “improved patient well-being”).

In addition, CMOCs have been “grouped” where overlap was apparent; for example, all resources are labelled simply as “resources” as data often concurrently referred to financial, administrative and clinician time resources. “Patient choice” emerges as a key influencer to the success (or not) of the intervention. Notably, there are a range of contexts, mechanisms and outcomes for when the intervention is theorised to “work” (e.g. positive outcome=improve doctor-patient relationship), and when it does “not work” (e.g. negative outcome=harm to patient). It is also evident that contexts can be used in combination to increase the likelihood of beneficial outcomes; this is indicated through wide arrows to show multiple linkages and amalgamations (e.g. a letter could contain no value judgements of patient and be written in simple plain English). Notably, the resultant PT has a higher incidence of CMOCs for when the intervention “does work”.

The resultant PT (Figure 5.15) is seen on the next page.

Figure 5.15 Resultant programme theory



5.16 Discussion: Summary of main findings

The review synthesised data from 103 relevant texts and 3 groups of stakeholders producing a narrative summary of findings and a programme theory diagram (Figure 5.15). This review expands upon existing reviews by moving beyond “benefits” and “drawbacks” of patients receiving letters alone, and considering contexts of *when* as well as *how* the intervention works. Although the review focuses on the UK health system, the realist review has enabled identification of findings that may be transferable to other healthcare settings.

RQ1 asked about intervention outcomes. Positive outcomes were: increased patient satisfaction (58, 393, 488, 492, 521, 531, 554, 572), improved doctor-patient relationship (493, 554), heightened patient knowledge (531), improved letter/record quality (63, 67, 567), and reduced anxiety (558). Negative outcomes were: patient queries (486), confusion (574, 575), and anxiety (394, 531).

RQ2 enquired after the important contexts for triggering these outcomes. Important contexts for positive outcomes were: letters written in plain English with minimal abbreviations (67), lay explanations for medical jargon (67, 523, 554) e.g. myocardial infarction (heart attack), written information provided alongside verbal explanation (487), no new information in letter (63, 493) or value judgements (517), letter translation (58, 86, 530) where relevant, training clinicians on letter writing practice (63, 193, 532, 533), use of pictures and glossaries where relevant (490, 511, 518, 545, 554), letters only given to patients who choose to have them (67, 554, 566), and where there is no identified risk of harm (63) or confidentiality breach (67). Important contexts for negative outcomes include: patient choice not acknowledged (67), only verbal information provided (500), letter involving terms and a style that is too advanced for patient to comprehend (198), and letter sent without verifying patient contact details (506, 510, 573).

This review has produced two key findings. The first is that the reviewed evidence indicates that patients value their discharge letter and their understanding of them is possibly greater than clinicians perceive (489, 546, 551). However, reasons behind patient and clinician perceived comprehension discrepancies were unclear. It is important to situate this finding in terms of the study exclusion criteria and participant diversity across the evidence reviewed, for example, it is likely that patients who participate in research on this topic have a greater level of interest and literacy than those who did not participate. One or a number of demographic groups not involved in the studies, either by choice not to participate or by exclusion, may have accounted for a portion of those who clinicians perceive to have low understanding. Thus, evidence for low patient understanding was limited. The second key finding is that in a number of contexts, patients expressed preference for receiving correspondence (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574). Patients can continue to use the letter(s) to refer to beyond discharge (393, 517, 554), as a medication list reminder, and to share with friends/relatives as desired (393, 394, 497, 517). Nevertheless, patient *choice* should still be acknowledged as the review did find evidence that not *all* patients want their letters; a practical way of addressing this would be to check with the patient that they want a letter in the first instance (67, 188, 506, 554).

Systems for monitoring patient letters (e.g. Newcastle Policy (67)) seems prudent moving forward. This is of particular relevance in the *NHS* given that guidelines for copying letters have been widely available since 2003 (63, 69, 184, 185) and yet in practice, many patients do not receive letters (508, 554). Given the wider context of a drive for patient-led care and patient-centred communication and decision-making (186, 572, 581), this review is timely and relevant. The review findings have the potential to influence policy and improve practice. The results demonstrate how care can be improved through good quality letter provision and consideration of patient *choice* which was instrumental to increasing the likelihood of desired outcomes. However, current clinician views (489, 497, 510, 517, 546, 551, 555) and hierarchical mimicking of practices of seniors (502) pose a barrier to implementation and need addressing.

Evidence for some aspects of the PT was rather limited, indicating a need for more research. Potential barriers such as clinician views and the current limited available clinician training on letter writing should be addressed. Since patient and clinician views were sometimes dichotomised, for example, in relation to “understanding”, a study which parallels both views alongside the same patient cases to understand reasons for any discrepancies would be useful and may provide valuable insights. This PhD attempts to address this need for further research through building “quartet” cases which parallel the perspectives of different groups involved in the discharge process in respect of aligned patient cases in order to highlight and potentially explain previously reported discrepancies.

5.17 Review limitations

For this review, RAMESES quality and publication standards for realist reviews were followed (578, 579). Quality assessment and analysis is to a degree dependent on reviewer skills and reflexivity (485, 582). Furthermore, analysis and inferences made in a realist synthesis are “subjective and interpretative” (583, 584). However, because of the steps taken for the review are transparent, this allows judgements on the plausibility of results.

The resultant PT is limited by the quality and content of evidence reviewed.

Due to lack of time, it was not possible to involve all stakeholder groups who may be connected with discharge communication. Nonetheless, the review had a specific focus on “receiving” discharge communication and thus stakeholders were targeted who were closely associated or involved in policy of discharge letter receipt. Some of the evidence found in sources was markedly thin, particularly in relation to costing information, recent clinician viewpoints, personalised letter copies, and influence on the doctor-patient relationship. “Positive” and “negative” labels were based on evidence presented in the documents reviewed; at times a degree of subjectivity was involved in this process. Although these binary labels (positive/negative) may have oversimplified some CMOCs, the usefulness of clear distinctions between when the intervention was interpreted to “work” (and not) were felt to have outweighed the drawbacks of this method. Notably, there were a greater number of CMOCs relating to positive outcomes than negative outcomes. As CMOCs were developed through synthesis of empirical evidence, it may be interpreted that the review findings generally support the benefits of copy letter practice as outlined in UK policies and guidelines (59, 62, 63, 69, 184, 185). However, the high number of CMOCs with positive outcomes (31/48 CMOCs) may also be due to publication bias; no or unclear outcome differences, negative outcomes, or “nil” intervention outcomes (i.e. patients not receiving letters) may be under-reported and so under-represented in the synthesised evidence base.

The review and PT are not exhaustive but this is not the intention of a realist review (585). The PT is limited by the representativeness and diversity of the patient groups within the sources reviewed. Much of the evidence was drawn from small scale studies conducted in single settings, and even within these there is likely to have been participation bias which will have resulted in underrepresentation of the views of ethnic minorities, patients with low literacy, and other marginalised groups.

5.18 Chapter summary

This review has expanded upon evidence from previous literature and critically illustrated *how* the intervention of patients receiving discharge letters may *work.* The resultant PT forms a basis for explaining how, when, why and for whom this intervention does and does not work. This review makes suggestions for how best practice of patients receiving discharge letters may be improved to enhance the provision of patient-centred care. The PT will be further refined in chapter ten based on evidence generated from this research (chapters 6-10).

6. Study 2 (PART A) A GP-selected sample of “successful” and “unsuccessful” discharge letter exemplars: a letter content analysis and CL analysis of GP comments

This chapter outlines the discharge letter sample and the participating GP views on what makes a “successful” discharge letter and the content and quality of the selected letters. Firstly, the methods are briefly covered in section 6.1. Secondly, section 6.2 will summarise the recruitment response rates and sample size. A description of the sample characteristics is covered in section 6.3 after which the results of the letter content analyses are in section 6.4. The comments made by GPs during selection are analysed using CL in section 6.5 after which a discussion of findings takes place in section 6.6. Finally, section 6.7 summarises the chapter.

6.1 Methodology and methods

The methods and planned sample size for study 2 are outlined in chapter four (section 4.5). Part A of study 2 was designed to generate three core data sets: the discharge letter sample, the successful/unsuccessful groupings, and the comments for letter groupings. Correspondingly, the plan for analysis involved: content analysis (402) of the letters, statistical analyses of the content coding to look at differences between the two groups of letters (successful/unsuccessful), CL analysis of the comments, and subsequent triangulation of content and comment findings in order to characterise features of GP-assessed “successful” and “unsuccessful” letters. The analytical techniques employed in this chapter were grounded in the objectives and RQs relevant to part A of study 2; the remainder of objectives and RQs for study 2 are addressed in part B in chapter seven.

Research question (RQs):

RQ3: What content items do GP-assessed successful discharge letters contain?

Objectives:

1) For GPs to select a sample of successful and unsuccessful exemplar discharge letters for analysis.
2) To assess the letters through content analysis guided by policies and guidelines and through feedback from the GPs who selected their letters about their strengths and weaknesses.

One of the objectives was for *content analysis* (402) to be undertaken on the discharge letter sample. To increase validity and replicability of coding and analyses, content "codes" or categories were based on guidelines for content of discharge summaries and letters. Selection of appropriate and relevant guidelines involved several considerations. At the time of analysis, the most relevant and recently published guidelines (64) were, *"The PRSB Standards for the Structure and Content of Health and Care Records"* by *NHS Digital* and *Professional Record Standards Body (PRSB),* dated July 2018. Notably, these guidelines were published after data collection for letter sampling (August 2017- March 2018) and so it was perceived that there would be a degree of unfairness in evaluating letters against guidelines and standards not yet available to staff at time of sampling. Thus, the decision was made to base content categories on the corresponding preceding document (61), *"Standards for the clinical structure and content of patient records"* by *the Royal College of Physicians (RCP),* dated July 2013; minimal differences were observed between these documents. The earlier document (61) covers content and structure of patient records in the *NHS* in line with needs of clinicians, patients, and other relevant groups (e.g. carers) to include inpatient summaries and outpatient letters. These standards were also signed and approved by the *Academy of Medical Royal Colleges (AOMRC)* in April 2013 and are intended to reflect best practice (61) of content of patient records.

As these standards were available sometime prior to data collection, it was reasonable to assume they would be familiar or at least available to Trusts and physicians, that is, those responsible for producing discharge summaries, and therefore it was expected that the majority of sampled letters should adhere to these standards. Crucially, there was an issue with basing content coding solely on

RCP standards (61) which was that headings for inpatient and outpatient discharges were separate sections within the standards document whereas this research study considers both to be within the broader remit of written discharge communications. Following previous health content analysis work on discharge letters in 2002 (14) and for continuity of coding, it was desirable to subject all discharge letters from the sample to the *"same structured content analysis"* (14). Therefore, headings across sections within the standards document were synthesised to form the content coding categories. Interestingly, a recent policy and guideline document could not be found which synthesises these elements and so this was performed manually.

Categories from *RCP* standards (61) were extracted which were relevant to the study RQs. Therefore, coding headings are primarily based around core clinical elements and informational needs of patients and GPs.

The protocol and GP practice information documents stated that the following details should be removed during the process of redaction: patient day and month of birth, patient name and address, NHS and hospital number, any other names mentioned within the letter (e.g. husband's name) with the exception of the hospital clinician and GP names, and any other personal description of patient which may act as an identifier (e.g. patient job). Administrative details such as date of admission are arguably not relevant across discharge communications (i.e. this would not apply to an outpatient discharge) and serve a different function within the care record and so were excluded from content coding headings. Furthermore, many administrative details (e.g. patient address…) were redacted. Notably, such administrative details were observed to be one of the main differences between the section headings within standards documents and so their exclusion increased relevance and focus of codings across letter types.

The coding content was limited in that it could not account for counterfactual information in the discharge summaries that may have been picked up by GPs (e.g. where it said no medication changes but there had been changes) as the study did not grant full access to patient records, only the letter itself. The binary content coding codes of "yes/no" may have oversimplified coding and description of complex cases.

Categorisation headings from the *RCP* standards document (61) were then supplemented with realist review findings from chapter five which aligned with previously available relevant guidelines to include 2012 *NICE* guidance (59), the 2000 *NHS Plan* (62) and 2003 *good practice guidelines* (63). Although the framework was a synthesis of documents, there was considerable overlap between the content elements extracted across document sections. Overall, the content analysis techniques proposed here were advantageous in that the methodology was systematic in terms of how documents were categorised, each document was subjected to the same categorisation criteria, and the criteria themselves were justifiable, grounded in government standards and previously published guidelines for discharge and written communications. To assess coding reliability and test the initial coding system, the initial headings were to first be piloted; I coded an illustrative 5% sample and supervisor JD second coded. Inter-rater agreement for reliability was set the same as the realist review in chapter five for consistency (kappa measure K≥.8 (403)). The results of coding piloting are presented at the start of the coding results (section 6.4).

This study ascertains whether there are associations between letter content and GP quality gradings through statistical calculations. Content codings were descriptively summarised and then inferential statistics (470, 586) were conducted in order to test hypotheses that there are content feature differences between GP-assessed “successful” and “unsuccessful” letters. The analysis plan also intrinsically evaluated the standards themselves as they were based upon needs of clinicians and so it was expected that GP evaluations would align with whether the letter adhered to national governing standards.

CL has previously successfully been applied to comment data within the field of healthcare (424, 427) and was a suitable choice of methodology. CL was planned for analysing the comment data, assuming a sufficient number. CL analysis for comments differed to other chapters in that keywords were not the point of departure but frequencies and relative frequencies for content words (410, 434, 587) (top 25) were compared between the “successful” and “unsuccessful” comment sub-corpora. This allowed rapid comment comparisons and was predicted to elucidate pattern differences between the two groups. The concordancer (410) *Antconc* (447), which is often recommended for CL research (405, 440) , was selected as the software for compiling the corpus and expounding outputs. Comment hand-searching also took place.

These methods were designed in order to address RQ3. Content analysis was anticipated to allow quantification of letter features to describe feature differences between the grouped “successful” and “unsuccessful” letters. This directly related to RQ3 in affording characterisation of content items contained within GP-assessed “successful” discharge letters (section 6.4). Application of CL techniques to the letter comment data was expected to permit quantification and extraction of comment patterns between the letter groupings to generate further insights regarding features of “successful” letters for RQ3 (section 6.5). The findings from the CL comment analysis were then planned to be triangulated with the content analysis in order to confirm findings, or otherwise, to generate insights into discharge letter successfulness according to GPs (section 6.6).

6.2 Recruitment response rates and letter sample size

Letters were sampled according to purposive sampling (395); GPs were encouraged to choose letters for the study as and when they came across them in practice which they assessed to be successful or unsuccessful examples of written discharge communication. As the letters selected potential participants for subsequent study phases, GPs were asked to select letters in line with the study inclusion and exclusion criteria (see chapter four). During letter selection, GPs were asked to complete the selection proforma (appendix A) and group the letters into “successful” or “unsuccessful” and provide a comment on reasons for their grouping. There were no set criteria for letter categorisation as the selection was based on each participating GP’s interpretation of what makes a successful or unsuccessful discharge letter. Following letter selection, GP practice staff redacted the letters of patient identifiable information before transferral of the sample to myself. In addition, opt-out posters were provided for each participating practice to display in patient areas.

The study aimed to recruit 30-50 GPs across 15 GP practice sites, with a target of 2-3 GPs per site. In practice, 53 GPs were recruited across 18 practices with a median of 3 GPs per practice and a range of 1-8 GPs per practice (mean=3, IQR: 1, 4). Thus, this phase of the study met recruitment targets. The practice recruitment targets (see chapter four) in terms of size and locality alongside the recruitment outcomes are outlined in table 6.2.1 overleaf. In summary, the table shows the study met or exceeded all locality targets but that the study under-recruited small practices and over-recruited medium sized practices.

Table 6.2.1 Practice recruitment expected targets and actual frequencies

Practice Size	**Practice region**							
	Coventry, Rugby & North Warwickshire		**South Warwickshire**		**Herefordshire**		**Total**	
	target	actual	target	actual	target	actual	target	actual
small (<5000 patients)	2	0	2	1	1	0	5	1
medium (5,000-10,000 patients)	2	6	2	3	1	2	5	11
large (>10000 patients)	2	3	2	2	1	1	5	6
Total:	6	9	6	6	3	3	15	18

In order to build the desired letter sample of 700 discharge letters, GPs had a target selection size of 14-24 letters each. In practice, letter selection ranged from 10-71 letters across practices (mean=27, median=20, IQR: 19, 31) and individual letter selection ranged from approximately 3-23 letters per GP (mean=12, median=10, IQR: 8, 17). Overall, this meant 489 letters were sampled which is below the target of 700. Although sampling was somewhat balanced and several GPs selected letters within target range (14-24 letters), GP selection was skewed toward the lower end of the range resulting in an overall smaller sample size than planned. Reasons for this are explored in the discussion (section 6.6).

6.3 An overview of the letter sample characteristics

Tables 6.3.1-10 over the following pages display the sample letter characteristics and table 6.3.10 contains a characteristics summary. Additionally, where relevant, the tables show the proportion of GP graded successful/unsuccessful letters within each of the variants.

Table 6.3.1 shows GP-assessed letters rated as “successful” accounted for 59.5% of the sample and “unsuccessful” for the remaining 40.5%; this distribution is reasonably even although slightly more skewed than desired (50/50).

Table 6.3.1 GP letter rating

GP letter grading	Frequency
successful	291 (59.5%)
unsuccessful	198 (40.5%)
Total	489 (100%)

The sample discharging hospitals were not equally apportioned; 55.0% of the letters were from hospital B with the rest split across the remaining hospital sites (see table 6.3.2).

Table 6.3.2 Hospital sample

	Hospital (Trust)	Letter log count
1	Hospital A	120 (24.5%)
2	Hospital B	269 (55.0%)
3	Hospital C	22 (4.5%)
4	Hospital D	59 (12.1%)
5	Hospital E	13 (2.7%)
6	Hospital F	3 (0.6%)
7	Other	3 (0.6%)
	Total	489 (100.0%)

As detailed in table 6.3.3, the region most represented within the sample was Coventry (55.0%). Although hospital dispersion was uneven, it is reflective of hospital sizes and facilities. Hospital B is one of the largest acute hospitals across participating counties (1,005 beds) and so GP practices likely receive a high proportion of letters from this hospital. On the other hand, hospital F is a small community hospital (110 beds) and so it would be expected that GP surgeries would receive and therefore select a lower proportion of discharge letters from this hospital.

Table 6.3.3 West Midlands region of sample (by discharging hospital)

West Midlands region	Frequency
Coventry	269 (55.0%)
Herefordshire	59 (12.1%)
North Warwickshire	22 (4.5%)
Rugby	3 (0.6%)
South Warwickshire	120 (24.5%)
other	16 (3.3%)
Total	489 (100.0%)

As seen in table 6.3.4, across letters, discharges were: inpatient (N=375, 76.7%), outpatient (N=25, 5.1%), not admitted (A&E) (N=54, 11.0%) and other (e.g. day case procedure) (N=35, 7.2%).

*Table 6.3.4 Admission/discharge type * GP letter grading cross tabulation*

Discharge type	GP successful rated letters	GP unsuccessful rated letters	Portion of sample
inpatient	235 (80.8%)	140 (70.7%)	375 (76.7%)
other	16 (5.5%)	19 (9.6%)	35 (7.2%)
other (A&E)	23 (7.9%)	31 (15.7%)	54 (11.0%)
outpatient	17 (5.8%)	8 (4%)	25 (5.1%)
Total	291 (100.0%)	198 (100.0%)	489 (100.0%)

Table 6.3.5 shows that the majority of letters within the sample were structured (N=466, 95.3%) as opposed to narrative (N=22, 4.5%) or a combination (N=1, 0.2%).

*Table 6.3.5 Structured/narrative/other * GP letter grading cross tabulation*

Letter form	Successful letters	Unsuccessful letters	Portion of sample
combination	0 (0.0%)	1 (0.5%)	1 (0.2%)
narrative	17 (5.8%)	5 (2.5%)	22 (4.5%)
structured	274 (94.2%)	192 (97.0%)	466 (95.3%)
Total	291 (100.0%)	198 (100.0%)	489 (100.0%)

Likewise, as displayed in table 6.3.6, most letters were typed (N=423, 86.5%) and the remainder were handwritten (N=42, 8.4%) or a combination (N=25, 5.1%). Handwritten letters (N=41) had a higher proportion of unsuccessful (63.4%) than successful letters (36.6%) within the full sample. The reason for the high skew toward “structured” letters is explained by the skew toward “inpatient” letters; at participating hospitals, inpatient templates were “structured” in form and “outpatient” letters were narrative. Thus, the skew toward admission types (inpatient) pre-determined the unbalanced distribution of letter forms within the sample.

*Table 6.3.6 Typed/handwritten/combination * GP letter grading cross tabulation*

Letter format	Successful letters	Unsuccessful letters	Portion of sample
combination	14 (4.8%)	11 (5.6%)	25 (5.1%)
handwritten	15 (5.2%)	26 (13.1%)	41 (8.4%)
typed	262 (90.0%)	161 (81.3%)	423 (86.5%)
Total	291 (100.0%)	198 (100.0%)	489 (100.0%)

As displayed in table 6.3.7, the hospital role of letter writers/signatories ranged from ACPs to nurses and doctors from grades junior (e.g. FY1) up to consultant. Letters produced by the three ACPs and one ANP were all graded successful. The highest proportion of letters produced by a single role was that of junior doctors (25.5%) although, 26.2% of letters had no stated role. It was surprising that the role of the discharging physician was not provided on 128 letters (26.2%) as this was a specified criteria on the *RCP* standards for the content of discharge records (61).

*Table 6.3.7 Level/role of signing physician * GP letter grading cross tabulation*

HP Role	**Successful letters**	**Unsuccessful letters**	**Portion of sample**
Advanced Clinical Practitioner (ACP)	3 (1%)	0 (0%)	3 (0.6%)
Advanced Nurse Practitioner (ANP)	1 (0.3%)	0 (0%)	1 (0.2%)
BLANK	62 (21.3%)	66 (33.3%)	128 (26.2%)
Clinical Fellow	10 (3.5%)	1 (0.5%)	11 (2.3%)
Consultant	26 (8.9%)	15 (7.6%)	41 (8.4%)
Core Trainee (CT(N))	21 (7.2%)	15 (7.6%)	36 (7.4%)
Junior Doctor	85 (29.2%)	40 (20.2%)	125 (25.5%)
Nurse	16 (5.5%)	5 (2.5%)	21 (4.3%)
Registrar	6 (2.1%)	13 (6.6%)	19 (3.8%)
Senior House Officer (SHO)	39 (13.5%)	21 (10.6%)	60 (12.3%)
Specialty Registrar	5 (1.7%)	4 (2%)	9 (1.8%)
Specialty Trainee (ST(N))	17 (5.8%)	18 (9.1%)	35 (7.2%)
Total	291 (100.0%)	198 (100.0%)	489 (100.0%)

Table 6.3.8 on the next page displays a good range of variation in relation to specialties (N=39). Accident & Emergency (N=62) had a higher proportion of unsuccessful (55.0%) than successful letters (45.0%) within the full sample. As demonstrated in table 6.3.8, letters are quite evenly dispersed across specialties with the exception of Accident and Emergency (A&E) which exhibited a higher number of letter cases (N=62, 12.7%). Notably, 121 letters (24.8%) had no specified specialty on the discharge letter. The reason for unspecified specialties on letters was explained through reviewing hospital templates. The inpatient discharge letters for hospital A had no "specialty" box on the template and so this information was often missing from these letters; this accounts for almost all of the letters with no listed "specialty" information in the sample.

Table 6.3.8 Discharging speciality of letters

Hospital specialty	**Successful letters (%)**	**Unsuccessful letters (%)**	**Portion of sample**
Accident & Emergency	28 (9.7%)	34 (17.2%)	62 (12.7%)
Acute Medicine	5 (1.7%)	3 (1.5%)	8 (1.7%)
Ambulatory care	2 (0.7%)	1 (0.5%)	3 (0.6%)
Acute Medical Unit	1 (0.3%)	1 (0.5%)	2 (0.4%)
Breast Surgery	4 (1.4%)	0 (0.0%)	4 (0.8%)
Cardiology	17 (5.9%)	5 (2.5%)	22 (4.5%)
Cardiothoracic Surgery	6 (2.1%)	2 (1.0%)	8 (1.7%)
Clinical Haematology	1 (0.3%)	5 (2.5%)	6 (1.2%)
Colorectal Surgery	5 (1.7%)	3 (1.5%)	8 (1.6%)
Dermatology	0 (0.0%)	1 (0.5%)	1 (0.2%)
Diabetic Medicine	4 (1.4%)	1 (0.5%)	5 (1.0%)
Endocrinology	6 (2.1%)	1 (0.5%)	7 (1.4%)
Ear Nose and Throat	3 (1.0%)	2 (1.0%)	5 (1.0%)
Fetal Medicine	1 (0.3%)	0 (0.0%)	1 (0.2%)
Gastroenterology	3 (1.0%)	1 (0.5%)	4 (0.8%)
Gastrointestinal Surgery	5 (1.8%)	1 (0.5%)	6 (1.2%)
General Medicine	23 (7.9%)	9 (4.5%)	32 (6.6%)
General Surgery	18 (6.2%)	8 (4.0%)	26 (5.3%)
Geriatric Medicine	7 (2.4%)	8 (4.0%)	15 (3.1%)
Head and Neck Surgery	2 (0.7%)	0 (0.0%)	2 (0.4%)
Infectious diseases	3 (1.0%)	1 (0.5%)	4 (0.8%)
inpatient	1 (0.3%)	0 (0.0%)	1 (0.2%)
Maxillo-facial surgery	2 (0.7%)	0 (0.0%)	2 (0.4%)
Nephrology	3 (1.0%)	7 (3.5%)	10 (2.0%)
Neurology	3 (1.0%)	0 (0.0%)	3 (0.6%)
Neurosurgery	3 (1.0%)	0 (0.0%)	3 (0.6%)
none specified	64 (22.0%)	57 (28.9%)	121 (24.8%)
Obstetrics & Gynaecology	15 (5.2%)	11 (5.7%)	26 (5.3%)
Oncology	3 (1.0%)	1 (0.5%)	4 (0.8%)
Ophthalmology	2 (0.7%)	0 (0.0%)	2 (0.4%)
Oral & Maxillofacial	1 (0.3%)	0 (0.0%)	1 (0.2%)
Pain service	1 (0.3%)	0 (0.0%)	1 (0.2%)
Pancreatic Surgery	0 (0.0%)	1 (0.5%)	1 (0.2%)
Plastic Surgery	1 (0.3%)	1 (0.5%)	2 (0.4%)
Respiratory Medicine	10 (3.4%)	13 (6.7%)	23 (4.7%)
Stroke Medicine	4 (1.4%)	3 (1.5%)	7 (1.5%)
Trauma & Orthopaedics	15 (5.2%)	6 (3.0%)	21 (4.3%)
Urology	16 (5.6%)	6 (3.0%)	22 (4.5%)
Vascular Surgery	3 (1.0%)	5 (2.5%)	8 (1.7%)
Total	291 (100.0%)	198 (100.0%)	489 (100.0%)

Gender distribution was very even where this information was available (51% F, 49% M) (see table 6.3.9). Letters were overly redacted for 268 cases (54.8%) whereby the gender of the patient had been removed. Reasons for admission were originally coded but were not tabulated due to the huge variation; there were over 300 different reasons for admission; this demonstrates the diversity of the letter sample.

Table 6.3.9 Gender of patients on letters

Gender	Frequency	Valid Percent
missing	268 (54.8%)	-
F	112 (22.9%)	51.0%
M	109 (22.3%)	49.0%
Total	489	100%

Patient's ages were missing for 368 letters (75.3%) despite the redaction protocol stating that year of birth/age should be left intact on letters. This meant that the combined age and gender of discharged patients was not available for 368 letters, the vast majority of the sample. Therefore, the statistics presented in the tables are not necessarily representative of the diversity within the full letter sample. For the 121 letters (24.7%) where the age was stated for the patient, there was wide variation (range=19-96, median=60, mean=57, IQR: 37, 75). The age range was not normally distributed but negatively skewed towards older adults (skewness=-.166, kurtosis=-1.207).

The sample characteristics are summarised in table 6.3.10 on the next page.

Table 6.3.10 Summary of letter sample characteristics

Characteristic	**Original sample (chapter 6) (N=489)**
GP grading	Successful: 291 (59.5%) Unsuccessful: 198 (40.5%)
No. of GP practices and GPs	18 practices 53 GPs
Practice sizes	Small (<5,000 patients): 1 (5.6%) Medium (5-10,000 patients): 11 (61.1%) Large (10,000+ patients): 6 (33.3%)
Practice localities	Rugby: 3 (16.7%) Herefordshire: 3 (16.7%) Coventry: 5 (27.7%) North Warwickshire: 1 (5.6%) South Warwickshire: 6 (33.3%)
Hospital localities	Rugby: 3 (0.6%) Herefordshire: 59 (12.1%) Coventry: 269 (55.0%) North Warwickshire: 22 (4.5%) South Warwickshire: 120 (24.5%) Other: 16 (3.3%)
Admission	Inpatient: 375 (76.7%) Outpatient: 25 (5.1%) Not admitted (A&E): 54 (11.0%) Other (e.g. day case): 35 (7.2%)
Patient gender	Female: 112 (22.9%) Male: 109 (22.3%) Missing: 268 (54.8%)
No. of specialty	39 Specialties
Hospital	Hospital A: 120 (24.5%) Hospital B: 269 (55.0%) Hospital C: 22 (4.5%) Hospital D: 59 (12.1%) Hospital E: 13 (2.7%) Hospital F: 3 (0.6%) Other: 3 (0.6%)
Hospital role of discharging physician	11 different roles
Letter form	Combination: 1 (0.2%) Narrative: 22 (4.5%) Structured: 466 (95.3%)
Letter format	Combination: 25 (5.1%) Handwritten: 41 (8.4%) Typed: 423 (86.5%)
Patient age	Range: 19-96 Median: 60

6.4 Content analysis of the letter sample

The initial categorisation system was designed for coding letters on presence or absence (yes/no) of features relevant to RQ3. This simple binary coding was felt to be beneficial as it increased the objectivity of coding as opposed to scalar evaluative gradings, which may be more subjective. Furthermore, coding 489 letters was an arduous task and so simple binary codings allowed for this process to feasibly take place within the scope of the PhD. Moreover, binary codings allowed generation of Kappa measures to assess coding reliability. Inferential statistical calculations would not have been possible if the coding system had been more descriptive in nature.

The initial coding categorisation system was piloted on a 5% illustrative sample of the discharge letters and then second coded by supervisor JD in order to assess the validity and usefulness of the categorisation headings and test coding reliability. Firstly, KW coded the sample and made the decision to remove several headings, which were irrelevant, non-applicable to the sample, substantially overlapping with other headings, or otherwise superfluous. For example, “letter is clearly written” category was removed, as this heading was too subjective and difficult to code consistently. Another removed heading was “patient offered copy/copied in” as very few letters included a statement or information regarding this. Other categories removed during piloting included: letter written directly to patient, family history, recommended management (merged into plan category), and social context. Following category refinement, JD coded the same 5% sample and a kappa measure (588-590) was run on the coding of remaining categories to look at inter-coder agreement. Kappa was set at $K \geq .8$ (403) to specify a satisfactory level of agreement. The kappa results are displayed in table 6.4.1 on the next page.

Table 6.4.1 Kappa results for content coding

Categorisation heading for coding	Kappa agreement measure
Discharging speciality/department	.881 (p<0.001)
Discharging consultant	.940 (p<0.001)
Reason for admission	.940 (p<0.001)
Diagnosis	.940 (p<0.001)
Procedures and investigations performed	.940 (p<0.001)
Clinical summary	.970 (p<0.001)
Investigation results	.881 (p<0.001)
Examination findings	.851 (p<0.001)
Medication name(s)	.970 (p<0.001)
Medication dose and frequency	.970 (p<0.001)
Reasons for medication	.791 (p<0.001)
Medication recommendations	.911 (p<0.001)
Medication changes	.910 (p<0.001)
Reasons for medication changes	.881 (p<0.001)
Investigations/procedures/appointments requested of where results are pending	.940 (p<0.001)
Patient's and carer's concerns, expectations and wishes	1.00 (p<0.001)
Information and advice given to patient	.940 (p<0.001)
Plan and requested actions/follow up	.911 (p<0.001)
Acronyms (unexplained)	.940 (p<0.001)
Medical jargon (unexplained)	.584 (p<0.001)

Generally, agreement was good with 18 categories having a kappa score k>.8; the median across scores was 0.94 (p<0.001). However, two categories had k<0.8 which were "reasons for medication" (k=.791) and "medical jargon" (k=.584). All discrepancies were discussed between KW and JD until consensus was reached. The reasons for the two low agreement scores were that KW only coded explicit reasons for medication whereas JD coded implicit reasons and KW coded presence of unexplained jargon from the patient or "lay" perspective whereas JD coded from an expert clinical perspective (GP). Both of these issues were easily resolved with discussion.

Next, KW and JD discussed the coding system itself and made further refinements in order to make developments and improvements; the decision was made to exclude acronyms from the "unexplained acronym" coding that occurred in everyday common language (e.g. A&E). These were agreed with the supervisory team. Additionally, although "yes", "no" and "N/A" were all used for pilot coding, KW and JD agreed the "N/A" code should be removed as it introduced a subjective clinical judgement into the coding. However, removal of "N/A" for full coding may have oversimplified some cases where the feature was absent because it was not applicable and not because it was “missed”. Due to high agreement it was determined that it would be appropriate for KW to code the remaining 95% of the sample but that difficult or ambiguous coding cases would be adjudicated by supervisors.

The finalised coding categorisation system headings are summarised in table 6.4.2. Overall, the number of categories reduced from 26 to 15. KW and JD agreed that the piloting process had been advantageous for refining definitions, reconciling discrepancies, validating the reliability of the coding and developing codes. Following piloting, given that the majority of the sample were inpatient letters (76.7%), it was decided that coding should address these letters *only* in order to focus the codes, not cloud analyses, and improve validity of findings. Analysis of the entire sample would have been limited by influence of confounding factors for which it would have been difficult to control. This inpatient focus increased sample homogeneity, which in turn increased validity of statistical analyses. Since several coding discrepancies related to A&E or outpatient letters, this decision also increased coding reliability. The distribution of GP graded letters within the inpatient sample (N=375, S=62.4%, US=37.6%) was similar to the full sample distribution (N=489, S=59.5%, US=40.5%) and so it was felt this focus would not overly skew analyses. From pilot coding, some observations were made regarding outpatient and A&E letters to include that the former may be “unsuccessful” when there is no clear succinct clinical summary and the latter may be “unsuccessful” when reason for admission and outcome cannot be determined.

Thereafter, KW coded the remaining 95% of the sample with the intention to discuss contentious coding cases for coding reconciliation. However, this was not required. Subsequently, KW completed coding of the 375 letters without any issues.

Table 6.4.2, which outlines the final categorisation system, is on the next page.

Table 6.4.2 Refined headings and coding categorisation system (final)

Content feature heading	**Description***	**Content feature present/absent**	**Guideline/standard from which item was extracted/based**
Discharging physician	Name and role of discharging physician/person completing and authorising discharge summary.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Reason for admission/ contact purpose	The health problems and issues experienced by patient resulting in their admission/attendance. Explanatory statement of the purpose of the contact.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Diagnosis	Description of problem in as much detail as possible at time of discharge to include confirmed, differential or working diagnoses.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Procedures/investigations performed (if any)	Any procedures or investigations performed. This could include blood tests, imaging etc.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Procedure/investigation results and examination findings	Results of investigations or tests including result value, interpretation and any plans for acting upon results. Record of any results of observations or examinations carried out (e.g. blood pressure, examination of skin).	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Medication name(s)	Generic and/or brand name.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Medication dose and frequency	Amount of ingredients to be taken and frequency of administration.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*

Medication changes	Note when a drug has been stopped and another started. Highlight any new medications. Must explicitly state that there has been a change.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Reasons for medication changes	Explain reasons for any medication changes (e.g. patient intolerant) or new medications started. Must explicitly state why in terms of reason for medication change.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Investigations/procedures requested or where results are pending	This should include name of investigation/appointment/test/procedure requested or details of pending communications, results or referrals to be actioned by the hospital.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Patient's and carer's concerns, expectations and wishes	Any concerns wishes or goals of patient or relevant carer/guardian/representative.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Information and advice given	This should include what information was given and to whom. This can include oral and written information and may include cases where this is implicitly communicated.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
GP Plan, follow up and actions	GP actions and follow up plan to include items which need repeating or undertaking in the future (e.g. repeat blood tests) and may include a recommended management plan or recommendations regarding medications.	*Yes/no*	*Royal College of Physicians (2013) (61) "Standards for the clinical structure and content of patient records".*
Acronyms	Unexplained acronyms and abbreviations should be avoided with the exception of very commonplace abbreviations e.g. A&E.	*Yes/no*	*Department of Health (2003) (63) "Copying letters to patients: good practice guidelines"*
Jargon	Avoid unexplained jargon/medical terms. Lay terms should be used following medical terms.	*Yes/no*	*Department of Health (2003) (63) "Copying letters to patients: good practice guidelines"*

*NB: description is sometimes direct wording extracted from document

Descriptive statistical tests to include frequencies and percentages were run for addressing the theory that content feature adherence (in line with guidelines in table 6.4.2) would be low; this theory was grounded by findings in chapters 2-5. The results of the descriptive statistics are summarised in table 6.4.3. The results vary depending on the feature but overall do support the theory that content feature adherence is somewhat low.

Table 6.4.3 Descriptive statistics for inpatient discharge letters content coding (N=375)

Content feature	**Feature presence (yes)**	**Feature absence (no)**
Discharging physician (name and role)	84.0%	16.0%
Reason for admission	94.4%	5.6%
Diagnosis	88.8%	11.2%
Tests/procedures performed	88.5%	11.5%
Investigation results/examination findings	89.1%	10.9%
Medication names	82.4%	17.6%
Medication dose and frequency	82.1%	17.9%
Medication changes	56.8%	43.2%
Reasons for medication changes	26.9%	73.1%
Hospital plan (pending actions e.g. outpatient appointment)	62.9%	37.1%
Patient concerns/wishes	8.3%	91.7%
Information to patient	33.3%	66.7%
GP plan (actions/management)	63.5%	36.5%
Acronyms (unexplained)	81.3%	18.7%
Medical jargon (unexplained)	76.5%	23.5%

Thereafter inferential statistical testing was completed on all independent variables (content features) against the dependent variable (GP grading) in order to address RQ3. Due to the categorical nature of the coding system and sample size, the chi-squared test (591-593), was deemed the most appropriate test for the data; assumptions were met (465, 592, 594). These tests looked at whether the proportion of letters with [content feature] graded as successful were statistically different from the proportion of letters without [content feature] graded as successful. It was theorised that there would be a difference and indeed that presence of particular content features of written discharge communications would be pivotal to GP gradings. It was predicted that the results would allow deciphering of tangible reasons why letters may be viewed by GPs as higher and lower quality in terms of specific letter features, which subsequently would highlight important features for successful communications. The null hypothesis (H0) and alternative hypothesis (H1) are both stated below (595):

H1: There is an association between [letter content features] and GP letter gradings.
H0: There is no association between [letter content features] and GP letter gradings.

A summary of main findings for all content feature tests is in table 6.4.4 on the next page.

Table 6.4.4 Summary of statistical findings for letter content features against GP gradings

Content feature (independent variable)	Present in successful letters	Present in unsuccessful letters	Test	Df.*	N	χ^2 value	Effect size - phi coefficient	P value	Outcome
Discharging physician (name & role)	86.8%	79.4%	χ^2	1	375	2.984	-.266	.084	Not significant
Reason for admission	99.1%	86.5%	χ^2	1	375	24.176	-.266	<.001	significant
Diagnosis	97.4%	74.5%	χ^2	1	375	44.386	-.353	<.001	significant
Tests/procedures performed	97.0%	74.5%	χ^2	1	375	41.841	-.343	<.001	significant
Investigation results	96.2%	77.3%	χ^2	1	375	30.194	-.293	<.001	significant
Medication names	84.6%	78.7%	χ^2	1	375	1.719	-.075	.190	Not significant
Medication dose & frequency	84.2%	78.7%	χ^2	1	375	1.437	-.123	.231	Not significant
Medication changes	61.5%	48.9%	χ^2	1	375	5.193	-.123	.023	significant
Reasons for changes	32.1%	18.4%	χ^2	1	375	7.606	-.149	.006	significant
Hospital plan/actions	70.5%	50.4%	χ^2	1	375	14.475	-.202	<.001	significant
Patient concerns/wishes	8.1%	8.5%	χ^2	1	375	.018	.007	.894	Not significant
Information to patient	38.5%	24.8%	χ^2	1	375	6.764	-.140	.009	significant
GP plan & actions	69.7%	53.2	χ^2	1	375	9.591	-.166	.002	significant
Acronyms (unexplained)	78.2%	86.5%	χ^2	1	375	3.482	.103	.062	Not significant
Medical jargon (unexplained)	71.8%	84.4%	χ^2	1	375	7.095	.144	.008	significant

**Df. = degrees of freedom*

Table 6.4.4 shows the results for statistical testing. As the cross-tabulations are 2x2, Yates' correction was used (590). The results show that discharging physician, medication names and dose and frequency, patient concerns and acronyms were not statistically significant and so there was insufficient evidence to reject the null hypothesis. The non-significance of these results may have been due to feature presence being too low for significance testing, inadequate sample size, or possibly due to GPs prioritising different elements of letters. Hence, this is not to say there are not patterns. Given that the p values for acronyms and discharging physician were close to significant, it is likely that a larger sample size may have made a difference. Concerning medication names and dose and frequency, the insignificant result was likely because letters with no medications were coded "no" due to the removal of the "N/A" code during piloting. This meant letters which were otherwise successful may have been coded "no" for medications in cases where this information was irrelevant (e.g. no medication) rather than overlooked. Thus, the coding system may have oversimplified codes for certain cases; this possibly produced insignificant results for features otherwise significant.

For the following content features, the results were statistically significant and so the null hypothesis could be rejected: reason for admission, diagnosis, tests/procedures performed and results and findings, medication changes and reasons, hospital plan, information to patient, GP plan and medical jargon. Thus, the proportion of letters with these content features graded successful by GPs were statistically different from the proportion of letters without these content features graded as successful by GPs. Therefore, it is unlikely that the rates of successful letters with these content features versus the rates of successful letters without these content features were this different from each other just by chance. It may be deduced that the presence of particular content features in discharge letters is associated with GP quality gradings. Hence, these features, according to GPs, are important for successful discharge letters. Contrastingly, unsuccessful letters were associated with the presence of unexplained medical jargon and possibly unexplained acronyms although the latter results were not statistically significant. In summary, the results detailed discharge letter features that were associated with GP-assessed more and less successful letters.

6.5 CL analysis of letter comments

Comments were typed or handwritten by GPs onto letter selection templates (appendix A). The complete dataset comprised 375 comments amounting to 4804 words. This is a relatively small dataset and the subsets of the data are smaller still, the “successful” comment data subset totalled 2093 words and the “unsuccessful” comment data subset totalled 2711 words. It was decided to use corpus linguistic methods to analyse the dataset and data subsets of this size because, as described in section 4.5.4 of chapter 4, CL software can rapidly produce outputs (407, 416) to include word frequency lists. Rapid generation of word frequency lists allowed comment analysis and comparisons between “successful” and “unsuccessful” comments to be quantitatively grounded. As suggested in previous CL literature (596), a quantitatively grounded approach meant that analysis did not rely on self-selecting or “cherry picking” words which were seemingly important and then establishing their importance but instead, using CL methods allowed words to be revealed which may have been otherwise “missed” or not known to be of importance. For these reasons, despite the small dataset, the decision was made to use CL methods to analyse the comment dataset and then to compare subsets (“successful” and “unsuccessful” comment sub-corpora) of that dataset.

GP comments were consolidated and categorised by successful/unsuccessful groupings in order to form two sub-corpora and then imported into *Antconc* (447) for analysis. The results for the top 25 most frequent content words for both sub-corpora are in table 6.5.1.

Table 6.5.1 Top frequencies for sub-corpora comment content words

"Successful" letter comments sub-corpus				"Unsuccessful" letter comments sub-corpus			
Rank	**No. of hits**	**Relative frequency ***	**Content word**	**Rank**	**No. of hits**	**Relative frequency ***	**Content word**
1	157	750	clear	1	41	151	gp
2	53	253	follow	2	40	148	follow
3	50	239	plan	3	37	136	diagnosis
4	44	210	diagnosis	4	36	133	patient
5	38	182	good	5	32	118	discharge
6	38	182	summary	6	29	107	medication
7	35	167	discharge	7	26	96	summary
8	34	162	gp	8	23	85	clear
9	33	158	information	9	22	81	unclear
10	26	124	medication	10	21	77	information
11	21	100	detailed	11	20	74	poor
12	20	96	investigations	12	18	66	letter
13	20	96	medications	13	15	55	advice
14	19	91	treatment	14	14	52	hospital
15	18	86	given	15	13	48	handwritten
16	18	86	management	16	12	44	admission
17	17	81	action	17	12	44	dose
18	16	76	changes	18	10	37	medications
19	16	76	concise	19	10	37	plan
20	16	76	history	20	10	37	started
21	15	72	clearly	21	9	33	action
22	13	62	advice	22	9	33	blood
23	13	62	patient	23	9	33	details
24	12	20	admission	24	9	33	Indication
25	12	20	details	25	9	33	investigations

* *per 10,000 words*

Comments were provided for 76.7% of letters. Of these, 189 comments related to "successful" letters (50.4%) and 186 related to "unsuccessful" letters (49.6%); this is a very even distribution of comments across groupings, more so than the grouping dispersion across the full letter sample (59.5% successful, 40.5% unsuccessful). Comment length was also reasonably even between the groupings although slightly higher for "unsuccessful" letters. The "successful" sub-corpora totalled 2093 words or tokens and 448 word types or token types with a range of 2-42 words per comment and an approximate average of 11 words per comment. The "unsuccessful" sub-corpora totalled 2711 tokens and 769 token types with a range of 2-51 words per comment and an approximate average of 15 words per comment (see appendix D for table comparing sizes of all thesis corpora). Notably, the variety of word usage (token types) was higher for "unsuccessful" letters.

Table 6.5.1 includes ranking, number of hits and relative frequencies (410) with a normalisation factor of 10,000 words. Analyses focussed on content words as opposed to functional items and therefore highly ranked functional items such as “to” “and” “of” were removed from results. The words in table 6.5.1 reflect the key themes and content features of “successful” and “unsuccessful” discharge letters as assessed by the participating GPs. The next more qualitative analytical step involved examination of concordance lines for the words in table 6.5.1 as well as close reading of the comments to manually highlight any “missed” key patterns. As the number of comments (375) was felt to be a manageable number, a saturation point (427) was not required and instead all comments and concordances were examined.

On first glance at table 6.5.1, it could be assumed that the highly frequent content items listed in the “unsuccessful” sub-corpora (e.g. plan, diagnosis…) are important drivers for what constitutes an “unsuccessful” letter. Notably, some of the words overlap such as “diagnosis” which appeared disparate. Crucially, two of the function items removed from the “unsuccessful” top frequency list were “no” (hits=91) and “not” (hits=64). This finding of frequent negation alongside inspection of concordances revealed that it was primarily the absence or insufficiency rather than the presence of these features that contributed towards the letters’ “unsuccessful” grading. Comparably, “successful” comment inspection and concordance examination revealed that letter successfulness was dependent not just on feature presence but the feature clarity. For example, if a diagnosis was omitted from a letter, it was nearly always graded “unsuccessful” but similarly if the diagnoses were “unclear”, the letter would also likely be graded unsuccessful. This was further evidenced by “clear” being ranked number one in the “successful” corpus (comment dispersion – 61%). Participants drew on this adjective to convey that features needed to be “clear” i.e. easy to find, appropriate and comprehensible in terms of legibility, language, and content. Common collocates of “clear” were “diagnosis” (LL=163) and “plan” (LL=175.2). This highlights the importance of the clarity or “clearness” of these items to GPs, which is further evidenced through the frequency of these items in the “successful” sub-corpus.

Following concordance and comment inspection for items in table 6.5.1, table 6.5.2 (overleaf) was generated; this summarises the features and qualities participants attributed to “successful” and “unsuccessful” discharge letters.

Table 6.5.2 Summary of comment analysis findings

Successful letter comments	**Unsuccessful letter comments**
• Diagnosis clear • Clear follow up plan • Clear medication changes & why • Clear action plan to include appropriate actions for GP and why these are required • Clear medication advice and recommendations moving forward • Clear clinical summary (what happened and findings) • Clear & detailed management plan • Clear results and interpretations of investigations/tests/ investigations clearly recorded • Follow up arranged • Helpful if medication changes highlighted in GP action so not missed • Clearly stated if no follow up or further action is required • Treatment given in hospital and treatment plan clear • Information in letter described as “relevant” and “concise” • Explicitly stated if no medications have changed - saves the GP time • Medications listed • Information given to patient is clear • Clear reason for admission • Name of responsible consultant and discharging physician and their role • Clear history • Letter legible or readable • All information described as “necessary” included in letter • If relevant, appointments organised • If relevant, home/social situation • Advised medication monitoring	• No diagnosis or no clear diagnosis • No advice to GP for ongoing management • No details of treatment (given and/or planned) • No discharging physician name and position • No or unclear follow up plan or arrangements • Incorrect information in summary • Use of uncommon acronyms without explanation • No indication of tests carried out or results • No medication details • Not clear why medication changed • Letter says no GP action but changes made to medications • No information about reason for admission • Advice/information given to patient not indicated or no information given to patient • No indication of whether follow up appointments have been made and if not, by whom, how, and when will this take place (e.g. outpatient appointment) • Letter described as “unclear” summary – no history and not apparent what happened in hospital • GP asked to make referrals hospital should have done • No medication dosing or duration • No discharge date • No patient address • Letter described as containing limited detail • Advice to GP described as vague and not helpful e.g. “be aware of admission and follow up as required” • Request for GP to follow up and act on investigations or to chase results • Key details omitted e.g. antibiotic given • Multiple addendums • GP asked to prescribe specialist-only medication • Counterfactual information e.g. wrong *NHS* number • Cause of admission not addressed • Letter arrived late to GP/took a long time • Illegible/ letter is handwritten and difficult to read • Medication not dispensed • Unrealistic blood test request for GP (generally timeline of one week or less)

The bullet points in table 6.5.2 are approximately listed by corpus prevalence. Keywords (positive, LL $p<0.05$) were generated using the sub-corpora as both target and reference corpora but this yielded no new findings. Features important to the participants for a "successful" letter included: reason for admission, diagnosis and follow up plan, medication changes and reasons why, GP actions, clinical summary, treatment and management plan, investigations and results, recommendations, and information provided to patient. Features particularly prevalent for an "unsuccessful" letter included: no or unclear diagnosis, no advice to GP, no follow up plan, no medication list or details regarding medication changes and why, no details of treatment, no advice or information given to patient or information provided to patient not indicated, use of unexplained acronyms, no indication of investigations conducted or results, illegible summary.

6.6 Discussion

Key findings

The letter sample provided a basis for describing and understanding patterns and differences between the content and features of GP assessed "successful" and "unsuccessful" discharge letters in response to RQ3 which asked, *"What content items do GP-assessed successful discharge letters contain?"* The inpatient discharge letters were coded as these represented the majority of the sample (375/489 – 76.7%).

As evidence continues to suggest that discharge letters are unsatisfactory (36, 41, 44, 48-55) (see chapters 1-5), it was theorised that adherence to content features set out in relevant policies (59, 61, 63, 569) would be somewhat low and that few letters would adhere to the inclusion of all content features. This theory was validated by results. Only one of the coded inpatient letters adhered to all guideline components (1/375, 0.3%). Excluding the categories of "jargon" and "acronyms", eight of the coded inpatient letters adhered to all guideline components (8/375, 2.1%). Descriptive statistics for the content coding suggested that uptake across individual categories was somewhat mixed. Uptake for inclusion of the content items "discharging physician name and role", "reason for admission", "diagnosis", "test/procedures performed", "investigation/examination findings", "medication names", and "medication dose and frequency" were 80% or higher. However, following Kind & Smith (135), assuming all letters should adhere to these guidelines and standards as they represent good or best practice, anything below full compliance may be considered a concern for patent safety or unsatisfactory in terms of discharge quality. Uptake for other content features was somewhat low to include: medication changes (56.8%) and reasons for these (26.9%), details of hospital planned or pending actions or an explanation of why none is required (62.9%), patient/carer concerns, expectations and wishes (8.3%), details of information given to the patient (33.3%) and required or recommended GP actions and management plan (63.5%). Moreover, although guidelines (59, 63, 69) recommend unexplained acronyms and jargon should be avoided or at least minimised, it was found that 81.3% of the sample contained unexplained acronyms and 76.5% of the sample contained unexplained medical jargon. This poses a substantial barrier in terms of letter accessibility for patients, which is an important issue in light of current good practice guidelines, which recommends copying letters to patients (62, 63).

Chi-square tests revealed statistically significant associations between GP graded "successful" letters and the following letter content features: "reason for admission", "diagnosis", "tests performed", "results of tests", "medication changes" and "reasons", "hospital plans/actions", "information to patient" and "GP actions". Additionally, a statistically significant association was found between GP "successful" gradings and the absence of unexplained medical jargon. As these features are associated with GP-assessed "successful" discharge letters, their inclusion should be prioritised both within forthcoming and future guidelines and standards and by hospital professionals when producing discharge letters. This particularly applies to the "successful" significant items which also had low frequency in the sample such as reasons for medication changes and GP actions. Kind *et al.* (138) have previously noted issues with low frequency of such "actionable components" like pending studies and GP actions. They suggest that omissions of these items can lead to patient readmissions. Current uptake of guidance relating to these items may be described as in an unacceptable state, particularly given the contextual findings of this study that these items are important to the successfulness of discharge letters according to GPs.

The 375 comments relating to the letters in the sample were analysed using CL. This analysis unveiled drivers of what makes a successful or unsuccessful discharge letter according to GPs. “Successful” drivers included: follow up plan, diagnosis, GP actions, medication to include changes and why, investigations as well as results, treatment, management recommendations, information given to patient, reason for admission, name and role of discharging physician, and clinical summary. In addition, “successful” letters tended to detail hospital follow up arrangements if applicable (rather than saying pending), and include explicit statements if no medications were changed or no GP follow up was required. Analysis of comments through frequency wordlists and concordance line inspection also provided insights into components or features of GP graded “unsuccessful” discharge letters. Drivers for “unsuccessful” letters included omissions of: GP plan/actions or advice to GP for ongoing management, details of follow up, treatment (given and planned), reason for admission, discharging physician details, reasons for any medication changes, diagnosis, new medications started (if any), information given to patient, admission information, and investigations and results. Moreover, comments revealed that “unsuccessful” letters may be in an illegible handwritten format, have unexplained acronyms, request inappropriate GP referrals or continuation of medications GPs cannot prescribe, and contain unrealistic blood test requests (timelines of less than one week from date of letter). “Unsuccessful” letters were often described as “unclear” or “poor” due to containing counterfactual or insufficient information.

Comment analysis confirmed but also expanded upon content analysis findings thus exemplifying the usefulness of mixing and triangulating methods. CL results revealed that it is not just the presence or absence of features that affects a GP’s assessment of letter quality, but how “clearly” the feature is communicated; it must be relevant, concise, and comprehensible. “Clear” items were comprehensible in terms of language (i.e. not uncommon acronyms) and legibility, as well as being contained within an appropriate section of the discharge letter.

The implications of these key findings are discussed in chapter ten.

Study considerations

As detailed in chapter four, the target was to recruit 30-50 GPs across 15 practices. However, in practice, a larger number of GPs were recruited (53 GPs across 18 practices). The primary reason for this was high GP interest in the study;

a few practices had to be turned down for participation due to feasibility. However, in spite of this, the letter sample (N=489) was smaller than initially planned (N=700). There were several reasons for this:

1. **GP time constraints** –GP practices set higher letter selection targets than they were able to achieve in practice due to restraints on their time. Additionally, some GPs withdrew from the study during data collection due to competing priorities.
2. **Study remuneration/insufficient incentives** – Some practices felt the costs received for taking part more suitably covered smaller numbers of letter selection and therefore a more minimal workload. The study was impacted by the extent to which management and GP partners supported study participation.
3. **Patient ineligibility and withdrawals** – The original selected sample was 502 letters. However, 13 letters were removed for not meeting inclusion and exclusion criteria or the patient withdrew their letter from the study; this left 489 letters.
4. **Recruitment strategy** – GPs were initially advised as per the protocol to select 14-24 discharge letters each. However, several opted to select the lower number of letters. This resulted in less letters overall than expected.

The sample was markedly skewed towards inpatient letters when in practice GPs receive a higher quantity of outpatient letters. This was despite the participant information for GPs emphasising that all types of discharge letter should be considered for inclusion. GPs may have chosen to select inpatient letters as they felt that they represented key “successful” and “unsuccessful” exemplars of discharge communication. Inpatient episodes are arguably more likely to involve more significant clinical events than outpatient episodes, and perhaps are more closely read than outpatient letters. This may have also led to GPs choosing not to include many outpatient letters. Another possible reason for the over-representation of inpatient discharge letters may have been because GPs misinterpreted the “discharge” element of the study criteria in the supporting study documentation. Overall, the sample and findings relate disproportionately to hospital admissions. This is considered throughout the thesis as the letter sample formed the basis for recruitment for other studies.

Although the sample size for letters was below target and is not necessarily reflective of discharge letters typically received in General Practice, the letter sample did exhibit diversity. As planned, the letter sample was heterogeneous, particularly in relation to patient demographics (e.g. age), reason for admission, specialties, and role of signing physician. GP Practices were recruited from North and South Warwickshire, Coventry and Rugby, and Herefordshire. Practices were spread across a range of urban and rural areas in the West Midlands with varying degrees of socioeconomic characteristics. For example, several of the participants worked in GP practices in South Warwickshire, an area that is relatively affluent with a high proportion of white middle-class residents (597). On the other hand, Coventry is comparably less affluent with a large black and minority ethnic population compared to the national average and other sub-regions within the research (598). The variety of localities meant that the patient registries across practices also exhibited diversity. Hence, this increased the diversity of discharge letters captured in the study.

The sample showed a slight skew toward “successful” letters at 59.9%; the target was for an even 50:50 distribution. This slight skew potentially indicates that GPs had greater difficulty identifying “unsuccessful” letters which may imply “unsuccessful” letters are less common. Alternatively, the skew perhaps indicates that GPs misunderstood the aim of the study was to build an even sample of “successful” and “unsuccessful” letters.

Study strengths and limitations are discussed further in chapter ten (section 10.6).

6.7 Chapter summary

This analysis has allowed description and quantification of features and content of a sample of discharge letters which had been selected by GPs as examples of “successful” and “unsuccessful” discharge letters. The findings of the content analysis (N=375) revealed features statistically significantly associated with “successful” letters. The CL comment analysis revealed that letter quality, according to GPs, is dependent not just upon feature presence or absence but the clarity and relevance of the feature to the specific case. The next chapter will expand upon findings from this chapter through examination of the GP interview and focus group qualitative data, which forms part B of study 2.

7. Study 2 (PART B) GP perspectives on hospital discharge letters: a CL analysis of GP interviews and focus groups

This chapter describes the findings of the GP interview/focus group data. The purpose of this part of the study (part B) was to gather rich data on GPs' views of discharge letters, drawing on their experiences of discharge letters, including the letters that they had selected for the study. A detailed methodological overview for study 2 can be found in chapter four. Briefly, GPs involved in letter selection (see chapter six) were invited to take part in an interview or focus group with myself; these could take place face to face or over the telephone. The interviews and focus groups were "narrative" (398, 399) in style with a single opening question around GP experiences of discharge communication (see appendix B for focus group/interview schedule and list of possible interview prompts).

Section 7.1 overviews the methods. Section 7.2 summarises the participant sample and respondent demographics. Section 7.3 overviews the corpus. The results and analyses are in Section 7.4 followed by a discussion in Section 7.5 and summary in Section 7.6.

A modified version of this chapter was accepted for publication in the *BJGP Open* on 12th November 2019. Sections of this chapter are modified extracts from the manuscript.

7.1 Methodology and methods: Corpus linguistics

Chapter four outlined that GP focus group/interview data would be consolidated to build a *corpus* in *Antconc* (447) for corpus linguistic (CL) analysis. Quantitative techniques in the form of keywords were used as the point of point of departure for identifying salient linguistic features and "patterns" (406, 461) in the data. The statistical calculation for sorting "keywords" by "keyness" was log-likelihood (LL) ($p < 0.05$). This statistical measure (log-likelihood, $p<0.05$) was also used for collocation analysis (see page 84 in section 4.5.4 for justification of choosing this statistical measure). The *BNC* Spoken (2014) (439) was used as a reference corpus for generation of keywords due to the comparable discourse mode (spoken). Where a longer co-text is required to contextualise important concordance lines, run-on quotations are used to provide context whilst adhering to thesis formatting requirements. Lemmatised word forms were synthesised manually for examination; the benefits and drawbacks of this in the absence of *corpus annotation* (408, 436) are discussed in section 8.5. Where relevant, *dispersion* (414, 458, 459) of linguistic items and patterns was considered (458, 466). "Themes" were used to group keyword results by salient meanings and patterns to focus analyses; themes emerged during preliminary analyses and were not exhaustive.

The analysis planned to actively search terms central to this research such as "discharge" if they seemingly did not present as frequent or key outputs. In addition, transcripts were hand-searched for any missed patterns. Hence, analysis triangulated different methodological approaches; triangulation in CL has been argued to increase analytical robustness and validity of findings (467).

Research questions (RQs):

RQ3: What content items do GP-assessed successful discharge letters contain?

RQ4: According to GPs, in what form do patients currently receive discharge communication, and why?

RQ5: According to GPs, should patients receive or not receive discharge communication, why and, in what form?

Aim:

To explore GP perspectives on why patients currently receive or do not receive discharge communication and how GPs think this process should take place in order to optimise patient experience and outcomes.

Objectives:

1) To gather GP perspectives on whether and how patients should receive communication through focus groups and interview data.
2) To transcribe and then analyse the GP focus group and interview data p utilising corpus linguistics techniques.

The mixed methods described above were designed to elicit findings for addressing the RQs. The quantitative keyword lists alongside hand-searching were predicted to allow pattern-identification of how GPs describe patients are currently receiving letters (RQ4), their views on whether patients should receive letters (RQ5), and content items important for GP-assessed “successful” letters (RQ3). The qualitative methods were anticipated to aid exploration and explanation of the quantitative findings to include, according to GPs, why patients are currently receiving or not receiving letters and the outcomes (RQ4), in addition to why GPs feel patients should or should not receive letters (RQ5).

7.2 An overview of the GP interview and focus group data

As detailed in chapter six, the sample comprised 489 exemplars of written discharge communication which were selected and screened by 53 GPs across 18 practices. As described in chapter four, the aim was for 90% of these GPs to take part in focus groups/interviews and hence the intended sample size was 48 GPs. In practice, 26 GPs (49%) participated from 13/18 practices (72%) with a median of 2 GPs per practice and a range of 1-6 GPs per practice; this included 20 individual interviews and 1 focus group with 6 GPs. Participant’s practices included one small practice (<5,000 registered patients), 7 medium practices (5-10,000 registered patients), and 5 large practices (10,000+ registered patients). Practices included: 1 Herefordshire practice, 1 North Warwickshire practice, 5 practices within South Warwickshire, and 6 practices across Coventry and Rugby.

The narrative opening question at interviews/focus groups was asked in light of previous work that the GPs had completed within the context of the research (chapter six). GPs were encouraged to have view of their selected letter sample and completed template to facilitate discussion. For cases where patients had been interviewed, these letters were of particular interest for quartet-building. Consequently, if a GP was short of time, they were asked to prioritise these letter cases. The running time for interviews/focus groups was flexible and most ran for 20-30 minutes as anticipated; they ranged from roughly 7-60 minutes creating around 12 hours recording time.

GP demographics are displayed in tables’ 7.2.1-4 over the following pages. This information was optional on the consent form and was provided by 23/26 GPs. Not all questions were answered by all GPs. Table 7.2.1 displays the results relating to participant’s ages. GP participants ranged in age (28-59 years, median=43) and GP experience. Table 7.2.2 shows that there were 15 female

(57.7%) and 11 male participants (42.3%). As seen in tables 7.2.3 and 7.2.4 respectively, there was some variation in regards to ethnicity (White/British 78%), and religion for which the most common response (35%) was Christian (or denomination). The sample characteristics are further discussed in sections 7.3 and 7.5.

Table 7.2.1 Ages of respondents

Age (grouped)	Frequency
Unanswered	4 (15.4%)
21-30	2 (7.7%)
31-40	6 (23.1)
41-50	10 (38.5%)
51-60	4 (15.4%)
Total	26 (100.0%)

Table 7.2.2 Gender as identified by respondents

Gender	Frequency
female	15 (57.7%)
male	11 (42.3%)
Total	26 (100.0%)

Table 7.2.3 Ethnicity as identified by respondents

Ethnicity	Frequency
Unanswered	3 (11.5%)
British	6 (23.1%)
Caucasian	2 (7.7%)
Indian	3 (11.5%)
Mixed	1 (3.8%)
White British	10 (38.5%)
White Caucasian	1 (3.8%)
Total	26 (100.0%)

Table 7.2.4 Religion of respondents

Religion	Frequency
Unanswered	8 (30.8%)
Christian	9 (34.6%)
Hindu	2 (7.7%)
Islam	1 (3.8%)
None	6 (23.1%)
Total	26 (100.0%)

A summary of the interview and focus group participant sample compared with part A (chapter six) is found in table 7.2.5. This shows that 13 out of a possible 18 practices took part and medium practices were slightly under-represented in the participant sample. Practices within the regions of Herefordshire and Coventry were also slightly under-represented compared with the original group of participating GPs from chapter six.

Table 7.2.5 Summary of GP sample characteristics

Characteristic	Original sample (chapter 6)	GP interview and focus group sample
No. of GP practices and GPs	18 practices 53 GPs	13 practices 26 GPs
Practice sizes	Small (<5,000 patients): 1 (5.6%) Medium (5-10,000 patients): 11 (61.1%) Large (10,000+ patients): 6 (33.3%)	Small (<5,000 patients): 1 (7.7%) Medium (5-10,000 patients): 7 (53.9%) Large (10,000+ patients): 5 (38.4%)
Practice localities	Rugby: 3 (16.7%) Herefordshire: 3 (16.7%) Coventry: 5 (27.7%) North Warwickshire: 1 (5.6%) South Warwickshire: 6 (33.3%)	Rugby: 3 (23.1%) Herefordshire: 1 (7.7%) Coventry: 3 (23.1%) North Warwickshire: 1 (7.7%) South Warwickshire: 5 (38.4%)

7.3 Corpus structuralisation and corpus features

Sinclair's principles (418, 599) of corpus building were consulted prior to and during corpus construction. To begin building the GP corpus, all interview and focus group data were first transcribed, audio-checked (439), and proof-read by myself. Identifiable data were removed or labelled generically e.g. [PLACE] and transcripts were labelled with ID codes. Self-transcribing increased data familiarity and improved transcript quality; places in recordings where there were sound issues (e.g. background noise) were often rectified through close-listening and memory-recall. However, generally, recordings were good quality and it followed that transcripts were too. After transcription, copies of transcripts were converted into plain text files for *Antconc* compatibility. Interviews were narrative (399) and so interviewer prompts were minimal and removed from text files in order to focus the corpus on GP views only.

As there was only a single focus group and the data relating to this had closer likeness to a "group interview" than a "focus group", interview and focus group data were analysed in the same way. Focus group data contributions were separated and subsequently labelled by contributor for corpus consistency of one text file per participant. The result was that each text file comprised a single GP participant viewpoint. It is acknowledged that disentangling the focus group in this way may have lost meaning in parts of dialogue where participants' conceptualised ideas across multiple turns. Finally, text files were imported into *Antconc* to form the GP corpus. The resultant corpus contained 26 text files categorised by participant (N=26); this allowed rapid participant comparisons and considerations of dispersion (410).

It is important to contextualise findings with corpus size, balance and representativeness (418, 434, 436, 439, 440, 600). The GP corpus was a *specialised corpus* (418, 601), which did not attempt to represent language as a whole. Subsequently, the corpus was for *specialised* (405, 418) rather than general use and so balance in terms of whole language representativeness (e.g. ratio written: spoken texts) did not apply (440). The total number of tokens (405) or words is 53,643 (see appendix D for table comparing thesis corpora). The total number of token or word types (405) is 2828; "the" counted as one token *type* although there may be multiple *tokens*. As interview lengths varied, so did the size of text files. Descriptive information relating to text file sizes is summarised in table 7.3 below which shows text file lengths ranged quite considerably (159-6308 words), with a median length of 1529 words.

Table 7.3 Corpus size descriptive statistics

		No. of tokens	**No. of token types**
Median (Q_2)		1529.00	389.50
Range		159-6308	82-952
Quartiles	(Q_1)	1016.50	283.50
	(Q_3)	3206.75	587.50

7.4 Corpus results and analysis

Following the methodological plan (section 7.1), keywords were the main point of departure for the analyses. The top 100 results are presented in table 7.4.1 on the next page. Many of the words in table 7.4.1 are associated with the semantic field of discharge communication.

Rank	**No. of hits**	**Keyness (LL)**	**Keyword**	**Rank**	**Hits**	**Keyness (LL)**	**Keyword**	**Rank**	**Hits**	**Keyness (LL)**	**Keyword**	**Rank**	**Hits**	**Keyness (LL)**	**Keyword**
1	447	4828.87	patient	**26**	89	577.88	useful	**51**	364	359.13	or	**76**	18	205.72	bloods
2	357	4184.93	discharge	**27**	538	576.18	be	**52**	82	350.04	often	**77**	25	204.72	procedure
3	205	2149.62	patients	**28**	517	570.34	think	**53**	46	318.79	results	**78**	49	204.51	important
4	238	1800.02	letter	**29**	50	546.73	admission	**54**	37	308.44	clinic	**79**	29	200.45	communication
5	158	1618.68	gp	**30**	746	540.72	so	**55**	93	304.69	whether	**80**	145	199.84	things
6	442	1608.99	um	**31**	75	525.73	copy	**56**	686	298.42	in	**81**	405	198.77	on
7	1085	1601.93	is	**32**	325	511.32	would	**57**	45	295.83	successful	**82**	182	192.79	from
8	131	1399.76	summary	**33**	129	481.58	sometimes	**58**	65	293.11	plan	**83**	41	192.03	necessarily
9	2047	1394.16	the	**34**	86	479.52	terms	**59**	65	279.79	its	**84**	179	191.82	very
10	184	1323.94	information	**35**	1175	471.95	a	**60**	1485	273.05	it	**85**	40	186.61	view
11	175	1191.29	hospital	**36**	196	459.48	their	**61**	26	256.74	handwritten	**86**	44	184.1	doctor
12	1479	1135.76	to	**37**	434	458.19	if	**62**	262	251.31	them	**87**	21	181.27	template
13	1597	1100.66	that	**38**	39	436.11	medications	**63**	45	249.21	action	**88**	287	178.4	with
14	527	903.61	are	**39**	38	434.97	outpatient	**64**	22	247.25	acronyms	**89**	157	177.75	more
15	97	892.44	medication	**40**	299	434.61	because	**65**	22	247.25	diagnoses	**90**	19	172.84	ct
16	82	882.22	diagnosis	**41**	81	428.94	written	**66**	60	234.25	given	**91**	30	171.66	appointment
17	1045	863.58	of	**42**	58	409.29	medical	**67**	186	229.31	say	**92**	25	171.59	relevant
18	996	855.12	they	**43**	59	406.47	helpful	**68**	165	225.92	which	**93**	518	170.06	but
19	718	833.84	have	**44**	462	395.7	for	**69**	19	225.41	renal	**94**	20	168.16	clinical
20	115	807.05	letters	**45**	323	391.65	as	**70**	41	223.91	aware	**95**	28	163.92	tests
21	1617	794.16	and	**46**	531	383.38	what	**71**	65	221.39	number	**96**	73	159.13	says
22	66	736.98	summaries	**47**	68	379.54	blood	**72**	430	217.89	there	**97**	34	156.88	clearly
23	111	671.51	clear	**48**	238	369.85	been	**73**	119	216.97	us	**98**	350	153.53	not
24	98	635.91	follow	**49**	33	366.19	discharged	**74**	28	214.64	gps	**99**	30	149.66	practice
25	236	620.63	has	**50**	33	366.19	investigations	**75**	70	207.92	understand	**100**	29	145.95	drugs

Table 7.4.1 Top 100 ranked keywords by "keyness" (log-likelihood (LL) p<.05) in GP corpus

“Themes” were used to group keyword results by salient meanings (see table 7.4.2 below); theme groupings were not intended to be exhaustive but revolved around the RQs. Consequently, some keywords are not discussed further, for instance, features of spoken discourse (e.g. discourse markers “so”, fillers “um” …). Function or grammatical words may tell us very little about the *semantic meanings* within the data. To gather such information, *content words* are generally more useful (440) and so function words were not considered. The below six results sections focus only on the words associated with relevant findings to the RQs. Throughout results, node words are in bold font.

Table 7.4.2 Keyword grouping themes relevant to research questions

Theme	**Research question relevance**	**Keywords**
Discharge letter content items	RQ3	Medication(s), diagnosis(es), follow (up), admission, renal, CT, drugs, investigations, results, plan, action, acronyms, blood(s), medical, appointment, clinical, tests
Patients	RQ4, RQ5	Patient(s), copy
Discharge letters forms/types	RQ4, RQ5	Summary(ies), template, outpatient, written, handwritten, letter(s)
Practitioners involved in discharge communication	RQ4, RQ5	GP(s), doctor(s)
Evaluation	RQ3, RQ4, RQ5	Clear, useful, helpful, successful, understand, important, relevant, clearly,
Hospital discharge	RQ3, RQ4, RQ5	Discharge(d), information, hospital, clinic, communication, practice

Collocation analysis was not carried out on all keywords. This analysis was not carried out on keywords where the frequency of the word was judged insufficient to warrant this analysis (frequency cut off set at 20). Furthermore, collocation analysis was only carried out for key words which were theorised to produce results and findings of relevance to the research questions. These included: “follow”, “GP(s)”, “plan”, “action”, “drug(s)”, “medication(s)”, “test(s)”, “diagnosis”, “investigation(s)”, “patient(s)”, “copy”, “successful”, “discharge(d)”, letter(s)”, “summary(ies)”, “doctor(s)”, “admission(s)”, “clear”, “helpful”, “results”, “handwritten”, “medical”, “clinical”, “appointment(s)”, “relevant”, “template”, “acronym(s)”, “written”. Due to thesis length restrictions, results of keyword collocation analyses which had no relevance to the research questions or which repeated other findings are not included in the presentation of results that follow.

Discharge letter content items

First of all, the fact that these words are displayed in the top 100 keywords may be interpreted to mean in response to RQ3 that, to the GP participants, all of these content items are germane to discharge letters. However, this is not the case; take for example, “renal”. Although “renal” is ranked 69th, there are only 19 corpus hits and 8/19 occurrences are in one text. Hence, it appears it is not so much that GPs consider “renal” information to be essential for all summaries, although it may be more crucial where the kidney function/renal tests are clinically relevant, but more so that “renal” is a specialised term utilised multiple times by a single speaker within a single text to describe a specific “renal” case; this demonstrates the importance of combining keyword-driven analysis with consideration of *dispersion* (459) . A similar phenomenon was seen with “CT” (N=19) and other imaging tests such as MRI (N=4), X-ray (N=9). GPs expressed a need for imaging reports when relevant.

As may be expected, the majority of the keywords within this theme of “content items” were nouns but there were a few exceptions. One exception was “follow” which was placed in this theme due to assumed collocate “up” in the sense of follow up plans post-discharge; this is a term frequently used in discharge communication (see chapters 1-6). This assumption was confirmed; as expected, “up” was the top ranked collocate for “follow” (LL=863.52). Moreover, “plan” was ranked third (LL=89.36). Out of the 98 occurrences of “follow” within the corpus, 80 can be accounted for with the term “follow up” (dispersed in 20/26 texts). This strong collocational preference is exemplified in figure 7.4.1 overleaf (L4-10).

Figure 7.4.1 Random 10 concordance lines for "follow" in the GP corpus

L1	that most of them I feel will be able to	**follow**	and a lot of the patients I feel as well
L2	(.) you know we have protocol to	**follow**	for urinary tract infections that we try
L3	expected that you pick that up and	**follow**	it up and arrange it (.) so if it said to
L4	comment of whether we need to	**follow**	up about why the fact why he
L5	it gives follow up for the plan for	**follow**	up and it gives a clear plan about the
L6	wasn't any action noted for the GP to	**follow**	up and it was a bit um (.) difficult in a
L7	for them that they are going to have a	**follow**	up and that they are going to get a
L8	as well (.) the other thing is outpatient	**follow**	ups some people do get seen but some
L9	section there and I think just the	**follow**	up plan in terms of who is going to be
L10	the patient leaves the hospital about	**follow**	up plans and medication so I don't

Interestingly, figure 7.4.1 lines show "follow/follow up" is used as a non-finite verb "to follow" (L1-2, 4, 6) and noun "follow up" (L5, 7-10). Hence "follow" appears to be both a content item "follow up plan" within a discharge summary and an action of what comes after discharge. "Follow up" was often talked about in terms of being "important" or a "necessity". Three examples, identified through hand-searching "follow" lines, from three different GP participants are below (L11-3):

L11	can do for patients care really and	**follow**	up is important as well and when
L12	they need to come back for certain	**follow**	ups and they still get confused
L13	that all parties are aware of what	**follow**	up is required so it doesn't slip through

Three lines were found where three participants described "follow up" with metaphors about "safety nets". In two of these lines, participants drew on and played with the idiomatic phrase "slip through the net" to stress the safety implications and importance of "follow up" (L14-15):

L14	are aware of what	**follow**	up is required so it doesn't slip through the net
L15	thing is outpatient	**follow**	ups some people do get seen but some go through the net

When GPs described actions required of themselves as the agent to "follow up", this was by five participants expressed as an obligation as a result of a lack of information or clarity or a generally "poor" or "inappropriate" letter rather than a choice of the GP (L16-21).

L16	re-checking it so yeah I needed to	**follow**	this up to check what degree of
L17	drugs are happening and what the	**follow**	up is and if they need me to do
L18	summary when the GP is asked to	**follow**	up lots of things fortunately that
L19	thinking oh we will get the GP to	**follow**	up (.) so I think that's
L20	is not appropriate that they ought to	**follow**	through that one themselves (.)
L21	it and I am supposed to be the one	**following**	it up so those are the ones that bother

Confusion of "follow up" agency was often construed with "wh-words" (see figure 7.4.2).

Figure 7.4.2 Random sample of lines of "[FOLLOW]" collocating with "wh-words"

L22	whether there is going to be	**follow**	up or further investigations make it very clear **who**
L23	section there and I think just the	**follow**	up plan in terms of **who** is going to be seeing the
L24	what is expected and **what** the	**follow**	care is so it's not a blanket of sorts whereby
L25	**what** is supposed to be happening	**following**	discharge including the patient (.) um as I
L26	time and **what** was going to	**follow**	on afterwards um which made it very clear
L27	but how they are going to be	**followed**	up and **what** is happening now so a plan of
L28	drugs are happening and **what** the	**follow**	up is and if they need me to do anything
L29	plan is or **what** the	**follow**	up plan is or are they going to be seen again in
L30	into hospital **what** we did **what**	**follow**	ups are arranged (.) what we would like you to

In L22-30, GPs conveyed a need to know "who" is following up and "what" the follow up plan is. This pattern is further rooted through lines where the follow up "plan" of "what" and "who" were explicit in the letter (see figure 7.4.3 which was generated through hand-searching [FOLLOW] line outputs from *Antconc*). These cases are framed positively by participants; co-text adjectives have positive connotations (e.g. "good" (L33), "positive" (L32), "clear" (L31)).

Figure 7.4.3 Example concordance lines of "[FOLLOW]" framed positively by four different participants

L31	the fact that the patient is going to be	**followed**	up by their predominant surgeon in
L32	on a positive note there was a	**follow**	up plan indicated so it wasn't that it
L33	and paediatrics as well are good at	**following**	up on their patients so I think in
L34	um and clear that there is outpatient	**follow**	up in 6 weeks time and also

"Plan" (N=65) and "action" (N=45) collocated and were employed with comparable meaning and lexicogrammatical structures to "follow" (see figures 7.4.4-5 on the next page). GPs accentuated the need to know "what" the action, plan or follow up *is* (L36, 39, 42, 48-51, 53) in addition to information regarding the agent, "who" is responsible for action (L43, 50, 54). Similarly, GPs conveyed views within "appointment" lines that if this information is unclear, this can lead to confusion and potentially "missed" appointments (see appendix G).

Figure 7.4.4 Random 10 concordance lines for "action" in the GP corpus

L35	about that it's just mainly the	**action**	for GPs sometimes I feel could be much
L36	what the plan is and that there is no	**action**	for us to do and that's appropriate so you
L37	medication list there wasn't any	**action**	noted for the GP to follow up and it was a bit
L38	amendments to the medication or the	**action**	plan and that can be very time consuming
L39	tests and to know what the	**action**	plan is going forward (.) so for a patient to
L40	um (.) yeah there is a blank in the GP	**action**	presumably there is no action needed it
L41	a brief synopsis and follow up with GP	**action**	so that is coming through quite clearly now on
L42	to the patient and what is the plan of	**action**	so that makes it a bad discharge summary and
L43	then immediately see if there is any	**action**	that is expected of you (.) so that is helpful
L44	and the investigations and the plan of	**action**	were all very clear (.) um as well as them

Figure 7.4.5 10 Random 10 concordance lines for "plan" in the GP corpus

L45	plan for follow up and it gives a clear	**plan**	about the dressing changes and that the wound
L46	not really sure that's a management	**plan**	as such um basically it just lists that all the
L47	been left out and discharged with no	**plan**	in place (.) and again it gives us something as
L48	how they treated it and what the	**plan**	is but it doesn't give a full information about
L49	as to what is going on or what the next	**plan**	of action is (.) albeit the letters seem to be a bit
L50	useful (.) I was given quite a clear	**plan**	of what they are going to do (.) also advice for
L51	done well there is a clear management	**plan**	so that everybody knows what is supposed to
L52	was clear the clinical summary and	**plan**	was also clear with good documentation of the
L53	it was very clear in terms of what the	**plan**	was with this individual there was (.) um a nice
L54	there and I think just the follow up	**plan**	in terms of who is going to be seeing the

"Drugs" (singular N=11; plural N=29) and "medications" (singular N=97; plural N=30) are near-synonymous medical terms and so were overviewed concurrently. Random lemma samples are in figures 7.4.6-7 (L55-74). These terms were dispersed in 18/26 texts.

Figure 7.4.6 Random 10 concordance lines for lemma "[MEDICATION]"

L55	problem with is it there is changes in	**medication**	and it's not documented well so that
L56	obviously the lack of information about	**medications**	would be useful if for that to be on
L57	as well if there were set having both	**medications**	and then the other one was a
L58	of them are on ridiculous numbers of	**medications**	and we get a list of certain
L59	section was confusing (.) putting the	**medication**	at the end of the discharge
L60	and just hadn't got a clue what	**medication**	she was supposed to be taking
L61	clear with good documentation of the	**medication**	changes that took place um I have
L62	know just a one line as to why just if a	**medication**	has been stopped and why it would
L63	enough detail or a complete list of	**medication**	in it (.) the others at least that have
L64	very quickly so the information about	**medication**	is very helpful whether it is new or

Figure 7.4.7 Random 10 concordance lines for lemma “[DRUG]”

L65	patient is on or going through all of the	**drugs**	and making sure they have not added
L66	they have both got reasons why	**drugs**	have been started or stopped they have
L67	(.) sometimes it is not clear why	**drugs**	have been stopped or started and it just
L68	tablet dosed up and then no other	**drugs**	issued it is just really clean and straight
L69	example [LETTER ID] they have put no	**drugs**	issued well that is brilliant because that
L70	is a patient on nine or ten different	**drugs**	it is very clear at the bottom of the letter if
L71	particularly wanted adding on was the	**drugs**	started and drugs stopped and the reasons
L72	because (.) the diagnosis and the list of	**drugs**	stopped and why but then we noted that
L73	a repeat summary so that all of the	**drug**	changes are in print rather than just jotting
L74	more sense (.) and it says started on	**drug**	which might be expected to be up titrated

The random samples show these words were often spoken about in terms of “what” is the discharge medication (L57, 60, 68-69) and, if relevant, “what” changes have been made (L55, 61, 64, 67, 71, 73) and “why” (L62, 66-7, L71-2). The samples display that medication/drugs were often discussed in terms of being “started” (L64, 66-7, 71, 74), “stopped” (L62, 66-7, 71-2) and “changed” (L55, 61, 73). “Stopped” was ranked as the 3rd collocate for “drugs” (LL=57.17) and 4th collocate for “medication” (LL=42.76). “Started” was ranked as the 7th collocate for “drugs” (LL=37.56), and “medication” (LL=57.59). “Changes” was ranked as the top collocate for “drug” (LL=33.74), and “changed” was ranked 4th for “medications” (LL=44.92). Manual inspection of all concordance outputs for these collocates revealed that medication information was often framed as required by GPs but specific details in terms of “changes/stopping/starting” and reasoning for these actions was described by five participants as “useful” or “helpful” for both GPs and patients (see figure 7.4.8 L75-83).

Figure 7.4.8 All corpus line outputs for “medication(s)”/ “drug(s)” co-occurring with useful/helpful

L75	information about	**medication**	as well that can be **useful** for the patient to
L76	or changed or new	**medications**	being started for instance I think it would be very **useful**
L77	regarding the	**medication**	I think would be the most **useful** thing that they
L78	check so I think the	**medication**	is the main bit that is **useful** to us as GPs and also
L79	information about	**medication**	is very **helpful** whether it is new or started or
L80	knowing the actual	**medication**	that was given would have been **useful** (.) um
L81	for the GP regarding	**medication**	which is also very **useful** otherwise I feel like the
L82	information about	**medications**	would be **useful** if for that to be on there if
L83	the last year ago of	**drugs**	started and stopped and I think that is **useful**

Predictably, as the words “investigation(s)” (singular=9, plural=33) and “test(s)” (singular=26, plural=28) denote assessment and inquiry, they showed semantic preference for assessment outcomes, namely “results” (concordance samples are in figures 7.4.9 and 7.4.10).

Figure 7.4.9 Random 10 concordance lines for lemma “[INVESTIGATION]”

L84	also put the copy of some of the	**investigations**	and also what was being planned for
L85	there is a need for further	**investigations**	and he has got those two follow up
L86	carried out and the results of	**investigations**	and I say the diagnosis as a result of the
L87	like and then also the follow up	**investigations**	and plans so that we knew that were
L88	blood results or any notes of	**investigations**	that were carried out or any treatment
L89	and the results of these	**investigations**	was clearly documented and the
L90	summary was really good and	**investigations**	were highlighted and there was a GP
L91	up were very clear as to what	**investigations**	were now pending to try and reach
L92	yeah if they have had an	**investigation**	or some commencement of treatment
L93	have said haematuria awaiting	**investigation**	to clarify okay then we would think

Figure 7.4.10 Random 10 concordance lines for “test(s)”

L94	it is important you have your blood	**test**	checked on day three and day five you
L95	but really if they need a blood	**test**	done in two days and they know it is
L96	patient and it says check blood	**test**	in a week or two weeks or whatever (.)
L97	in addition he took an extra thyroid	**test**	in that clinic so that is done and the
L98	make this ideal I would want blood	**test**	results and a full ultrasound scan report
L99	expected them to have had blood	**tests**	and to have some of those results (.)
L100	so that we don’t duplicate	**tests**	and to know what the action plan is
L101	tells you he has had a CT and blood	**tests**	but doesn’t tell you the results (.) but at
L102	through that says please arrange blood	**tests**	for the time *incomprehensible* and
L103	we can’t access the hospital blood	**tests**	Reports (.) I think that was it for that

All concordances for investigation(s)/test(s) revealed that participants favoured detail relating to: what investigations/tests have been run (L84, 88-93, L101), whether these need following up and if so by whom (L85), and clear results for investigations/tests (when known) (L86, 89, 98-99, 101, 103). In lieu of results being available, GPs had preference for details of whether results are pending and if so how to obtain these results (L91, 93, L101). Concordances for lemma “[RESULT]” (N=61), revealed no further patterns of note (see appendix G for sample).

Summaries were often described as “good” or conceptualised as “successful” if investigation and test information was “clearly documented” on the discharge summary. Comparably to “follow”, participants sometimes employed "wh-words" like "who" and "what", to emphasise important elements and where clarification may often be needed (L84, 91). Some GPs explained the heightened need for clear test/investigation results as they cannot necessarily access these if they are not communicated in the letter, depending on the practice locality and care record operating system. Additionally, in L100, a participant explains that clear test information can avoid unnecessary test duplication and hence preserve resources.

As exemplified in figure 7.4.10, "test(s)" had strong collocational preference for "blood" (LL=180.58). This was due to "blood" performing a pre-modifying function for referring to a common clinical test, "blood tests". Sometimes participants drew on metonymy to refer to these tests with the elliptical form "bloods" (N=18). Participants expressed issues with letters which requested GPs to run blood tests imminently after patient discharge e.g. *"two days" "day 3"*. Participants conveyed concerns about the pragmatics and safety implications of these imminent requests (e.g. *"unrealistic" "the blood tests are not going to get done"*) particularly as the GP may have not received the letter by the time the tests are due and moreover the difficulties within primary care of providing a rapid blood test service.

As expounded in chapter two, "diagnosis" is often claimed to be the most important discharge summary item. This claim is supported by the corpus findings. Firstly, this is substantiated by the high frequency of "diagnosis" in the corpus (lemmatised N=106, dispersion 21/26 texts -81%) (see figure 7.4.11 for random sample of "diagnosis" lines).

Figure 7.4.11 Random 10 concordance lines for "diagnosis"

L104	what is successful is having a clear	**diagnosis**	(.) clear discharge medicines and not just
L105	where they aren't aware of their	**diagnosis**	in which case you can't obviously give
L106	record as a sort of a background	**diagnosis**	(.) perhaps it should be (.) that's another
L107	said that putting the MRI in the	**diagnosis**	section was confusing (.) putting the
L108	down the line (.) so I think the	**diagnosis**	should have been you know either chronic
L109	findings also and the working	**diagnosis**	so that we knew if the patient came with
L110	really very clear quite what the	**diagnosis**	was and what the admission reason was
L111	discharge letter in that the	**diagnosis**	was clear the clinical summary and plan
L112	letter here patient aware of	**diagnosis**	well you wouldn't be able to give them a
L113	um obviously serious uh difficult	**diagnoses**	whether they are terminal or cancer

Participants commonly indicated that they believe diagnostic information is a requisite for discharge communication. “Diagnosis” had colligational preference for evaluative adjectives, both in attributive and predicative position, for example, the top content collocate was clear (LL=54.58). Across “diagnosis” lines, letters described as having a clear and accurate diagnosis were judged as “successful” (figure 7.4.11). Thus, it may be deduced that, according to the participants, letters’ successfulness in part hinges upon “diagnosis” information (e.g. 111) or a “working diagnosis” when results etc. are pending. Conversely, letters described as “unsuccessful” or with other negative adjectives (e.g. L107) often contained an “unclear” or a lack of diagnosis.

GPs found it useful when the letter clarified the patient’s knowledge of their diagnosis. A few participants contemplated whether medical terminology to elucidate diagnoses may need to be complemented by lay explanations for patient. Searching for “lay” had 11 hits in 5/26 texts. Concordances had two main patterns: participants who felt jargon could feasibly be explained in letters using lay terms for patients, and participants who felt use of lay terms to explain all letter terminology would be too time-consuming or not feasible (“lay” sample in appendix G). One participant expanded to articulate the importance of patient-friendly explanations and suggested that use of medical terms *only* can be alienating for patients and possibly make them feel *“inadequate and uncertain”* and that it *“reinforces the fact that medicine is a scientific and complicated and you have got to be clever to understand it…”*

References to “acronym” were not frequent (N=27; dispersion 6/26 texts) but the word seemed to have negative semantic prosody (see figure 7.4.12 on the next page L114-23 for an illustrative sample of concordance lines produced by hand-searching patterns for “acronym” lines). Negative semantic prosody is evidenced through co-occurring lexical items which hold negative meanings or connotations (e.g. “[AVOID]” (L114, 117, 123), “bad” (L114), “wrong” (L119). Thus, it may be inferred that GPs do not favour acronyms in discharge letters. Interestingly, some of the participants suggested acronyms should be avoided both for the sake of the patient *and* themselves (L120-3).

Figure 7.4.12 Illustrative 10 concordance lines from five participants for "acronym"

L114	from [LOCATION] but yeah I mean	**acronyms**	are generally a bad thing aren't
L115	ideally you want to be avoiding	**acronyms**	as far as possible um and
L116	it was CRT there are quite a few	**acronyms**	in there but I think I understand
L117	be more clearly set out well I think	**acronyms**	should be avoided where ever
L118	typing and I know there are some	**acronyms**	that could be applied to more than
L119	a bar in the occasional letter or an	**acronyms**	that has gone wrong or mistakes
L120	we don't always understand the	**acronyms**	that they use and I think on a
L121	with date is all on there um (.) one	**acronym**	I don't know myself so not sure
L122	or could you clarify what this	**acronym**	stands for because we are not
L123	they ought to avoid using any	**acronyms**	really for clarity not just to the

Patients

"Patient" was the top corpus keyword (lemmatised N=704, 26/26 text dispersion, hit range 1-103). The lexical item was employed with a wide range of usages and meanings (see figure 7.4.13 for random sample). Relevant RQ4 and RQ5 collocates were: "copy" (LL=120.82), "letters" (LL=100.03), "friendly" (LL=95.75) and "information" (LL=84.42).

Figure 7.4.13 Random 10 concordance lines for lemma "[PATIENT]"

L124	because sometimes things (.)	**patients**	come out and maybe something has
L125	I haven't had any problems where	**patients**	Haven't received them or where they
L126	also perhaps to highlight what the	**patients**	responsibilities are because it says on
L127	but actually these are	**patients**	who might be vulnerable on their
L128	sometimes it is not obvious (.) if the	**patient**	has been copied in (.) sometimes I am
L129	and what they communicate to the	**patient**	I think it would be useful to have a
L130	protocols making sure that the	**patient**	is aware of the information that is
L131	they know our limitations and our	**patients**	limitations (.) so when they say do Us
L132	of the nature of the system (.)	**patients**	move from ward to ward from team to
L133	be good to spell it out it is for the	**patient**	otherwise you don't really quite know

Across "patient(s)" lines and relevant to RQ4, participants noted inconsistency of patients receiving letters in addition to uncertainty about the prevalence of this practice (see manually selected illustrative quotes in figure 7.4.14 on the next page). However, it was noted by few that this uncertainty phenomenon may apply less for outpatient discharge letters. One participant suggested a patient copy receipt "click box" could be used in order to resolve and monitor inconsistencies.

Figure 7.4.14 An illustrative selection of quotations from eight different participants where they refer to inconsistency or uncertainty around patients receiving letters

"…sometimes patients will get a copy of that and sometimes they won't"

"It may be that every single patient gets a copy…I just don't know whether that happens"

"…and they don't know that we have already got a copy so certainly some patients are receiving them (.) I don't know whether they all are or not"

"My impression is…that most patients don't get their letters (.)"

"I think it is just variable what information patients come out of hospital with…"

"There is an awful lot of variation across service isn't there I mean I'm sure between hospitals and also within hospitals and even within departments and even different consultants some choosing to share information with patients and others not so there doesn't seem to be any unified approach to it"

"My experience of patients receiving written discharge is that it is variable and does not always happen"

"Patients often don't get any discharge communication themselves um its very common for patients to come and see us following a discharge and for them not to have been given at all"

Generally, relating to RQ5, collocation lines for "patient" with "copy", "letter(s)"," information" and "friendly" (see samples in appendix G) exhibited GP favourability for patients receiving letters, even in some cases where it had not taken place:

> “*…it would be entirely appropriate for the patient to see a letter of that nature but I notice the consultant hasn’t copied it to the patient*”

GP favourability was amplified by surrounding evaluative adjectives with positive connotations: “helpful”, “good”, “useful”, and “handy”. One participant noted the patients’ right to view their letter, *“I think it is theirs”* and another articulated that patients receiving letters should be the “default”, unless there is risk of harm. One GP speculated on hypothetical benefits in regard to a specific case. Another GP recounted a recent anecdote where a patient having a copy of the letter remedied a situation where the GP had not and thus saved time:

> “*I just had a patient…and she has been in hospital with …this and that and the other and the discharge letter hadn’t come to us and luckily she had one and brought it in”*

Relating to RQ5, participant concerns were often specific to patient understanding and harm, and difficulties of producing a letter suitable for the needs of GP and patient (see manually selected illustrative quotes in figure 7.4.15 below).

Figure 7.4.15 An illustrative selection of quotations from three different participants where they expressed concerns about patient letters

“*…the discharge letters are written by a doctor for a doctor to read so they are written in medical speak so the fact that the patient gets a copy…can sometimes be a bit difficult*”

“*The discharge letter is there as a succinct conveyance of information. It is not a patient education letter as such so if you were to try and take every bit of medical jargon out then it becomes a patient education letter which is then going to become less useful for the clinician because you are going to have to wade through a lot of excess information*”

“…but then it can be tricky with a lot of the clinical information whether that might cause them more concerns if they don’t understand necessarily everything that has been written”

A few participants referred to possible solutions in relation to these issues and concerns to include adaptions for the patient “copy” to increase clarity and usefulness of the letter to the patient as well as reducing potential risk of harm, *"…so that it wasn't going to produce more anxiety".* These adaptions included providing verbal discharge counselling, giving the patient an abbreviated form, and explaining jargon and/or utilising lay terms, e.g., *"…lap right hemicolectomy just to put bowel surgery"* (hand-searched examples are in figure 7.4.16).

Figure 7.4.16 An illustrative selection of quotations from four different participants where they suggested possible solutions for patients receiving letters

"I don't know whether…there would be a way of producing a patient friendly copy and a doctor copy of the same clinical information if it was just done automatically with a computer programme or something (.)"

"it would be really helpful actually for somebody to sit down with the patient and a copy of their discharge summary before they leave and just go through it with them"

"If there is a possibility of at the point of discharge a medical member of the discharge team could maybe go through the discharge summary if their patient is given a copy on discharge which I think would be a helpful thing to do…"

"I think a box at the bottom that says information for the patient and then a line with a layman's explanation about it"

Several participants raised ethical issues about patients receiving letters if their diagnosis has not yet been disclosed or the patient does not want to know it:

> *"…well you wouldn't be able to give them a copy of their discharge letter if they weren't aware of their diagnosis (.) Hopefully most patients are…"*

However, two participants clarified that this phenomenon is "rare":

"I suppose the only time would be (.) If the patient didn't want to know about their diagnosis which is becoming more and more rare for that to happen…"

> "*I think it is very rare these days for patients to be kept completely in the dark about their diagnosis*"

Three lines were found where GPs reflected on the impact of prior communication on patient understanding and discharge experience. Within these lines, GPs seemed to view adequate verbal information to be pivotal to patient understanding of their letter and more positive outcomes, for example:

> *"… then sometimes patients are sort of learning for the first time about something um when they read it in the letter that they have taken home (.) And that is maybe more down to the poor communication before they have been discharged as opposed to it necessarily being inappropriate for it to be in the letter…"*

Some participants argued that a discharge letter should not be the sole source of patient information, *"it is one piece of patient information not the only piece"*. One summarised:

> "*If patients are not understanding their discharge letter it's because they have not had the counselling to go with that discharge letter*"

Two different GPs contemplated "best" or "good" practice, one example of this is below:

> *"…good practice best practice would be that when the letter is being done from the hospital everything is discussed with the patient at that point…"*

There were 10 occurrences for "patient(s)" collocating with the adjective "friendly" (see appendix G for full sample). Without looking at concordance lines, this collocation may be misinterpreted to be cases where GPs are positively evaluating patients. However, this is not the case. Within the corpus, and in the wider discourse of GPs, "patient friendly" is deployed as an exophoric compound used to describe a letter or communication-style which is appropriate and useful for patients rather than a patient who is "friendly". Thus, this seemingly unusual collocate intrinsically demonstrates the value of concordance inspection.

Evidence of resource implications or concerns of the practice of patients receiving letters were found. One participant clarified that although GP resources (e.g. time) may need to be used to explain inpatient letters received by patients, they did not view this as a "waste":

> *"…often it has been a significant event to have needed a hospital admission and very often when they come in it's nice to touch base with them to get their understanding of it, to explain what you want to do as the follow on going on from there and I wouldn't call it a waste of time (.) The outpatient letters are slightly different…"*

"Copy" had 75 hits in the corpus (see appendix G for random sample). Highly ranked relevant collocates for "copy" included "letter" (LL=101.74) and "patient" (LL=87.20) and subsequently "copy" lines exhibited strong patterns to be used in reference to patients receiving letters. In line with RQ5, many lines demonstrated participant's approving or articulating the usefulness of this practice (illustrative sample produced by hand-searching *Antconc* output "copy" lines in figure 7.4.17 L134-43). GP deemed uses of a patient "copy" included: a sense of patient inclusion, a memory-aid (e.g. what happened, follow up plan, and medication list), and a physical record of the admission, particularly if the patient sees a team who do not have access to the letter e.g. OOH GP.

Figure 7.4.17 Illustrative sample of "copy" lines from six participants where they express favourability

L134	gold standard should be that they all get a	**copy**	of the discharge letter (.) yeah (.) So
L135	(.) included if you give or send them a	**copy**	of (.) of it and yeah I think the
L136	is very useful (.) so if patients have a	**copy**	and you are going out to visit them or
L137	it could be useful for them to have a	**copy**	from the medication point of view (.)
L138	it is very useful for them to have a hard	**copy**	of that in their hands (.) so my
L139	at all unfortunately and I think a printed	**copy**	of that which they could have in their
L140	then it's helpful for them to have their	**copy**	of the letter or to take to A and E if
L141	would be good if the patient is getting a	**copy**	of this to say renal nurse and
L142	the admission it gives them a formal	**copy**	of what their follow up should be and
L143	if I see a patient I will print them out a	**copy**	to keep with them you know so if they

Hand-searching "copy" lines found the importance of "choice" for patients receiving letters was emphasised and conveyed by two participants within "copy" lines (L144-7):

L144	to ask the patient if they want a	**copy**	because it is a confidential document
L145	patient should be asked do you want a	**copy**	before they are discharged and a
L146	and then I say would you like a	**copy**	of your letter and they say yes please
L147	and should be asked do you want a	**copy**	that we can print out for you and

Discharge letters forms/types

"Written" (N=81) and "handwritten" (N=26) denote similar meanings as the latter appears to be a subordinate of the former. Across lines, patterns emerged for "handwritten" forms of communication to have issues with legibility and clearness: *"I don't know what the hell it says" "often it's illegible"* (also see figure 7.4.18, L148-57). Furthermore, "handwritten" forms were talked about as a thing of the past (L149, 151, 153, 156) or something to be "avoided" (L150-1). Thus, it is conspicuous that handwritten forms were not favoured.

Figure 7.4.18 Random 10 concordance lines for "handwritten"

L148	from day surgery unit (.) um it is	**handwritten**	but it's very clear writing (.) um it
L149	easier to read and access than a	**handwritten**	clinic note which are pretty rare now
L150	helps having it typed and avoiding	**handwritten**	communication certainly helps (.) um
L151	of (.) well I suppose the days of	**handwritten**	letters probably are they ought to be
L152	was a junior doctor we used to do a	**handwritten**	note that went with the patient just
L153	behind on the game still sending out	**handwritten**	notes that don't give us that much
L154	(.) sometimes they will bring a	**handwritten**	one and then to be honest I don't
L155	I think that is better but the quick	**handwritten**	ones are often better than nothing if
L156	get you know gone are the days of	**handwritten**	photocopied stuff that you couldn't
L157	legible makes all the difference to a	**handwritten**	one (.) I mean obviously as a junior

"Template" was not a frequent item in the corpus (N=21, dispersion 6/26) (figure 7.4.19 contains sample). Contrastingly to "handwritten", "template" forms often co-occurred with positive evaluative adjectives, for example, "good" (LL=36.11). Thus, within the corpus and relating to RQ5, "template" appears to have positive semantic prosody and therefore it may be conjectured that GPs tend to favour or positively assess "template" forms of discharge communication. Nonetheless, two lines were found where two participants suggested that the template structure imposed limitations or negatively impacted quality (L161, 163).

Figure 7.4.19 Random 10 concordance lines for "template"

L158	see it's been written according to a	**template**	and again its very clear its very
L159	just to say I think it is a good	**template**	(.) and it has the relevant information I
L160	missed and that it provides a good	**template**	for a summary (.) so this is on a
L161	admission (.) um and um and so the	**template**	has been filled out incorrectly I mean
L162	dosage and timing so yeah I think the	**template**	here is a good template there is
L163	less successful I think it's where the	**template**	may have fallen down and its missing a
L164	of their work for them I quite like the	**template**	ones if I'm honest they are better
L165	you know if you are following the	**template**	the drugs on discharge were quite
L166	I think the template here is a good	**template**	there is another one here which is an
L167	in are filling them in to a standard	**template**	which is helpful because it reminds

Practitioners involved in discharge communication

The lemmatised form of “GP” had 177 hits in the corpus across 24/26 texts (see appendix G for sample). Top collocates for “GP(s)” were all function words except “action” (LL=197.350) and “actions” (LL=177.97). Concordances unveiled a colligational pattern for “GP” to be followed by to-infinitive verbs (19/177 lines). This syntactic or lexicogrammatical pattern seems to be in keeping with the word’s semantic preference for “action”. Random samples of “action” collocations and “to-infinitive” colligations for “GP” are in figures 7.4.20-1.

Figure 7.4.20 Random sample lines for “GP” collocating with “action” (participant n=6)

L168	are because it says on their	**GP**	**action** but it should maybe say on
L169	(.) so yeah again it says **actions** for the	**GP**	ortho-geriatrician (.) again you kind of
L170	very clear and it was under **actions** for	**GP**	to please continue with this (.) got very
L171	bottom of the discharge letter **actions** for	**GP**	(.) you know follow um I don’t know
L172	(.) and then the bit at the bottom says	**GP**	**action** so you can then immediately
L173	this for them (.) when it comes to	**GP**	**action** the other thing that can annoy
L174	list there wasn’t any **action** noted for the	**GP**	to follow up and it was a bit um (.)
L175	that (.) um (.) yeah there is a blank in the	**GP**	**action** presumably there is no action
L176	were carried out and any **action** for the	**GP**	to carry out (.) I do have some notes I
L177	and then later on in the letter there is a	**GP**	**action** box which is a good part of the

Figure 7.4.21 Random sample lines for “GP” colligating with to-infinitive (participant n=9)

L178	very clear and it was under actions for	**GP**	**to** please continue with this (.) got very
L179	Haven’t asked us to do anything (.) um	**GP**	**to** review its always GP to review um (.)
L180	subheadings make it very clear for us as	**GPs**	**to** get the important information very
L181	were carried out and any action for the	**GP**	**to** carry out (.) I do have some notes I
L182	list there wasn’t any action noted for the	**GP**	**to** follow up and it was a bit um (.)
L183	they put continue but sometimes they put	**GP**	**to** review and it’s you started the
L184	to be up titrated but no reference for how	**GP**	**to** do this yeah we said it was
L185	biggest bug bears is we get letters for	**GPs**	**to** chase up results and to act if such
L186	its them thinking oh we will get the	**GP**	**to** follow up (.) so I think that’s fine it
L187	very clear section that says actions for	**GP**	**to** consider and I think there should

GP action and to-infinitive lines may be hypothesised to be semantically similar as both centre around “doing”. However, within the corpus, “action” when collocated with “GP” often referred to the “GP action” content item within the discharge letter. On the whole, participants appeared to favour inclusion of this item. Nevertheless, participants did articulate potential ambiguity issues when the box is left “blank” or contains unclear or inappropriate “actions” such as where GPs are being asked to perform tasks that the hospital should have undertaken:

> *“…what needs to stop is some of the GP actions can be inappropriate if they are asking us to chase something up or refer onto somebody that should have been done in hospital”*

GP-action and to-infinitive lines included references to the idea of a parallel patient action/information box for contexts where patients receive letters:

> *“There is a risk that they will read it and be panicky but maybe if they had a section that said GP action where it said patient instructions or you know patient summary or something that was in more (.) More you know understandable language”*

The lemmatised form of “[DOCTOR]” had 67 hits in the corpus across 14/26 texts; this is noticeably less hits than that of GP and patient. Within “doctor(s)” lines, five participants raised potential problems and trepidations around juniors writing discharge letters (example lines, identified through hand-searching, are in figure 7.4.22 L188-92). Moreover, particular concerns were asserted by participants, in relation to juniors and otherwise, where the patient may not be known to the doctor writing the letter (L193-7).

Figure 7.4.22 Lines where five GPs expressed concerns about “doctors” writing letters

L188	sometimes it is because brand new	**doctors**	are the ones writing the letters and
L189	than the medical bit by junior	**doctors**	(.) some junior doctors do extremely
L190	aren’t clear cut and junior hospital	**doctors**	don’t always necessarily have a really
L191	hospital doctors particularly junior	**doctors**	haven’t really learnt that skill of putting
L192	allowed to say that anymore junior	**doctor**	who understands what we need and
L193	that tells us (.) that the poor junior	**doctor**	writing the letter has never seen the
L194	good old days when I was a junior	**doctor**	we would follow them through from
L195	summaries now are produced by a	**doctor**	who has never even seen the patient
L196	to be on the shift then the junior	**doctor**	writes the letter even if they haven’t
L197	to ward from team to team junior	**doctor**	go on shift and off shift and if it

Two lines expressed difficulties when the letter author cannot be identified (L198-9):

L198	procedure was and you can’t identify a	**doctors**	name on the letter I don’t think there
L199	poor because it’s not clear who the	**doctor**	was and so on (.) and as we all know if

One participant suggested a potential solution to issues with juniors writing letters in that the letter does not necessarily need to be produced by a doctor;

they specified the individual, *"just needs to be somebody who has enough of a grip of what changed and what is planned"* and so could be a ward clerk, nurse, HCA etc. Another participant contextualised the conflicting demands on GPs and hospital doctors and the impact of this on communications; they said junior doctors may be ignorant of General Practice systems which can be *"a bit frustrating…"*

Evaluation

"Clear" was the most frequent adjective (N=111, sample in figure 7.4.23).

Figure 7.4.23 Random 10 concordance lines for "clear"

L200	rather than leaving it blank (.) so its	**clear**	and concise this discharge letter
L201	obvious instructions so it's not always	**clear**	what is going to happen next (.) even
L202	date associated with it (.) it was very	**clear**	in terms of what the plan was with this
L203	the clinical summary and plan was also	**clear**	with good documentation of the
L204	(.) um it is handwritten but it's very	**clear**	writing (.) um it gives a clear plan um its
L205	letter in that the diagnosis was	**clear**	the clinical summary and plan was also
L206	here that as the GP reader it wasn't	**clear**	which of the two had been done or
L207	continue or not so that makes it very	**clear**	whether it is acute or needs to be c
L208	of saying what is successful is having a	**clear**	diagnosis (.) clear discharge medicines
L209	but I think it could have been more	**clear**	what they have ruled out during that

Lines for "clear" were grouped into two broad patterns; those which described clearness of discharge communication (L201, 204) and those which evaluated discharge letter content items (L201, 205-8). The latter was associated with the following items: GP actions, pending investigations, medication, diagnosis, follow up/management plan, what the patient has been told, clinical summary, and reason for admission. Corresponding to RQ3, it may be inferred that these content items are important to GPs; this inference is further grounded through the collocating positive evaluates (L203, 208). "Useful" had 89 hits. "Useful" lines often favourably evaluated the practice of patients receiving discharge letters, *"useful for patients to have a copy"*. This pattern is exemplified in figure 7.4.24 on the next page (L210-219).

Figure 7.4.24 Random 10 concordance lines for "useful"

L210	the bloods and CT report now that is	**useful**	that the discharge summary has a
L211	written at the top which makes it	**useful**	(.) yeah structured template makes a big
L212	phone number for the patient would be	**useful**	you know if you are no better (.) phone
L213	so in general terms I think it is very	**useful**	for a patient to have their discharge
L214	no known allergies I think that is more	**useful**	because then you know it has not been
L215	that we might get but also it is very	**useful**	for the patient to know for example if
L216	and not taken that with you it is very	**useful**	for them to have a hard copy of that
L217	on the phone so that's where they are	**useful**	(.) Yes definitely (.) um I mean with the
L218	at home with carers coming in it is	**useful**	for everyone if that goes home with
L219	moment (.) I think discharge letters are	**useful**	for patients (.) to see particularly with

Lines for "successful" (N=45, 15/26 texts) showed patterns for letters to evaluated as "successful" if they were of an appropriate length (L222) and contained a clear and accurate diagnosis (L220, 226-7). On the contrary, a letter was "not" successful if there was no or unclear diagnosis information (L223, 228) (see figure 7.4.25 below).

Figure 7.4.25 Random 10 concordance lines for "successful"

L220	(.) this has been judged as a	**successful**	discharge letter in that the diagnosis was
L221	whether they were unsuccessful or	**successful**	I put a few reasons why (.) we handed all
L222	the same um yes (.) what's not	**successful**	is when it is far too wordy when it
L223	discharge letter so I felt it was less	**successful**	there was no diagnosis made the
L224	that point of view it was very (.)	**successful**	um in terms of the information it gave me
L225	so that's why I labelled it as	**successful**	because it was concise and clear although
L226	plan (.) that seems fine (.) yeah	**successful**	clear diagnosis and findings explained (.)
L227	suppose in terms of saying what is	**successful**	is having a clear diagnosis (.) clear
L228	again I felt this one was less	**successful**	because again there was limited detail
L229	obviously a plan and um (.) that's a	**successful**	if it's clear what has changed I don't want

Lemmatised "[UNDERSTAND]" had 92 hits in 19/26 texts (see figure 7.4.26 on the next page). GPs commonly described instances of concern regarding patient understanding (e.g. acronyms in letter) or previous experiences of patient understanding difficulties (e.g. patient seen GP for letter explanation). Of relevance to RQ5, participants' suggestions to improve patient understanding included: use of "plain English" and "patient friendly" language i.e. lay terms for jargon, and avoidance of acronyms. Within "understanding" lines, a few of the GPs revealed that in regard to some letters, even *they*, as trained physicians, are not sure what an acronym means (L234).

Figure 7.4.26 Random 10 concordance lines for lemma "[UNDERSTAND]"

L230	them more concerns if they don't	**understand**	necessarily everything that has
L231	be in a language that everyone	**understands**	in which case the use of acronyms
L232	you know be hard for them to	**understand**	but then those are the ones where
L233	to the consultant to say I don't	**understand**	what this abbreviation is (.) it might
L234	not always the patients who don't	**understand**	it sometimes it is the GPs who do
L235	it very easy for the patient to	**understand**	and they come to the GP knowing
L236	currently asymptomatic do people	**understand**	what that means possibly I would
L237	and you have got to be clever to	**understand**	it and make them [feel] slightly
L238	is going on in terms that they can	**understand**	and the discharge summary doesn't
L239	language that they would necessarily	**understand**	what that meant so the colonic

Hospital discharge

The words in this theme are markedly broad compared with other themes; terms such as "information" are near super-ordinates for words in other themes e.g. *content items*. Subsequently, many patterns have already been described in the above themes and so will not be repeated here. To illustrate this near pattern-saturation (427, 468), samples are in appendix G.

There were 184 corpus hits for "information". Some lines simply stated the general purpose of *"good"* and "*clear"* discharge communication to ensure that *"there is no problem with continuity of care*". Other information lines referred to letter content items or broader communication concepts such as *what happened.* Across lines, participants articulated that there is great variation in quality of discharge communication; cases with "too little" or "not much" information were often described as not successful. "Information" was frequently pre- and post-modified with words such as *"important, "relevant", "useful", "accurate", "clear",* and *"concise";* this conveys it is not necessarily just the presence of information that governs a "successful" letter but the information *quality*. However, GPs did remark on the difficultly of balancing and communicating the right level of information required and moreover the need to personalise and adapt information for different recipients and cases:

> *"…it depends on what the discharge summary is for…if it is for a routine surgical admission then we don't need much information but if a patient has had a 4 month admission then really a brief synopsis of what the important events and the investigations have been done in a concise manner is really useful so some of them do that but some are too wordy or*

> *don't contain enough information so it's about getting the right level of important facts…"*

Within "communication" lines, emphasis was also placed on the different styles of the writers:

> *"…medicine is an art and the communication within that is the same and all artists have a different style and I think all doctors do things in a different way and also as human beings we communicate differently and I think you can't fail to take that in account"*

One participant's discourse featured commentary about the importance of communication to patient care and this GP also pondered the potential benefits of policies in this area:

> *"We probably generally have too many policies for too many different things but I think communication if it's not being done well probably is something that needs a policy so that it can be adhered to and audited and checked up on"*

Active searching of key linguistic items and hand searching of transcripts

The purpose of this section was to highlight any results not revealed through the corpus techniques employed above. In light of the realist review findings from chapter five, it was noticeable within findings that there was a distinct lack of referencing to "personalised" or "patient-directed" letters. Searching these terms yielded 0 hits. However, hand-searching did reveal a few related patterns. One participant explicitly outlined issues with producing "*two different discharge summaries"* (i.e. one for patient and one for GP) and argued the benefits and drawbacks of the patient receiving the *"same"* as the GP; these arguments appeared to align with the findings for patient letters and copies described above:

> *"I think the (.) it would be a lot of work for them to do two different discharge summaries and then the risk of things being left off or omitted so I think practically it's probably helpful for the patient to have the same*

> *letter as we have but I think the danger of that then is that there is a lot of technical stuff in there"*

Responding to RQ5, references were also found to patient stylised or modified letters where the same information is processed by the computer to generate two templates, one which is more specific to the content needs of the GP and the other to the patient:

> *"…but in this age of technology it should be fairly straightforward to write a programme where um when you write you put all of the information into the full discharge summary and then it generates two sheets of paper one with the full information and one with certain bits of it that are relevant for the patient"*

In answer to RQ5, the majority of GPs (~85%, 22/26) indicated that they felt giving letters to patients is considered to be a good idea (see figure 7.4.27 below for hand-searched examples).

Figure 7.4.27 Quotes from three participants expressing favourability toward patient letters

"in general terms I think it is very useful for a patient to have their discharge summary from an acute hospital admission"

"I think it would be a good you know policy to introduce that that it was mandatory from our point of view and then at least the patient is informed (.)"

"generally I think it is an excellent idea that we give patients their discharge summaries"

Reasons for this favourability often involved signposting positive outcomes of this practice to include: letter can serve as a reminder or record of admission both for patients themselves and for future encounters and communications (e.g. A and E visit), enhancement of shared-decision making and collaboration with patients, patient can share letter with friends/family/carers, letter can keep patient informed and increase understanding of condition, promotion of patient autonomy, increased transparency, and patient may feel more included in care. However, not all GPs were uniformly in favour of patients receiving letters in their current proforma. Negative outcomes or issues noted by participants were said to include: patient difficulty understanding letter which may cause confusion, letter inaccuracies leading to patient alarm, language barrier if English not first language of patient or patient low literacy leading to little or no understanding of letters for these patients raising health inequalities, increased patient anxiety, increased workload of GPs to explain letters to patients, cases where diagnosis has not yet been discussed with patient or where patient does not want to know diagnosis, issues of confidentiality breaching if patient loses or misplaces letter, and potential patient upset in relation to sensitive issues such as mental health, medically unexplained symptoms, and obesity. Several participants did express concerns with this practice if letters are to be sent in their current forms, corresponding to RQ5, they raised the need for modifications in order to make letters more “patient friendly” and increase likelihood of positive outcomes. Examples of modifications included features covered in above analyses such as using patient friendly language (e.g. “kidney” instead of “renal”), avoidance of acronyms, use of plain simple English (e.g. syntactic considerations such as short simple sentences), keep letter clear and concise, having a patient information/action section on the letter, explanation of jargon with lay terms, and simple interpretations of test results.

7.5 Discussion

Key findings

This study found a broad consensus on GPs’ views about the content of “successful” discharge letters. These are summarised in table 7.5. Participants generally favoured patients receiving discharge letters but felt that some modifications may be required to increase patient understanding. Several recommendations for improving practices were made, described in the table overleaf.

Table 7.5 Summary of main findings across results and analyses for all themes

Main findings
RQ3: What content items do GP-assessed successful discharge letters contain? • A clear diagnosis is critical to a successful discharge letter. • Letters must contain appropriate follow up plans with clear agency. • Medication information should include a statement of any changes and reasons. • Acronyms should be avoided. • “Blank” boxes on templates are unclear; if the item does not apply this should be stated.
RQ4: According to GPs, in what form do patients currently receive discharge communication and why? • Patients currently receive letters inconsistently. • In cases where patients receive letters, they tend to receive a direct copy of the GP discharge summary.
RQ5: According to GPs, should patients receive or not receive discharge communication, why, and in what form? • In the majority of cases it is useful for patients to receive letters. • Patients need to receive adequate counselling alongside written information. • Not all patients want letters and so considerations of patient *choice* are important. • Addition of a patient information section may make letters more useful for patients.

The realist review from chapter five looked at clinician views on patients receiving letters. However, much of the synthesised evidence on this topic was from more than 10 years ago and so there is more limited evidence relating to current GP views on patients receiving letters and how this should be undertaken to improve outcomes (73). Therefore, this study provides an important update on the evidence in this area.

This study has highlighted a number of content features which are important to GPs for a “successful” letter (RQ3). These included: letter copied to patient (as long as this respects patient choice and no identified risk of harm); clear agency for actions; a clear diagnosis/working diagnosis; medication information to include those stopped/started and changed and why; investigations, procedures and tests run and results, or a clear indication of when and by whom pending tests or results will be organised and communicated; a coherent and appropriate follow up plan and management recommendations with explicit agency of who will be performing said actions; a succinct and relevant clinical summary or “what happened” in the sense of “reason for admission” and what occurred during hospital admission; any actions for GP/patient; and what the patient has been told. Analyses exposed that “diagnosis” or “working diagnosis” appeared to be a pivotal content element of a discharge letters’ successfulness. Cases where diagnosis information was not stated or unclear were almost always described as unsuccessful; this aligns with past research findings (86, 96).

Inspection of evaluative adjectives revealed that these terms were used by participants to stress that it is not just the presence or absence of content items that determines a letter’s successfulness, although this is a factor, but the quality, relevance and clarity of the information. Thus, the letter writer must exercise discretion in order to make “clear” to the GP, what is the “relevant” and “important” clinical information. This pattern was particularly noticeable in regard to complex content items such as “follow up”. Subsequently, data revealed a longer letter is not necessarily a better letter. Comparably to previous research (93), findings indicated successful letters should not be handwritten or garrulous; letters should contain concise details relevant to the patient case.

“Unsuccessful” letters were characterised by participants as including the following features: illegible (if handwritten); contain limited detail regarding what happened and what needs to happen next; blank template boxes (if applicable) rather than explicit statements e.g. no action required; lack of required information for GP e.g. unclear follow up and management plan; lack of agency or clarity of “who” is responsible for actions; no or unclear diagnosis; and an incomplete or missing medication list or a lack of information regarding medication changes and reasons for these. Participants highlighted that inadequate follow up details can lead to miscommunications which can have patient safety ramifications or negative impacts on patient care e.g. delays. Additionally, participants reported that the agent of follow up should be pragmatic, appropriate to the actions, and in accordance with guidelines and standards (e.g. *GMC, NHS England* and *AOMC*) (569). For instance, several participants remarked on the inappropriateness for GPs to follow up discharge with rapid blood tests within a Primary Care context. Participants commented that they are and should not be responsible for following up pending results of investigations conducted by the hospital. Letters were evaluated more positively if information about investigations accompanied the respective results.

Administrative details (e.g. admission/appointment date) were not a pattern identified within the corpus. This should not be interpreted that these features are not important but more that participants chose to focus on complex features e.g. follow up plan. Additionally, participants commented that where headings or components are not relevant it should be explicitly stated for increased clarity (e.g. no action for GP) rather than left blank. Participants also expressed preference for template or computer letter forms as opposed to handwritten formats; these can pose legibility issues particularly with recurrent scanning and printing.

RQ3 has been addressed in both chapter six and this chapter. The findings above are distinct from those in chapter six in that chapter six focussed on "what" content items were important whereas this chapter has focused on exploring "what" and "why". For example, chapter six explicated that unexplained acronyms in letters should perhaps be avoided as they had association with "unsuccessful" letters. Findings from this chapter explained *why* this is in terms of that unexplained acronyms may be unclear to *both* GPs and patients. Furthermore, this chapter has illuminated some "what" items that were not expounded in chapter six such as GP suggestions that letters should include a "patient information" or "patient actions" section in order for letters to explain key points in lay terms whilst still meeting the technical needs of GPs. Thus, qualitative interviews and focus groups allowed GPs to expand upon their views on what makes a successful letter and to articulate the consequences of poor discharge communications (e.g. time involved in querying an unclear acronym). For these reasons, this study has added value and further detail to RQ3 findings from chapter six.

Participants expressed uncertainty about the prevalence that patients receive letters in addition to perceptions that this practice is inconsistent (RQ4); this aligns with previous research findings (186, 554). According to the GP sample, *when* patients receive discharge letters or summaries, they tend to receive a GP copy. Reasons for these inconsistencies and uncertainties in regard to current practices were unclear. This is not to say GPs do not have views on these issues but more than views were not elicited in detail due to the interview prompts used (see appendix B) and time constraints of interviews.

Generally, data conveyed participant favourability toward the practice of patients receiving letters (RQ5); this finding aligns with several previous studies (531, 551). There was a distinct lack of references to personalised patient letters. However, this does not mean personalised forms would not be beneficial but reflects that participants focussed on the form “copy” that aligns with current guidance (63) and therefore is the status quo rather than necessarily what they deem could or should be happening. Instances were found where participants theorised the possible benefits of patients receiving letters in respect of real-life cases as well as examples of when patients receiving “copy” letters had saved the GP and patient time and potentially improved patient care.

GP participants gave a number of examples of positive outcomes associated with patients receiving discharge letters such as a heightened sense of patient inclusion and the letter acting as a physical record for the patient to keep and reuse in the future (e.g. patient reviewed by team in different locality who do not have full access to previous records). Positive outcomes resonated with findings from previous literature (531, 551, 554). Nonetheless, the study sample GPs did have concerns regarding patient understanding and explained that discharge letters do inherently need to contain a degree of scientific and technical medical information for the GP, which may not be comprehensible to a patient. GPs noted potential negative outcomes or issues surrounding patients receiving discharge letters to include: patient harm, patient confusion, and cases where patient does not yet know diagnosis or does not want to know diagnosis. These GP concerns and outcomes are comparable to findings from past work (494, 504, 531). Participants made a number of suggestions to address these concerns which included: importance of patient choice and consideration of particular case and avoidance of “blanket” copying letters; inclusion of a short patient information/actions section on letter which clarifies useful and relevant information for patient in “patient friendly” language (e.g. “blood in urine” instead of “haematuria”); providing patient with abbreviated form; use of plain succinct English (e.g. short simple sentences); and interpreting test or procedure results into simple terms (e.g. all blood tests normal). Additionally, results revealed that unexplained acronyms should be avoided within discharge letters, for comprehensibility both to the GP and patient. Hence, acronyms and medical jargon should be ideally followed by a brief lay explanation e.g. GORD Gastroesophageal Reflux Disease (heartburn); this finding resonates with several works (60, 63, 67, 193, 492, 510, 518, 523, 526).

Overall, participant suggestions and modifications aligned with the *Professional Record Standards Body* records guidance (64) as well as the "*Copying letters to patients: good practice guidelines*" by the *Department of Health* (63) and the more recent *"please write to me"* initiative by the *AoMRC* (69). Notably, this is by no means the first suggestion in discharge communication literature to modify GP letters to make them more "patient friendly" (497). For example, Brown *et al.* (490) in 2007 suggested making letters more "patient friendly" through the addition of a medical glossary.

RQ3 results were heavily weighted compared to RQ4-5. There are several reasons for this. Firstly, GPs were often limited for time and so focussed on what interested them more (content of letters). Secondly, due to time limitations, I predominantly choose to focus on prompts relating to RQ3 (letter content) as this question is a key focus of study 2, particularly so given that this RQ does not greatly overlap with the other studies (chapters eight and nine).

Implications of the study findings are discussed in chapter ten.

Study considerations

The purpose of the research was to draw out issues surrounding discharge communication from the perspective of GPs. Participants varied in their age and experience and worked in a varied range of areas and practices (larger and smaller), and the sample had experience of discharge summaries from at least four hospital trusts. However, data collection was restricted to 13 West Midlands practices with 26 participants and this should be considered against implications for findings and generalisability (434). Practices within the regions of Herefordshire and Coventry were under-represented in the participant sample compared with the original sample from chapter six. Therefore, semi-urban areas were over-represented in the participant sample whereas rural and urban areas were under-represented. There were 15 female (57.7%) and 11 (42.3%) male participants in the sample. Reasons why slightly more females participated in the study were unclear.

The study recruited 26 GPs (49%) which was below the recruitment target of 90%. Markedly, more GPs expressed interest to take part (N~40) than were able to do so in practice (N=26). Potential factors which contributed toward this were: timeline restrictions of study, GP time constraints, recruitment strategy, delays between GP screening and focus group/interview invitation, and insufficient incentives. Notably, participants were not obliged to participate in an interview/focus group as part of signing up for the other elements of the study; this was deliberately designed in order to recruit an adequate number of GPs for selection and screening (chapter six) without deterring interested GPs who may not want or have the capacity to participate in an interview/focus group. Ensuring this part of the study was not compulsory for GP sign-up also ensured that participation was voluntary. However, the drawback of this design was that practices were funded and reimbursed for participant time and consumables for the first part of study 2 (screening and selection of letters) but practices were not provided additional costs for taking part in focus groups and interviews. This may have deterred participation or was a barrier to salaried GPs taking part. However, due to funding limitations, it was not possible to increase payments.

Limitations are further considered and discussed in chapter ten.

7.6 Chapter summary

This chapter has built upon previous evidence regarding discharge communication through CL analysis which has allowed further understanding of GP views on patients receiving letters (RQ4-5) and the content of what makes a successful letter (RQ3). CL analysis permitted detailed consideration of language-use and patterns within the corpus. Analyses have revealed insights into GP suggestions for improving practice. How these GP views align with that of patients (chapter eight) and HPs (chapter nine), will be considered in chapter ten.

8. Study 3 Adult patient perspectives on receiving hospital discharge letters: a corpus analysis of patient interviews

This chapter examines patient interviews on discharge communication through CL analysis. The aim of this chapter was to explore patient perspectives on why they currently receive or do not receive discharge communication and how they think this process should take place in order to optimise patient experience and outcomes. To begin, section 8.1 outlines the study methods. Details regarding the participant sample characteristics are in section 8.2 following which section 8.3 covers the corpus features. Results and analyses of corpus findings can be found in section 8.4 after which a discussion of findings takes place in section 8.5. The chapter contents are summarised in section 8.6.

8.1 Methodology and methods: Corpus linguistics

Chapter four describes the methods in detail (section 4.5). Briefly, GP practices sent patients associated with each of the discharge letters selected in study 2 (chapter six) an invitation pack for interview. Patients then contacted KW to arrange a face to face interview. Interviews were "semi-structured" (399) with eight predominantly open questions (interview guide in appendix C). The questions explored patients' most recent hospital experiences, their preferences for receiving discharge letters, and their suggestions for improving discharge communications. The study RQs and objectives are below:

Research questions (RQs):
RQ6: According to patients, in what form do they currently receive discharge communication, and why?

RQ7: According to patients, should they receive or not receive discharge communication, why, and, in what form?

Objectives:
To gather patient perspectives on whether and how they should receive discharge communication through interviews about their experiences.

To analyse the interview data using corpus linguistics to examine patterns of patient experiences and views on written discharge communication.

Participant interviews were conducted, digitally audio recorded, and transcribed by myself to build the patient corpus in *Antconc* (447). Comparably to chapter seven (study 2), CL analysis of the corpus involved quantitative techniques via keywords (410) with the *BNC* Spoken (2014) (439) as a reference corpus (Log-likelihood (p<0.05), top 50 keywords) for initial pattern identification (461) and CL qualitative techniques, specifically, *collocation* (4 word span) and *concordance* line inspection for expansion of quantitative findings (410, 415, 461). The statistical measure log-likelihood (p<0.05) was used for collocation analysis (see page 84 in section 4.5.4 for justification of choosing this statistical measure). During analyses, observations were made in regard to *dispersion* (414, 458, 459, 466). Lemma realisations were manually synthesised. As the interview questions (Qs) were designed around the RQs, consolidated responses for each interview question were analysed in turn. Triangulation (467) of CL findings with manual and hand-searching was also undertaken to increase reliability and validity of findings (467) and identify any "missed" patterns, or otherwise, in order to attain or at least come close to attaining *pattern saturation* with relevance to the RQs (427, 468). In line with the RQs, quantitative analysis was intended to allow quantification of how patients currently receive letters (RQ6) and their preferences for receiving letters (RQ7). The qualitative methods were anticipated to allow expansion and explanation of quantitative findings to include: reasons why patients receive letters and reported outcomes (RQ6), and why patients feel they should receive (or not) discharge letters and preferred forms (RQ7).

8.2 An overview of the patient interview data

As described in chapter four (page 69), it was anticipated that 5-10% of invited patients would be recruited (minimum target 30 participants). Invitation letters were sent to all (489) patients relating to the letter sample in chapter six; 90 (18%) expressed interest to participate following which 50 (10%) patients were consented and participated. There were several reasons for this expression of interest and recruitment rate differential:

1. **Deterioration of patient health** – some patients wanted to take part but thereafter their health deteriorated to the extent that they were unable to do so.

2. **Illnesses of researcher -** the majority of these were rescheduled but, in a few cases, participants were no longer available or did not return calls to reorganise.
3. **Patient not contactable** - several patients contacted KW to express interest in the study (e.g. posted completed consent form with contact details) but thereafter did not reply to emails/ pick up phone calls/return messages. For these patients, a maximum of three contact attempts was made.
4. **Decision not to participate** – a few patients contacted with queries but then decided not to take part.

The patient participants were registered at 17 out of the 18 participating GP practices. There was a median of 2 patients per practice with a range of 1-10 patients per practice. The median time length between the date on the discharge letter and the patient interview date was 10 weeks (range 4-22 weeks); this is outside the 4-6 week target which was partly due to a portion of the recruitment period straddling the Christmas holidays and partly due to delays in GP practices sending invite packs to patients. Patient interviews took place at GP surgeries (N=36, 72%) and patients' homes (N=14, 28%); as far as possible participants were given a choice of interview location and time. The running time for interviews was flexible although expected to last between 30 minutes and an hour. In practice, interviews ranged from approximately 10-90 minutes and on average took 60 minutes as expected. This created around 50 hours of recording time.

The highest levels of recruitment took place in South Warwickshire (42%) and Coventry (24%). South Warwickshire was over-represented in the sample (24.5% in invited sample) and Coventry was under-represented when compared with the original invited sample (50% in invited sample). Thus, sub-region distribution of patient participants was skewed compared with the original sample; the implications of this are considered in the discussion.

Tables' 8.2.1-9 display the corpus *metadata* (410) in terms of patient-reported demographics. This information was provided by 37/50 (75%) of participants but not all participants completed all questions. Age ranged from 27-87 years (median=64, IQR: 49, 72); this is reasonably representative of the age distribution (19-96 years) captured within the original letter sample which had a similar median of 60. However, the median ages in both samples are skewed toward older patients. This is unsurprising given that more older people are users of hospital services than younger people.

The number of patient case specialties (N=15) was lower than that of the original invited sample (N=39). The highest number of cases were from Trauma and Orthopaedics (N=8, 16%) and General Surgery (N=7, 14%). Across specialities, discharges were: inpatient (N=44, 88%), outpatient (N=3, 6%), or other (e.g. A & E) discharge (N=3, 6%). Therefore, inpatient discharges were slightly over-represented in the patient sample when compared with the original letter sample and invited patients (inpatient discharges=76.7%).

Gender distribution was reasonably even (14 males: 16 females, or 28%:32% respectively) although 20 participants (40%) did not answer. This distribution is more or less representative of the original sample (22.3% male, 22.9% female, 54.8% missing data) although the missing data could be masking data skews. Less variation was recorded in relation to ethnicity (62% variants of White/English/British) and religion (50% variants of Christianity). Reported educational qualifications and incomes were skewed toward the higher groupings and possible reasons for this are discussed in section 8.5.

Participants were advised to bring their recent discharge letter to the interview, if they had a copy. Thirty-two (64%) reported that they had received a copy of the discharge letter from the hospital. Of the remaining participants, 1 (2%) had received a personalised letter, 6 (12%) received other forms of written documents e.g. leaflets, 8 (16%) only received verbal information, and 3 (6%) described that they received no information whatsoever. Fifteen patients were shown their letter for the first time at interview; this was enabled only if their GP was in agreement. In total, 43 (86%) had their discharge letter at interview.

Tables' 8.2.1-9 are found below and over the following pages.

Table 8.2.1 Ages of respondents

Age (grouped)	Frequency
Unanswered	13 (26%)
21-30	1 (2%)
31-40	1 (2%)
41-50	10 (20%)
51-60	3 (6%)
61-70	10 (20%)
71-80	10 (20%)
81-90	2 (4%)
Total	50 (100%)

Table 8.2.2 Gender as identified by respondents

Gender	Frequency
Unanswered	20 (40%)
female	16 (32%)
male	14 (28%)
Total	50 (100%)

Table 8.2.3 Ethnicity as identified by respondents

Ethnicity	Frequency
Unanswered	19 (38%)
British	11 (22%)
English	5 (10%)
White	7 (14%)
White British	8 (16%)
Total	50 (100%)

Table 8.2.4 Religion of respondents

Religion	Frequency
Unanswered	20 (40%)
C of E	18 (36%)
Catholic	3 (6%)
Christian	4 (8%)
None	5 (10%)
Total	50 (100%)

Table 8.2.5 Discharge Speciality

Speciality	Frequency
A&E	6 (12%)
Acute internal Medicine	1 (2%)
Cardiology	4 (8%)
Colorectal Surgery	1 (2%)
Endocrinology	2 (4%)
General Medicine	4 (8%)
General Surgery	7 (14%)
Neurosurgery	1 (2%)
Ophthalmology	1 (2%)
Plastic Surgery	1 (2%)
Renal/Nephrology	1 (2%)
Respiratory	6 (12%)
Stroke Medicine	1 (2%)
Trauma and Orthopaedics	8 (16%)
Urology	6 (12%)
Total	50 (100%)

Table 8.2.6 highest education qualification of respondents

Highest educational qualification	Frequency
Unanswered	30 (60%)
GCSES/ O levels	2 (4%)
A Level	4 (8%)
Diploma or HND	2 (4%)
NVQ	2 (4%)
Bachelor's degree	5 (10%)
Teaching certificate	3 (6%)
Postgraduate degree	2 (4%)
Total	50 (100%)

Table 8.2.7 Income bracket of respondents

Income bracket	Frequency
Unanswered	32 (64%)
<12,000	3 (6%)
12,000-18,000	3 (6%)
18,000-25,000	3 (6%)
25,000-40,000	5 (10%)
40,000+	4 (8%)
Total	50 (100%)

Table 8.2.8 West Midlands region of registered GP practices

West Midlands region	Frequency
Coventry	12 (24%)
Herefordshire	7 (14%)
North Warwickshire	3 (6%)
Rugby	7 (14%)
South Warwickshire	21 (42%)
Total	50 (100%)

Table 8.2.9 Type of hospital visit/admission

Type of discharge	Frequency
Inpatient	44 (88%)
Not admitted (A & E)	3 (6%)
Outpatient	3 (6%)
Total	50 (100%)

Table 8.2.10 contains a summary of the participant sample characteristics as compared with the original letter sample in chapter six. The sampling method aimed to have equal representation of participants associated with GP-assessed "successful"/ "unsuccessful" letters. In practice, the recruited participants were linked with 32 successful letters (64%) and 18 unsuccessful letters (36%); this is slightly more skewed toward "successful" than the original sample (59.5%). Table 8.2.10 shows that the number, size, and localities of the registered GP practices of patients were more or less wholly representative of the original sample. In terms of hospital localities, experiences relating to hospitals within North and South Warwickshire were over-represented whilst experiences relating to hospitals within Coventry were under-represented. In terms of admission types, inpatient discharges were over-represented in the interview participant sample. The gender and age range of the interview sample participants are somewhat representative of the original letter sample in chapter six.

Table 8.2.10 Comparison between patient sample and original letter sample

Characteristic	**Original sample (chapter 6) (N=489)**	**Patient sample (N=50)**
GP grading	Successful: 291 (59.5%) Unsuccessful: 198 (40.5%)	Successful: 32 (64.0%) Unsuccessful: 198 (36.0%)
No. of GP practices	18 practices	17 practices
Practice sizes	Small (<5,000 patients): 1 (5.6%) Medium (5-10,000 patients): 11 (61.1%) Large (10,000+ patients): 6 (33.3%)	Small (<5,000 patients): 1 (5.9%) Medium (5-10,000 patients): 11 (64.7%) Large (10,000+ patients): 5 (29.4%)
Practice localities	Rugby: 3 (16.7%) Herefordshire: 3 (16.7%) Coventry: 5 (27.7%) North Warwickshire: 1 (5.6%) South Warwickshire: 6 (33.3%)	Rugby: 3 (17.6%) Herefordshire: 2 (11.8%) Coventry: 5 (29.4%) North Warwickshire: 1 (5.9%) South Warwickshire: 6 (35.3%)
Hospital localities	Rugby: 3 (0.6%) Herefordshire: 59 (12.1%) Coventry: 269 (55.0%) North Warwickshire: 22 (4.5%) South Warwickshire: 120 (24.5%) Other: 16 (3.3%)	Rugby: 1 (2.0%) Herefordshire: 7 (14.0%) Coventry: 19 (38.0%) North Warwickshire: 3 (6.0%) South Warwickshire: 17 (34.0%) Other: 3 (6.0%)
Admission	Inpatient: 375 (76.7%) Outpatient: 25 (5.1%) Not admitted (e.g. A&E): 89 (18.2%)	Inpatient: 44 (88.0%) Outpatient: 3 (6.0%) Not admitted (e.g. A&E): 3 (6.0%)
Patient gender	Female: 112 (22.9%) Male: 109 (22.3%) Missing: 268 (54.8%)	Female: 16 (32.0%) Male: 14 (28.0%) Missing: 20 (40.0%)
No. of specialty	39 Specialties	15 specialties
Patient age	Range: 19-96 Median: 60	Range: 27-87 Median: 64

The proportion of patients who had and had not seen letters as well as those shown letters for the first time at interviews was cross-tabulated against the GP ratings. The results are in table 8.2.11 and table 8.2.12. This seems shows a higher proportion (not statistically significant) of patients who had received letters were linked with "successful" graded letters.

*Table 8.2.11 Viewed letter previously/has own letter * GP letter grading cross tabulation*

	GP letter grading		**Total**
Viewed letter previously	successful	unsuccessful	
no	9 (28.1%)	8 (44.4%)	17 (34.0%)
unsure	1 (3.1%)	0 (0.0%)	1 (2.0%)
yes	22 (68.8%)	10 (55.6%)	32 (64.0%)
Total	32 (100.0%)	18 (100.0%)	50 (100.0%)

*Table 8.2.12 Letter shown at interview for first time * GP letter grading cross tabulation*

	GP letter grading		**Total**
Letter shown at interview	successful	unsuccessful	
no	25 (78.1%)	10 (55.6%)	35 (70.0%)
yes	7 (21.9%)	8 (44.4%)	15 (30.0%)
Total	32 (100.0%)	18 (100.0%)	50 (100.0%)

8.3 Corpus structuralisation and corpus features

Corpus building followed the methods in chapter seven. Additionally, partner interview contributions were removed for focussing the corpus; these were considered separately (section 8.4). Text files were sorted, categorised and coded both for interview question number (Q) and participant. Subsequently, the corpus categorisation system allowed for rapid considerations of dispersion across interview questions and participants so that it could be ascertained whether a feature was dispersed across multiple participants or simply used multiple times by the same patient; this partially controlled for over-representation of views of those who talked more during interviews.

The corpus contained 8 text files (one per interview question response) for each of the 50 participants; this totalled 400 text files. The total number of "words" or tokens (405) was 135,637 with 4402 "word types" or token types (405) (see appendix D for table comparing word counts for all thesis corpora). As interview lengths varied, so did the size of text files (see tables 8.3.1-4). Text file lengths for interviews ranged considerably (256-5978), with a median interview length of 2622 words; the data are not normally distributed (405). Length of answers in responses also varied; this is seen in table 8.3.2. Table 8.3.3 contains the descriptive statistics for the number of tokens for the corpus. Table 8.3.4 contains the descriptive statistics for the number of token types for the corpus. The reason for the "0" token entries seen in tables 8.3.3-4 is because participants were permitted to skip questions and some questions were answered by interview support attendees (see section 8.4).

Table 8.3.1 Corpus size descriptive statistics

		No. of tokens (per participant)	**No. of token types (per participant)**
Median (Q_2)		2622	521.5
Range		256-5978	132-928
Quartiles	(Q_1)	1525.25	315.25
	(Q_3)	3423.5	592

Table 8.3.2 Corpus sub-section sizes categorised by interview question (Q)

Interview question number	**No. of tokens**	**No. of token types**
Q1	18,468	1,632
Q2	14,126	1,438
Q3	19,746	1,756
Q4	19,464	1,696
Q5	9,748	1,037
Q6	12,909	1,248
Q7	19,250	1,726
Q8	21,926	1,833

Table 8.3.3 Corpus descriptive statistics for no. of tokens categorised by Q

		No. of tokens							
		Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**
Median (Q_2)		176	149.5	235.5	247	107.5	219.5	239	303
Minimum		7	8	0	13	5	1	7	11
Maximum		2342	1423	1525	1930	1310	1302	1619	2291
Quartiles	(Q_1)	69.75	72.25	103	129.25	47.75	86.5	117	115.75
	(Q_3)	556	339	642.5	572.5	266	371.25	496.5	611.5

Table 8.3.4 Corpus descriptive statistics for no. of token types categorised by Q

		No. of token types							
		Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**
Median (Q_2)		91.5	87	122.5	120.5	66	105	123	139
Range		7-513	8-366	0-371	13-488	5-300	1-367	7-424	9-486
Quartiles	(Q_1)	49.5	49.75	61	75	34.75	50.75	66.5	75.5
	(Q_3)	196.25	151.25	204.25	192.5	130	152.25	192.5	214.25

8.4 Corpus results and analysis

Similarly to chapter seven, function items (e.g. the), and items irrelevant to RQs are presented in the tables but will not be discussed. The top 100 keywords (Log-likelihood (LL) p<.05) for the full corpus are in table 8.4.1 on the next page.

Rank	No. of hits	Keyness (LL)	Keyword	Rank	No. of hits	Keyness (LL)	Keyword	Rank	No. of hits	Keyness (LL)	Keyword	Rank	No. of hits	Keyness (LL)	Keyword
1	612	4291.52	hospital	**26**	1913	987.84	they	**51**	93	548.26	appointment	**76**	572	369.89	about
2	400	3954.06	discharge	**27**	209	921.68	given	**52**	78	523.5	communication	**77**	453	369.5	mean
3	6861	3866.16	i	**28**	1957	904.38	of	**53**	825	516.44	this	**78**	143	366.7	understand
4	3967	3335.26	to	**29**	1613	861.72	so	**54**	63	514.53	summary	**79**	269	350.78	has
5	4838	3321.96	and	**30**	1404	810.56	know	**55**	792	494.17	if	**80**	1926	350.12	t
6	971	3239.42	um	**31**	116	795.17	surgery	**56**	2397	493.84	a	**81**	409	347.61	see
7	5000	3174.57	the	**32**	1027	790.04	think	**57**	103	491.17	follow	**82**	192	347.19	uh
8	465	3160.67	letter	**33**	129	786.87	copy	**58**	1538	483.74	in	**83**	77	346.46	letters
9	491	2996.21	its	**34**	867	783.44	my	**59**	80	478.56	operation	**84**	49	330.53	surgeon
10	275	2441.04	gp	**35**	78	781.35	ive	**60**	74	478.48	consultant	**85**	270	324.98	will
11	372	2426.71	information	**36**	1234	759.28	what	**61**	50	477.84	aftercare	**86**	58	319.63	results
12	1917	2364.36	have	**37**	545	757.4	been	**62**	57	477.81	transcribed	**87**	59	316.75	tests
13	350	2128.04	doctor	**38**	88	753.69	ward	**63**	61	462.14	laughs	**88**	926	314.18	there
14	1019	1953.98	because	**39**	249	733.02	am	**64**	995	455.07	on	**89**	88	311.55	waiting
15	2214	1625.94	was	**40**	717	730.22	as	**65**	533	443.37	said	**90**	52	308.22	paperwork
16	1044	1579.87	me	**41**	859	711.77	with	**66**	428	418.04	time	**91**	234	306.94	anything
17	174	1537.5	im	**42**	112	696.44	nurse	**67**	41	401.26	whats	**92**	50	305.82	received
18	3324	1527.67	that	**43**	1353	686.69	is	**68**	182	399.29	told	**93**	537	301.16	when
19	152	1485.56	discharged	**44**	75	685.67	cant	**69**	57	398.37	nurses	**94**	617	298.79	or
20	971	1457.51	had	**45**	982	625.2	be	**70**	3062	393.54	you	**95**	241	296.54	should
21	177	1437.48	patient	**46**	487	621.4	say	**71**	452	389.97	going	**96**	73	286.63	blood
22	151	1195.41	medication	**47**	1447	615.12	but	**72**	413	387.42	very	**97**	299	264.52	which
23	779	1151.55	would	**48**	96	583.8	medical	**73**	418	384.6	from	**98**	38	263.23	reads
24	173	1147.95	doctors	**49**	960	581.78	for	**74**	64	372.61	tablets	**99**	119	262	happened
25	924	1055.58	are	**50**	73	548.96	patients	**75**	66	370.3	treatment	**100**	3198	259.34	it

Table 8.4.1 Top 100 ranked keywords by “keyness” (log-likelihood p<.05) in patient corpus

Table 8.4.2 summarises the keywords of interest and the Qs and RQs to which they relate.

Table 8.4.2 Keyword groupings relevant to RQs by question and full corpus

Interview question (Q)	**RQ relevance**	**Keywords relevant to RQ(s) and Qs**
Q1: Please tell me about your experiences of receiving any form of written discharge communication?	RQ6	Discharge(d), hospital, letter, doctor(s), medication, GP, information, nurse, tablets, surgery, received, telephoned, given, copy, consultant, papers, appointment, operation, sent, patient
Q2: When you were discharged from hospital on DATE (recently), what information were your given?	RQ6	Discharge(d), hospital, letter, information, doctor(s), medication(s), given, GP, consultant, summary, papers, said, told, communication, aftercare, follow
Q3: How did you feel about the information you were given?	RQ6/RQ7	Hospital, discharge(d), letter, information, doctor, GP, medication, reads, given, patient, medical, told, summary, incomprehensible
Q4: What written information would you like to be given or sent when being discharged from hospital and why?	RQ7	Hospital, information, discharge(d), letter, know, medication, given, patient(s), summary, think, medical
Q5: Would you prefer to receive a direct copy of the letter sent to your GP or a separate letter specifically addressed to yourself?	RQ7	GP(s), letter, copy, information, discharge(d), patient, understand, personalised, medical
Q6: Would you like to always be given this letter or would you prefer to choose each time you are discharged?	RQ7	Letter(s), discharge(d), GP, information, patient(s), think, opt, copy, given, time, medical, automatic, system
Q7: How do you think the process of patients receiving written discharge communication can be improved?	RQ6/RQ7	Discharge(d), information, letter, patient(s), communication, waiting, given, copy, time
Q8: Is there anything else you would like to talk to me about today related to written discharge communication?	RQ6/RQ7	Hospital, patient(s), discharge(d), think, letter, communication, experience, information, medical, *NHS*
Full patient corpus (all questions compiled)	RQ6/RQ7	Hospital, discharge(d), letter(s), GP, information, doctor(s), patient(s), medication, given, know, surgery, think, copy, medical, communication, summary, follow, aftercare, time, told, tablets, treatment, understand, results, tests, waiting, paperwork, anything, received, blood, happened

Where relevant to present extended co-text for contextualisation, run-on quotes are used. Throughout results, node words are in bold font. Notably, some lexical items were “key” in more than one corpus sub-section and some findings re-occurred across Qs. To avoid repetition, findings are only presented in the section which they first manifest. Due to thesis size restrictions, the below sections focus on findings relevant to the RQs only.

Collocation analysis was not carried out on all keywords but those which were theorised to produce results and findings of relevance to the research questions. These included: “discharge(d)”, “information”, “understand”, “medical”, “letter(s)”, “hospital”, “GP”, “doctor(s)”, “medication”, “give(n)”, “copy”, “communication”, “results”, “summary(ies)”, “paperwork”, “receive(d)”, “test(s)”. Following methods from chapter 7, results of collocation analyses which had no relevance to the research questions or which otherwise repeated findings are not included in the below thesis sections.

Q1 - please tell me about your experiences of receiving any form of written discharge communication?

The lemma (410) “[DISCHARGE]” for Q1 had 146 hits (dispersion 35/50 texts)(sample L1-10 in figure 8.4.1 on the next page). Some “discharge” lines contextualised the participant’s individual discharge experience and explained the reason for the hospital admission and discharge (e.g. *“I had discharge as a result of a heart attack”*). These lines seemed to function to “set the scene” for the discharge experience narrative that followed. Other keywords (“surgery” N=24; “nurse” N=30; “appointment” N=18; “operation” N=16) for Q1 also performed a similar “setting the scene” function that may be likened to the “orientation” phase of Labov’s (602) model of six stages of narratives.

Figure 8.4.1 Example 10 lines from six participants for "[DISCHARGE]" and concept of timing

L1	it was affecting my kidney I was	**discharged**	after five hours of waiting with the person
L2	one it was (.) not that I was	**discharged**	very quickly because I was out of the
L3	I say to get the medication and	**discharge**	letter it was more than twenty four hours
L4	3 weeks from the date I was	**discharged**	uh before the surgery received any
L5	hanging around to wait for these	**discharge**	papers and that's what I was waiting
L6	a whole day in hospital for that	**discharge**	letter to come from the doctors and my
L7	little writing (.) yeah [DATE] they	**discharged**	me and I didn't have to hang
L8	(.) to be fair when you get	**discharged**	from hospital all you are interested in is
L9	to wait nearly 9 hours for that	**discharge**	letter so that was probably the worst part
L10	going to be ready where is the	**discharge**	letter because we didn't know what the

Throughout "discharge" lines, participants emphasised *timing*; this included discharge wait times and time taken for medication and letters to be received (see figure 8.4.1 which was generated through hand-searching *Antconc* outputs for [DISCHARGE] lines). These lines nearly all indicated perceived to be unnecessarily long amounts of time. This notion is iterated through items in the co-text with negative connotations such as *"hanging around"* (L5) *"worst part"* (L10) as well as phrases that communicate the *timing* was of an unnecessary or unpleasant duration *"more than"* (L3) and "*nearly* [X time]" (L9). One participant summarised that they interpreted the letter to be a *"delay tactic".* A similar concept was construed by another participant, where they conveyed the letter function as an *"administration hoop"* for the hospital as a *"passport to leave",* rather than for themselves. In lines from five participants, "discharge" co-occurred with terms from the semantic field of medication (L11-17) (i.e. "drugs", "tablets" …). These lines had focal points including medication receipt, time delays, medication issues, and uncertainty regarding side-effects:

L11	medication (.) nothing dispensed on	**discharge**	(.) I really don't see what use that is to
L12	not going to get back (.) and I was	**discharged**	without medication (.) medication that
L13	letter from the hospital when I was	**discharged**	um which basically said which **medication**
L14	notes consist of the day you were	**discharged**	the **medication** you was on and the
L15	(.) it just says doctor is happy to	**discharge**	patient (.) has own **medication** (.) n
L16	with on **medication** (.) on doctor to	**discharge**	me either (.) the nurse was trying to
L17	Uh the only thing I had was the	**discharge**	letter and the **prescriptions** I was

17/108 (15.7%) occurrences of "discharge" were lines where the discharge communication quality was being explicitly evaluated by participants (see figure 8.4.2 overleaf which was generated through hand- searching the concordancer output [DISCHARGE] lines). Broadly, lines seem to embody more negative than positive evaluations. This is demonstrated through co-text items which perform a minimizing function (e.g. *"brief"* (L19)*, "nothing"* (L20)*, "minimal"* (L27)) as well as terms that critique the information through articulating that it was counterfactual (e.g. *"error"* (L31)*, "discrepancy"* (L29, L32)*, "incorrect"* (L33)). One participant speculated on the consequences of poor communication:

> *"there was several people…who would not have been capable of making notes…and relaying it…and I felt very much for the GP practice…they had no information…"*

Figure 8.4.2 All "discharge" lines where information is explicitly evaluated by participant

L18	was [DATE] 2017 and I noticed on their	**discharge**	papers of that year big improvements
L19	surgical procedure (.) um (.) on the	**discharge**	(.) I think it was just brief details really
L20	I was actually waiting for was the	**discharge**	papers (.) and it actually said nothing
L21	gall bladder um I had a detailed	**discharge**	paper with that um I haven't
L22	(.) the doctor who did sort of the first	**discharge**	paper indicated that I should
L23	to depart the ward and got another	**discharge**	paper from the nurses that certainly
L24	have been more information on the	**discharge**	note (.) [END OF QUESTION RESPONSE]
L25	(.) so at the end of the day the	**discharge**	letters from [HOSPITAL] were absolutely
L26	hospital for a while and I had a	**discharge**	letter with a continued care plan on it
L27	two of them the one they call a	**discharge**	letter was pretty minimal information
L28	really didn't understand what the first	**discharge**	letter to me was useful for I can
L29	two discrepancies can be put on a	**discharge**	letter to a patient (.) now I'm not just
L30	they never mentioned that even in the	**discharge**	letter they didn't mention pulmonary
L31	actually a second error on the hospital	**discharge**	letter and you know it was a case
L32	I had seen a discrepancy on a hospital	**discharge**	letter and it wasn't until later that
L33	that and got here and all of the	**discharge**	information was incorrect so nothing
L34	mine was what they call a simple	**discharge**	I think where there was no aftercare

"Letter" was the number one ranked collocate for discharge (LL=276.5). Within the sample, few participants (~2) reported having ever received a personalised discharge "letter"; these letters were both described as inpatient letters from medical specialties. Participant evaluations of such personal discharge letters were unmistakably negative, *"minimal in information", "no real useful information".* One participant compared the personalised letter against the GP letter, *"…I really don't see what use that is to me as a patient (.) Whereas the letter to the general practitioner is totally different…"*

Comparably to the GP corpus, themes of letter receipt inconsistency were rife; some participants reported they received letters whilst others did not (see

L35-51, figure 8.4.3); this figure was produced by hand-searching the *Antconc* output “[DISCHARGE]” lines for all lines relating to the receipt (or not) of written discharge communication.

Figure 8.4.3 All “[DISCHARGE]” lines relating to patients receiving (or not) discharge letters

L35	was handed to me um before I was	**discharged**	from [HOSPITAL] A and E and
L36	in November and I received a um	**discharge**	summary a letter and it was
L37	Um (.) right regarding the	**discharge**	papers they were handed to me
L38	Um (.) yes I received um	**discharge**	papers from (.) um [HOSPITAL]
L39	in hospital so I have got all the	**discharge**	papers here (.) I’m one of them
L40	same reason um didn’t get a	**discharge**	paper um no no I did because I
L41	Well I had two given to me (.) on	**discharge**	one was what they call a discharge
L42	they did is got a copy of the	**discharge**	notes and he was able to fit it (.)
L43	I was in hospital they gave me a	**discharge**	note with all of the information on
L44	had that I didn’t get the actual	**discharge**	letter that was sent through the
L45	results but quite honestly this is the	**discharge**	letter that I had and everything has
L46	(.) no follow up really in terms of a	**discharge**	letter (.) I recognised it was the same
L47	so they sent me home with no	**discharge**	letter as I said then I telephoned the
L48	know what the plan was for my	**discharge**	I wasn’t given anything (.) nothing as I
L49	take the hospital visit as I was being	**discharged**	I was handed a letter in an envelope
L50	is that you don’t get any information	**discharge**	information (.) um or you have to chase
L51	the prescriptions I was given upon	**discharge**	from the hospital I’ve had nothing

In line with RQ6, several participants in Q1 responses noted inconsistency *within* their own experiences; that is, times where they had received letters as well as times when they had not. One participant directly reflected on this and told how they looked up discharge policies prior to interview and was surprised there is not a standardised national policy:

> *“When I googled the website yesterday about discharging from NHS hospitals and it says each hospital has its own discharge policy I am just wondering why (.) Why isn’t there a standard discharge policy? Why does each hospital have a different one?”*

Some patients who had received discharge letters went on to explain the significance of receiving this written communication to them, for example:

> *“…but you know it was invaluable having that discharge letter because as it happened my health deteriorated and whatever and I had to have the doctor out so instantly they could pick up the letter and see all of the medications and details…”*

Within this quote, the participant evaluates receiving the letter as a positive experience or *"good";* this is especially articulated through use of the adjective "invaluable" which performs a superlative function. Within this experience, the letter proved useful to the patient (and doctor) as the patient needed urgent medical care post-discharge and patient receipt of the recent letter ensured the most up-to-date medical information for their case was readily available. Addressing RQ7, cases where participants *had* received letters tended to feature more positively evaluative language than cases where they *had not.* However, exceptions were found. Further building on RQ7, some participants felt that the discharge letter was not useful. Reasons for this included the density of unexplained medical terminology as well as instances where the participant assessed the letter information quality to be poor. Thus, it is perhaps not necessarily always *receiving* the letter which the participant appraised as not useful but the letter content and quality sometimes nullified its usefulness.

Relating to RQ6, other discharge experiences framed as undesirable were cases whereby the patient acted as the discharge summary deliverer:

> *"I think when you are on your back and not feeling too good after being discharged the last thing you want to do is go to see your GP (.) Seeing as mine is [DISTANCE]…"*

The participant's negative framing of acting as a delivery method resonates with findings in chapters five and seven. Hand-searching concordances for the lemma "[GIVE]" unveiled 8 more cases (L52-9) where seven participants reported being the summary deliverer; the seven participants all described this as problematic:

L52	give me an unopened letter and say	**give**	that to your doctor that's what you
L53	I just got a letter in the envelope to	**give**	to the doctor but this time they gave
L54	to your GP and you have got a copy to	**give**	the GP so I didn't really take any notice of
L55	As far as I remember I was just	**given**	an envelope for my GP (.) not being aware of
L56	one to the doctor (.) yeah they just	**give**	you an envelope normally don't they be
L57	well on on the one I just had I was just	**given**	a letter an envelope with for GP written on it
L58	is gone the only letters I've ever been	**given**	is one to bring straight down here to my doctors
L59	that gets given in a brown envelope to	**give**	to your doctor erm your discharge notes

"Give" also featured in negated clauses where participants expressed what they were "not given" and, tantamount to this, "given" was occasionally complemented by pronouns (e.g. "nothing", "anything") to denote absence of information; this is of direct relevance to RQ6. Broadly, lines where participants had been "given" information, so long as it was described as accurate and appropriate, tended to co-occur with lexical choices marked for positive evaluation such as *"brilliant" "handy" "comprehensive".* Conversely, lines where patients had not been given adequate information or where this information was inaccurate tended to be peppered with negative evaluations such as *"just [GIVE]"* and *"wrong".* One example of this was a case where the participant reported they had been given inaccurate information but they were not aware of this until they got home due to the effects of anaesthesia. The participant described how the series of events "*added to the feeling of not being cared for not being valued*" and culminated to create a *"not very positive"* discharge experience. Additionally, responding to RQ6, in the few cases where discharge communications were handwritten, these were assessed negatively due to illegibility, *"but as I say it's not legible"*.

Main findings in response to Q1 (please tell me about your experiences of receiving any form of written discharge communication?)
• Timing is pivotal to a successful discharge experience. • There are inconsistent practices across hospital sites.

Q2 – when you were discharged [recently], what information were you given?

Some Q2 findings overlapped with Q1, for example, that the patient experience of receiving poor written communication was worsened by the perceived to be long wait time:

> *"Well if I had waited four and a half hours for them two words what was the point"*

Results for "information" (N=37, LL=254.23) demonstrated that participants often talked about information in terms of specific details e.g. "medication" (N=21, LL=197.58), or "follow" up (N=18, LL=106.7).

Content collocates for “information” had low frequencies (≤5). Nevertheless, manual searching of concordances revealed syntactic patterning:

Pattern 1) “information” as the “object” to complement the transitive verb “give” [PROUNOUN [GIVE] information]

Pattern 2) “information” pre-modified as the complement to an intensive verb BE [it [BE] ADJ information]

Pattern 3) “information” as the subject head of an intensive verb construction [information [BE] ADJ]

Lexicogrammatical patterns relating to meaning and of relevance to RQ6 were observed (413). For pattern 1, participants tended to state whether or not they were given discharge information, which varied, (e.g. *“I was given information” “I wasn’t given any information”*). For pattern 2, participants evaluated the discharge information with adjectival phrases in attributive position (e.g. *“it was quite limited information”*). For pattern 3, participants evaluated the information with adjectival phrases in predicative position (e.g. *“the information we got from the heart was excellent”*). Interestingly, unlike the GPs in study 2, who often drew on the same evaluative terms e.g. “clear” to describe discharge letters, participants used an array of descriptors which explained the lack of content collocations.

As [SAY] (N=154) and [TELL] (N=49) are near-synonyms, their lemma concordances were explored concurrently (sample in Figure 8.4.4, L60-69).

Figure 8.4.4 Sample of 10 random mixed lines for [SAY] and [TELL]

L60	handwritten letter to me um just	**saying**	I was okay to go and that was it really (.) so
L61	because I was uh had a letter to	**say**	to go their clinic and when I got there there was
L62	the actual piece of paper doesn’t	**tell**	you much at all got a bit more when I was
L63	still don’t know exactly what was	**told**	the doctors I know they will show me exactly what
L64	Um (.) well they just um	**told**	me that it was me breathing (.) I was breathing very
L65	to have that (.) and she	**said**	apart from finding out that there is no cancer there
L66	[LETTER] one (.) they have	**said**	I have got a frozen shoulder which I haven’t (.) its
L67	other things going on and they did	**tell**	that he couldn’t come around to see me because
L68	to the GP and what they have	**said**	in the past erm you shouldn’t be on it no longer
L69	point I don’t know when they just	**said**	they will be in touch and that was it that’s all I

Many say/tell lines featured negation and emphasised what patients were [NOT] told (L62) or where they were given inappropriate or inaccurate information (L61, L62, L66) or otherwise information they could not retain (L67). These experiences were framed negatively and some participants suggested this lack of good communication lets down otherwise high-quality hospital care provision, "*I feel that this bit is letting them down this after stage this discharge bit…"* The quality of communications was pivotal in whether or not the experience was evaluated positively in terms of patient satisfaction.

Within negative experiences, patients were typically given written *or* verbal communication. When patients reported being given verbal *and* written information, where this information was accurate and understandable, this tended to be evaluated positively:

> *"I didn't feel I was being left in the dark I didn't feel that you know I was told quite clearly what the process would be when I was discharged (.) and I have got a copy…"*

In the above quote, the participant draws on the metaphor "in the dark" to communicate how it feels [NOT] to be "left" feeling confused or "in the dark". Two other usages of *"in the dark"* were found in the corpus by two other participants. These participants drew on the metaphor to depict how they felt; in the former the participant was confused by the letter contents as the language is inaccessible and in the latter the participant felt uninformed about their condition:

> *"…letter had quite a lot of information which was difficult for a lay person to understand (.) Because of the medical terminology in it (.) so on both counts as a patient you are a little bit left in the dark about exactly what the purpose of the letter was and how it can help…"*
>
> *"They kept me in the dark most of the time which wasn't very helpful…it was a hindrance for my recovery because they did not keep me up to date"*

Hand-searching of [SAY]/ [TELL] lines showed that participants sometimes drew on these verbs to parallel contradictions of information (verbal and written). Thus, patients reported stories of being told one thing one day and then something else thereafter:

> *"I remember saying but I haven't had a keyhole and the nurse saying the discharge nurse saying well that's what your notes say…that was the one that sticks in my mind I suppose (.) As the the one that has caused me the most distress (.)"*

Addressing RQ7, although patients receiving letters may provide an opportunity to correct inaccuracies, in certain cases, the presence of the discrepancy itself can cause harm. One participant explained how they had had a fall down the stairs and had been drinking alcohol earlier in the day but did not attribute the fall to the alcohol but the layout of the home. The participant described the letter wording felt accusatory or judgemental *"makes me sound awful" "I just think it's not fair"* as they did not believe the facts had been accurately relayed:

> *"…the reason I had my fall like fair enough I had had a drink early afternoon… it [LETTER] doesn't mention that my bathroom is based downstairs … it wasn't until the following day…that's when I phoned for an ambulance then because I was literally panicking so for them to write intoxicated then like when they turned up I was absolutely off my head when that was absolutely not the case at all…"*

In chapter five, the realist review found that patients do not tend to mind social habits or use of substances (i.e. alcohol, smoking…) being mentioned in letters so long as it is relevant (67). The above case adds an additional caveat to this notion in that information should also be wholly accurate and phrased with neutral and non-judgemental language. The participant in the above case found the repeated phrase of *"fall due to intoxication"* within their letters very upsetting and summarised it as *"highly offensive"*. Patient distress may be classified as a patient harm or negative outcome, which should be avoided.

Main findings in response to Q2 (when you were discharged [recently], what information were you given?)
• Poor quality discharge communication lets down otherwise good hospital care. • Providing patients with written and verbal information led to positive experiences. • Providing patients with discharge letters can allow them the opportunity to correct inaccuracies. • Information relating to social habits or substance use should not only be relevant but wholly accurate and phrased with neutral and non-judgemental language.

Q3 – how did you feel about the information you were given?

"Feel" had 35 hits and "felt" had 59 hits. Typical uses of [FEEL] in the Q3 sub-corpus were references to participants' own internal emotions or psychological responses and perceptions; these may be likened to the *mechanisms* outlined in chapter five. A sample of [FEEL] lines is in figure 8.4.5 (L70-9). Three of the lines are marked for positive evaluation, *"positive"* (L79), *"good"* (L73), *"alright"* (L78). Interestingly, the patients for all three of these cases were provided discharge letters by the hospital. The other seven lines may be interpreted more negatively due to co-text items with negative connotations (e.g. *"uneasy"* (L70)). Of these, there appears to be a pattern of patients feeling dismissed, *"wiped their hands"* (L72) and also patients feeling vulnerable, *"vulnerability"* (L75), most likely heightened due to the fact they are not *"feeling well"*. Thus, these lines create a sense that patients feel they are being expunged from the hospital as the care is transferred to Primary Care. Negative feelings appeared to be exacerbated in cases where patients were given what they perceived to be inadequate or incorrect information, often consisting of poor quality or no written communication. On the contrary, positive experiences were boosted when patients were given letters, *"having it in black and white is a very positive step forward"*.

Figure 8.4.5 Random sample of 10 lines for lemma [FEEL] in Q3 (participant n=10)

L70	recommend you should do (.) I did	**feel**	a bit uneasy (.) they had obviously ruled out
L71	or review so that's where I	**feel**	there was an error definitely (.) so it wasn't
L72	it just wasn't organised and I did	**feel**	like they just completely wiped their hands
L73	I know no it was a good summary I	**felt**	it was a good summary (.) that I could
L74	it (.) it won't go nowhere (.) but I	**felt**	very strongly this time that the (.) it was very
L75	feeling uh I think it adds to your	**feeling**	of vulnerability because you can't have a full
L76	go through my mind of you know	**feeling**	worried about going under you know so it
L77	plates in my leg at the time so I	**feel**	that process and the interaction has
L78	I did I felt alright about it um I	**felt**	a bit that why did they put this instead of
L79	positive step forward I definitely	**felt**	good about it yeah and there was some trust

One participant explicitly compared previous experiences where they had little or no "information" with their recent discharge where they received clear written information:

> *"It's when you are left in the air and you have not been given no information or plan and you can sit here feeling sorry for yourself (.) But that was an amazing experience (.) I mean I have had this condition now for twenty years and I have to say that is the best discharge ever… I knew exactly what was going to happen"*

Corresponding to RQ7, the participant said for them, *"the knowing is better than the not knowing"* and describes the confusion of not knowing negatively, *"nightmare"*. For this patient, the *"knowing"* improved not only their experience and knowledge but positively impacted their wellbeing, by reducing stress and confusion, *"it was so much less stressful"*. This finding is interesting because the realist review (chapter five) found one of the main concerns clinicians express about patient letters is that it will confuse or act as a catalyst for patient harm (186, 497, 502, 510, 517, 554, 574, 575). This starkly contrasts with the above case where the *"knowing"* and letter receipt seemed to alleviate and reduce stress that had been previously experienced where information had not been provided or was lacking.

Across [FEEL] lines, a theme emerged of *confusion* and patients feeling unsure what they are supposed to do when they get home. This ranged from "medication" plans and what drugs to take, when and how to obtain further prescriptions, to confusion regarding physical rehabilitation (e.g. exercise regime, time off work), whether or not there would be follow up (and what), and how pending investigations and results would be arranged and/or communicated. One participant described current discharge processes as *"chaos"*.

In several instances, confusion stemmed from "medical" information which was dense with jargon or otherwise incomprehensible to patients, *"it went a bit over me head"*. This seems to align with findings from the realist review and the GP corpus that letters to patients need to be as "patient friendly" as possible; acronyms should be avoided and jargon should be briefly explained in lay terms. Notably, some patients did recount how receipt of letters full of "medical" jargon can be remedied such as looking up terms on the internet:

> *"Perhaps um some of the use of the medical jargon can be a little bit but (.) You know there is the internet and all sorts of things and if you are not*

> *too sure about an expression or a descriptive word you can look it up on the internet"*

Hence, although good practice would be to observe the above suggestions regarding patient-friendly language, many of which are in *NICE* guidelines (59), it does not seem that use of medical jargon alone is perhaps a valid reason for excluding patients from letters. Cases were found where participants were provided with letters which adhered to *NICE* guidelines (59):

> *"…sometimes in uh medicine um it gets so wrapped up in gobble-de gook that I can't even understand whereas…the discharge letter from the hospital… I felt it was a good summary that I could understand and I was kept in the loop…"*

The phrase *"in the loop"* had 5 corpus hits by 4 participants. Relating to RQ7, the metaphorical idiom "*in the loop"* was used by these participants to convey that receiving letters makes patients feel informed and included (L80-4):

L80	doctor care I have always been kept	**in the loop**	always been given loads of
L81	is sent to her (.) so long as I am kept	**in the loop**	and have a copy then um (.) or
L82	(.) but you know keeping the patient	**in the loop**	(.) is that's what I think myself but
L83	GP surgery but I couldn't be included	**in the loop**	on my email address and the
L84	things like that so I think I was kept	**in the loop**	quite well and quite informed

One poignant example regarding *feelings* was where a patient participant described how they perhaps felt seeing their late spouse's discharge letter would have aided closure on their spouse's death:

> *"…in the case of my wife I would have dearly loved to have known what happened…she had um pneumonia and was taken into hospital and 2 weeks they cleared that (.) only to find that she was riddled with cancer one of those things you know (.) and there was nothing they could do but I would have liked to have been able to look at that…there is certain advantages and I understand a lot of people wouldn't want to know… to this moment I don't know that they have got this right…"*

Although, addressing RQ7, the majority of participants favoured written communications, a few did not. One participant expressed that they would not want a letter as they felt it should be available electronically due to the paper waste, *"it's the electronic age so you don't need the letters…as the information is* *right in the computer…"* This participant had concerns over the cost to the *NHS* for producing copies of letters for all patients. Q3 responses were categorised as positive (28/50 – 56%), neutral (2/50-4%) or negative (20/50 – 40%).

Main findings in response to Q3 (how did you feel about the information you were given?)
• Letters can reduce or alleviate anxiety thus improving and supporting patient well-being. • Patients value receiving information and feeling better informed. • Patients can be resourceful in terms of looking up unknown terminology.

Q4 – what written information would you like to be given or sent when being discharged from hospital and why?

Across lines for "information" (N=68, LL=502.86, dispersion= 32/50 – 64%), corresponding to RQ7, there appeared to be a theme of preference in favour of receiving information with a focus on combinations of written and verbal information where one reinforces and compliments the other (random sample in figure 8.4.6 below).

Figure 8.4.6 Sample of 10 random concordance lines for lemmatised form of "[INFORMATION]"

L85	um may feel that too much	**information**	is scary but the thing is you can prepare
L86	medication so I think detailed	**information**	from day 1 to the final letter should be given
L87	they provide you loads of	**information**	but you can't remember everything and so
L88	looking forward to getting detailed	**information**	as to the extent to which the disease has
L89	situation and you need to have the	**information**	in the discharge it needs to be clear to
L90	the end because uh (.) that has the	**information**	you need (.) it tells you what is going to be
L91	To be honest I have (.) the	**information**	that I received was ample was sufficient for
L92	the near future just more practical	**information**	on um on your wellbeing if you like how
L93	should give you all the relevant	**information**	verbally and by letter (.) I know it probably
L94	bit more information and better	**information**	(.) [END OF QUESTION RESPONSE]

"Information" was often framed as a "need" as opposed to merely a "want" (L89-90). This is interesting as the question asked what they would *"like"* and so was centred on desires as opposed to *needs.* For 4/50 participants this "need" was explicit, (e.g. "*you need to have the information in the discharge*"). Within other lines, the "need" for information was more implicit and conveyed through indicative phrases (e.g. *"important" "anything else is…not worth talking about")*. One participant drew on the field of basic human needs in terms of feeding to suggest they should not be *"starved"* of information. Additionally, a few participants described how receiving letters can allow patients to correct inaccuracies, and that this can improve the record quality and prevent adverse outcomes (e.g. readmissions).

Hand-searching uncovered that the majority of participants (44/50 88%) wanted to receive a discharge letter. The remainder of participants expressed preferences for other information combinations (e.g. verbal and leaflets), did not want letters, or did not clearly specify. Transcripts were also manually searched for "missed" patterns. Those found included a need for: a summary of test results, relevant contact information for queries and follow up, and the name of the discharging physician, information regarding follow up plans, aftercare information, management advice, recommendations and medication plans.

Main findings in response to Q4 (what written information would you like to be given or sent when being discharged from hospital and why?)
• Receiving a copy of the letter can allow patients to correct inaccuracies. • Most participants (88%) wanted to receive the discharge letter, although only 64% had received it. • Many participants felt written information was a necessity.

Q5 – would you prefer to receive a direct copy of the letter sent to your GP or a separate letter specifically addressed to yourself?

Relating to RQ7, this Q asked participants whether they would prefer to receive a copy of the letter sent to GP or one specifically for themselves. The corpus yielded 36 hits for lemma "[COPY]" (dispersion 22/50 texts) but only 8 hits for lemma "[PERSONALISED]" (dispersion 5/50). Concordances for these words were examined (samples in figures 8.4.7-8 on the next page, L95-112). "Personalised" lines contained mixed participant viewpoints. 4/8 of the lines (8% of patients in study sample) seemed to portray preference for "personalised" letters (L98-9, L101-2) and one participant says this would be *"best"* (L99). However, within the other 4 lines, several participants appeared indifferent *"I don't mind"* (L97), and one was clearly against the practice, *"it would be going too far"* (L100). "Copy" lines seem to show preference for "copy" letters (L103-112) although responses were not always strongly weighted or enthusiastic; some participants simply described that a "copy" would be *"fine"* (L107). Extended quotations for "copy" lines were explored to ascertain *reasons* for this emerging "copy" form preferential; reasons varied. One participant, comparably to findings from the realist review (chapter five) (575), felt copy letters should be received as information should not be *"hidden from you"*. Another participant rationalised that the GP and patient having the same discharge "copy" simplifies communications and justifies that to have different discharge forms would *"defeat the object"* and that *"it's absolutely fine how it is that they both correspond with each other"*.

Figure 8.4.7 All concordance lines for "personalised" with the Q5 sub-corpus

L95	details the specific patient (.) the	**personalised**	information these are the sort of
L96	had done just a little bit more	**personalised**	letter but on the other hand I would
L97	I don't really mind though a	**personalised**	one because I don't know the
L98	it would be nice to have a	**personalised**	one because obviously what they
L99	that far but to me that's what a	**personalised**	one would be best (.) you know its
L100	would be going too far to ask for a	**personalised**	(.) bit to what you need to look out
L101	I think I would have liked a	**personalised**	is always nice to have
L102	yeah I think a	**personalised**	letter is but something like this

Figure 8.4.8 Sample of 10 lines from 10 different participants for "copy" in Q5 sub-corpus

L103	I would just like a direct	**copy**	of what goes to the GP receives (.) I don't
L104	Well I'm quite happy to have a	**copy**	of the letter sent to the GP (.) I'm not
L105	just because he is a GP (.) I like the	**copy**	that I have which is corresponds with
L106	but for me personally yeah direct	**copy**	[END OF QUESTION RESPONSE]
L107	tells me what I want to know (.) and a	**copy**	of that would be fine (.) Yeah (.) it
L108	no I think just have a	**copy**	of what goes to the GP probably just
L109	but I would have been expecting a	**copy**	follow up from the doctor just to explain
L110	um just a	**copy**	of the letter to the GP would be absolutely
L111	and I think yes we should have a	**copy**	of things sent to the doctor but you know
L112	from [NAME] I think I like to see a	**copy**	of the GP letter (.) um yeah this erm he

Patients explained that having a copy of the GP letter keeps them informed and acts as a reference for the future:

> *"No I think just have a copy of what goes to the GP…I keep these things so I can refer back to them…you might forget all of these little things you know…"*

A reservation commonly expressed about patients receiving GP letters is that in cases of bad news, it may be upsetting (186, 394, 489, 493, 517, 540, 546, 554, 575). However, a case was found where a participant reflected on this in light of their serious cancer diagnosis. They explained that for them it was important to have the letter and to know the extent of the prognosis (3 months) so they could decide a treatment plan which was right for them. The participant did acknowledge that others, faced with similarly upsetting news, may not feel the same:

> *"…when I had cancer … we said we have got a holiday booked and I am going on it and they said oh no we must start this treatment now and I said that's exactly what you did to me and my partner and we never got away again and then she died so (.)…but I can understand I suppose there might be something in the GP letter that some people might not be able to be ready for… but me personally if it's just a thing about me then I would say I would want a direct copy of what the GP gets"*

Some participants expressed that they would prefer to receive a "copy" but raised concerns or doubts as to whether other patients would agree and understand the jargon: *"I can see for some people…they wouldn't have a clue what it was saying and so they would get themselves in a state (.) But I personally asking the question to me would rather have a copy"*. This pattern was seen in "medical" lines (N=7 in 7 texts) (sample in appendix H). Participants seemed confident on their own ability to decipher medical terms but questioned whether others would be able to do the same. This pattern of uncertainty and conflicting opinions around GP copy letter comprehensibility to patients was also seen in lines for the lemma [UNDERSTAND] which had 23 hits (see figure 8.4.9 overleaf, L113-22). One participant queried whether patient letters are for bureaucratic purposes, *"it just seems to me out of bureaucracy you send a copy to the GP and send a copy to the patient (.) And I'm not too sure that's necessary".*

Figure 8.4.9 Random 10 lines for lemmatised form of "[UNDERSTAND]" in Q5 sub-corpus

L113	what they write to a GP I might not	**understand**	as well as a letter specifically tailored to
L114	into anything that a lay person can	**understand**	and you know I was quite surprised
L115	have got medical knowledge so I would	**understand**	it and I would like to see exactly what
L116	I don't	**understand**	why there should be a difference in what
L117	take it with to the GP and say I don't	**understand**	the third paragraph here that is talking
L118	think (.) anymore of it (.) because I	**understand**	all that so that would be it as far as I am
L119	and I read it but whether I would have	**understand**	it I don't know and probably not I would
L120	in plain English so that everyone can	**understand**	it and that's how it should look Yeah
L121	in there that I don't (.) I wouldn't	**understand**	and I think (.) it's not necessary (.) for
L122	like a patient one (.) because I would	**understand**	it more maybe than one that goes to the

Addressing RQ7, hand-searching found: 31/50 participants (62%) preferred to receive a direct GP copy letter, 9/50 (18%) had no preference, 7/50 (14%) wanted a patient personalised letter, 2/50 (4%) wanted to receive both forms, and one (2%) wanted neither.

Main findings in response to Q5 (would you prefer to receive a direct copy of the letter sent to your GP or a separate letter specifically addressed to yourself?)
• Patient letters can reassure that information is being shared and increase transparency. • Experiences of patient personalised letters were uncommon but framed negatively. • A minority of participants wanted to receive a personalised letter (14%) or both (4%).

Q6 – would you like to always be given this letter or would you prefer to choose each time you are discharged?

In line with RQ6, Q6 lines were dichotomised between participants who would prefer an automated letter receipt system and those who would like to choose each "time" (L123-4):

L123	um I think probably all the	**time**	I would want to know what's been going on
L124	uh (.) probably choose each	**time**	you are discharged actually (.) there are sometimes

This dichotomy was also seen in “opt” lines where participants explicated what letter system would work best (N=17, LL= 192.39, dispersion 11/50 texts) (illustrative sample manually selected from “opt” lines for 10 different participants in figure 8.4.10, L125-34).

Figure 8.4.10 Sample of 10 lines from 10 different participants for “opt”

L125	think it would work better as an	**opt**	in that patients were given a letter (.) I
L126	(.) rather than if it’s the addition	**opt**	out yeah
L127	this occasion (.) I think probably an	**opt**	out to be honest with you (.) I think the
L128	Yeah (.) um (.) I think the first time	**opt**	in (.) I think they should have a discharge
L129	they have been doing I mean you could	**opt**	in to it anyway (.) yeah without having to
L130	(.) I think well I guess its good (.)	**opt**	out really from my point of view (.) because
L131	the tests were (.) why why should I	**opt**	in for that (.) it should be automatic it
L132	if you need to erm I think opt in	**opt**	out would be good (.) because obviously if
L133	those who don’t want it they just	**opt**	out (.)
L134	I don’t know but yeah I think an	**opt**	out (.) I think it should be a standard thing

4/11 (36%) favoured “opt in” and 7/11 (64%) favoured “opt out”. Reasons for “opt in” preference tended to include making sure there is no waste and ensuring that letters are only received by those who want them (L125). Reasons for “opt out” preference were that it should be automatic and that it is the patient’s right to view information so unless they *do not* want it, they should not have to take action (L130-1, L134). One participant noted that as only a few would want to “opt out”; this system could reduce inadvertent errors:

> *“I think there is probably less room for errors and mistakes if it’s the norm (.) Rather than if it’s the addition”*

Lines for the lemma “[AUTOMATIC]” (N=15, 10/50 texts) reinforced favourability for an “opt out” style system due to its potential for consistency (see figure 8.4.11 overleaf, L135-44). Within “automatic” lines, patients articulated that they should not be burdened with asking/choosing each time (L137-8, L143) particularly if they are not feeling well, *“I think if you are not feeling well you don’t want to make decisions about stuff do you”*. Reflections on the wider public opinion were that only a minority of people would not want to receive letters; this was indicated through low level quantifying language such as *“some” “fewer”.*

Figure 8.4.11 Random sample of 10 lines for lemma "[AUTOMATIC]"

L135	why should I opt in for that (.) it should be	**automatic**	it should just be protocol (.) its
L136	think it's a good thing and for that to be	**automatic**	as this obviously is (.) I mean
L137	else to go astray whereas if you do it	**automatically**	then I think you (.) it's probably
L138	on the individual so rather than it being	**automatic**	which I favour some people
L139	to have one every time yup (.) well	**automatic**	yes
L140	no always give it (.) have a letter (.) yes	**automatic**	yes (.) yeah for me personally
L141	I think probably just	**automatically**	I think it should be their policy
L142	would not presume to open it (.) so yes	**automatic**	(.) ohhh (.) okay so I know they
L143	bit I had to ask them for (.) they didn't	**automatically**	give you that (.) and he said
L144	I would like a letter then it would	**automatically**	come through and you

Two participants said that as the letter refers to their "body", they want the information:

> *"I like to receive things and I like to know what is going on with my body…"*
>
> *"No I want a letter all the time (.) It's my body"*

Use of personal singular determiner to pre-modify "body" emphasises that this entity belongs to the speaker and they possess ownership. These speakers are projecting "body" ownership to include a right to receive the letter contents. These concepts of patient inclusion and patient ownership resonate with the patient centred care and shared decision-making mantra often said to be coined by Valerie Billingham (313), *"nothing about me without me"*. One participant suggested letters could be improved through adding a patient specific section:

> *"So all you need to do is redesign the form so there's some additional information on there for the patient because…this form actually isn't very well designed for the patient (.) As it stands this form is a tick box drug form for the medical profession"*

This suggestion resonates with GP ideas (chapter seven) and is a potential solution for producing one letter which meets GP and patient needs. Addressing RQ7, hand-searching found 44/50 (88%) participants would always like letters and 6/50 (12%) preferred to choose.

Main findings in response to Q6 (would you like to always be given this letter or would you prefer to choose each time you are discharged?)
• Participant preference for “opt out” systems of letter receipt. • Participants favoured the reliability that can come with an automated process. • Letters could be improved by adding a section specifically for the patient.

Q7 – how do you think the process of patients receiving written discharge communication can be improved?

Participants emphasised positive outcomes of receiving letters and articulated that greater consistency relating to this practice is required:

> *“It should be a should not a guidelines or we recommend this should happen (.) Because there isn’t no negative to it is there if the patient don’t want it then they don’t have to read it so there is only going to be a positive”*

One participant suggested letter receipt should be recorded at the hospital for auditing:

> *“I think that it should be a part of their discharge to say did patient have a copy (.) Because then you would be able to audit really so even if it was like a yes or no box”*

Another participant suggested that providing patients with written discharge communications can increase their autonomy and encourage them to *“take ownership”*:

> *“So bringing us on board really and trying to get us to…doctors getting patients to take ownership of their condition rather than just taking pill after pill for years (.)”*

Participants argued that receiving letters means they can assist with actionable components to ensure nothing is missed (e.g. blood tests…). Several participants conveyed that electronic communications such as email may be superior and timelier to providing paper letters:

> *"So if it could be electronically as we said through email that would be fantastic I think it would speed up the time and free beds and free time for the doctor"*

Responding to RQ7, lines seemed to suggest that hard copies are perhaps becoming an outdated medium. Participants mentioned concerns that paper copies of documents can be lost, *"if I get a piece of paper I could lose it (.) The doctor can do the same".* One participant explained that in their view, letters should no longer be placed in sealed envelopes as this process does not allow information to be easily checked and verified:

> *"Stop putting a discharge letter in an envelope because it needs to be checked (.) If you are meant to be discharged with something how are you supposed to know you are meant to have it if you can't see the discharge letter"*

Main findings in response to Q7 (how do you think the process of patients receiving written discharge communication can be improved?)
• Providing patients with letters can increase their autonomy.

Q8 – is there anything else you would like to talk to me about today related to written discharge communication?

Many participants in response to Q8 voiced that they could not "think" of "anything" else to add (e.g. *"I can't think of anything*). This suggested the interview questions were sufficient for attaining viewpoint saturation on discharge communication (line samples in appendix H).

Participants conveyed that quality of discharge communications needs improvement. This encompassed communication between HPs and GPs (e.g. *"there is not enough communication between the hospital and doctors anyway"*) and patients and doctors, including HPs and GPs (*e.g. "your doctor should be told when you leave the hospital"*).

Additionally, manual reading of “hospital” concordances found that four participants commented on the variation of discharge communication and considered benefits of standardised practices (L145-50):

L145	some standard quality within *NHS*	**hospital**	areas I think that’s a good point don’t
L146	that’s a point isn’t it (.) so are some	**hospitals**	good at discharging and following up
L147	hospital services here it’s says each	**hospital**	has its own discharge policy um I just
L148	helpful information you get from the	**hospital**	verbally (.) well I assumed everybody
L149	they should give all the details to the	**patient**	in the discharge letter at least (.) during
L150	know most patients want to be a good	**patient**	(.) to have um a say in their medical care

One participant summarised that poor discharge communication with patients’ leads to adverse outcomes like readmission and speculates that such outcomes are likely more costly than providing good quality communication in the first instance:

> *“…if you don’t give the information to the patient (.) Patient will be back in the hospital maybe in a months time (.) that means again you have to look after him (.) you have to spend more money looking after him then typing a few letters”*

Main findings in response to Q8 (is there anything else you would like to talk to me about today related to written discharge communication?)
• Participants felt that written discharge communication needs improving.

Full patient corpus (all interview responses compiled): active and hand searching

Findings of interest were manually searched to ascertain whether they occurred once in the corpus, known as a *hapax legomena* (410), or multiple times. Full corpus searching provided insights into the content components important to participants in discharge letters. Participants suggested PALS team information should complement contact information for queries/concerns. “Treatment” lines (N=66), revealed that participants felt detailed accurate information relating to “treatment” as well as care management needs to be in letters. “Tests” and words relating to the semantic field of investigations showed semantic preference for “results” items and words which taxonomized the “test” type (e.g. blood). Comparably to GPs, patients expressed preference to know “results” of hospital "tests" within written discharge letters or else information relating to what "tests" (N=104)/ "results" (N=82) are pending and how these will be arranged. Samples are in appendix H.

Lemmatised "[UNDERSTAND]" had 172 hits in 80/400 texts (see sample produced through hand-searching patterns in "understand" concordance lines in figure 8.4.12, L151-60). Patterns across all "understand" lines which relate to the RQs are summarised in table 8.4.3.

Figure 8.4.12 Illustrative 10 lines from 10 different participants for "[UNDERSTAND]"

L151	that people you know couldn't	**understand**	you know medical terminology but for
L152	was difficult for a lay person to	**understand**	(.) because of the medical terminology in
L153	English so that everyone can	**understand**	it and that's how it should look (.) Yeah
L154	note because I would like to	**understand**	what they were saying and whether it
L155	and whatever (.) I wouldn't	**understand**	that whereas the discharge letter um I
L156	that somebody like myself can	**understand**	them as a patient (.) erm (.) and why
L157	terminology there I just do not	**understand**	whatsoever (.) and as I say contacting is
L158	because that is something I do	**understand**	but as for the rest of it I have no idea at
L159	very small (.) I didn't really	**understand**	it (.) it didn't inform me and I thought
L160	in a language that you would	**understand**	(.) because I think that is quite reassuring

Table 8.4.3 Summary of patterns in all lemma "[UNDERSTAND]" concordance lines

1) Assertions that patients want to "understand" their own health (L154-6, L158, L160).
2) Acknowledgements that maybe not all patients want to know about their health (L151).
3) Declarations that patients need to be able to understand the written information given to them and to increase likelihood of "understanding", acronyms and medical jargon need to be accompanied by lay language "understandable" to patients (L151-3, L156-8, L160).
4) Affirmations that written communications need to be accompanied by verbal communications and adequate patient counselling to avoid undesirable outcomes (e.g. confusion) (L154, L159).
5) Explanations that patient "understanding" of letters is important so they can continue to take care of themselves post-discharge and carry out any actionable items.
6) Insistences that to increase patient "understanding", letters should be legible (preferably typed) and written in clear plain language (English) (L153).
7) Letters can be a record for future consultations and for sharing with friends/family.
8) Letters can be reference when abroad so that salient medical information (e.g. medications), can be communicated with medical personnel even with heightened communication barriers (e.g. language barrier, patient unconscious…).

Hand-searching uncovered several participants drew on figurative language to include metaphor and idiomatic phrases to explain abstract concepts. Notably, several previous studies (21, 23) look at prevalence and use of metaphor in healthcare discourse. One metaphor of interest was *"singing from the same hymn sheet"* which is relevant to RQ7. This metaphor is used to convey when people are in agreement or scientific consensus (603) and saying/believing the same things. Within the patient corpus, this metaphor was drawn upon to illustrate the value of the patient and GP receiving the same letter, "*we can talk off the same hymn sheet we know exactly what we are talking about and that is very important"*. Interestingly, this metaphor was used by three independent participants but with the same over-arching meaning that patients and GPs receiving the same discharge letter can improve continuity of information which can aid and simplify communications and save time, *"it's just then you are both talking and singing off the same hymn sheet it saves time"*.

As outlined in section 8.3, partner/relative contributions were removed from the corpus in order that texts were uniformly focussed on patients' perspectives; this aided direct and fair comparisons between results and findings across the corpus. Several participants attended with a partner or relative. Those who formally participated signed consent forms; this occurred for 5 interviews (10%). Partners and relatives predominantly provided practical and emotional support and aided memory recall. No "missed" patterns were identified in their contributions; patterns and meanings closely overlapped with patient findings.

Main findings for full corpus

- Participants felt clear, accurate and detailed information relating to "treatment" as well as test results, follow up, medication, and care management needs to be in discharge letters.
- Participants suggested PALS team information should complement contact information.
- Jargon and acronyms should be avoided, where technical language and terminology is needed this should be accompanied by lay explanations.
- Letters should be written in simple plain English.

8.5 Discussion

Key findings

The findings and analysis for this study show a wide range of patient views on the topic of written discharge communication. A broad summary of main findings is found in table 8.5.

Table 8.5 Summary of main findings

Main chapter findings related to research questions*
• Participants' experience of receiving discharge letters was inconsistent. • The majority of participants valued receiving discharge letters but consideration of *choice* is important as not all patients wanted letters. • Providing letters can alleviate anxiety supporting wellbeing. • Participants felt letters required adaptions to increase usefulness: patient information section, avoidance of acronyms, jargon explained with lay terms.

** RQ6: According to patients, in what form do they currently receive discharge communication, and why?*
**RQ7: According to patients, should they receive or not receive discharge communication, why, and, in what form?*

This study contributes towards the previously limited research evidence on outcomes of patients receiving letters (see page 70 for definition of "outcomes"). A recent review by Harris *et al.* (194) on patient letters in 2018 concluded that, "*evidence to support the benefits of copy letter practice as described in health policy remains unclear"* (194) (p.2080). The review also found that, *"little is known about the impact of copy letters on health outcomes"* (194) (p.2080). This study looked at outcomes of patients receiving discharge letters through interviewing a diverse sample of 50 participants. There was a variety of participants in regard to age, speciality of care and setting; this contrasts with many previous studies which tend to focus on single specialties (486, 488, 489, 517, 518), particularly Cardiology (251, 522, 567) and Oncology (393, 394, 519, 555), or particular groups of patients (e.g. elderly) (535). This study found a number of impacts and outcomes of patients receiving letters, these were often described by participants as markedly beneficial or "positive" and included: increased understanding and awareness of condition and next steps (e.g. treatment plan), reduced patient anxiety and improved patient well-being, letter acted as reminder/reference, improved letter/record quality, actioned follow ups as patients able to prompt these if necessary, and increased patient satisfaction. Participants generally emphasised that for outcomes to be positive, letters should be presented in a clear and accessible format that reflects the priorities and information needs of patients.

Many participants either felt they understood all or enough of the letter for it to be useful to them or they were able to clarify unknown terms through internet searching or other resources. These findings may be likened to those reported in Brockbank (551) and Baxter *et al.* (554). A concern expressed by clinicians is that patients receiving letters will lead to an increase in patient queries and appointments (197). However, no participant within the sample reported seeing their GP to have their letter explained. Similarly to findings from the GP data in chapter seven, participants argued that the letter in itself can be a record and reminder but may not be sufficient or appropriate to convey new or complex information in isolation. Thus, supporting previous studies in this area (493), GPs and patients seemed to agree that letter provision needs to be within the context of adequate patient counselling.

The realist review (73) from chapter five found that there was limited evidence on outcomes for contexts when patients *had not* received letters. This study found several impacts and outcomes of cases within this context (*had not* received letter) to include: letter inaccuracies, “missed” follow ups, patients unable to fully remember title of diagnosis or recommendations, and patient confusion and anxiety at what occurred and what will happen next. Hence, this study, contrary to clinician perceptions reported in previous literature (186, 497, 502, 510, 517, 554, 574, 575), found outcomes for patients receiving letters tended toward being “negative” when patients *had not* received letters and “positive” when they *had.*

Copying letters to patients is currently considered to be good practice in the UK (63, 69, 194). However, despite this, and past studies reporting high rates of patient preference for receiving letters (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574), previous literature has reported inconsistency of this practice (186, 554). This study has contributed towards providing an update on evidence in this area through collecting data relating to 50 patients from within the West Midlands, UK. In response to RQ6 and RQ7, the majority of participants in the study wanted to receive the discharge letter (88%), although only 64% had received it. Some participants were able to describe occasions where they *had* and *had not* received letters. Participants appeared generally unsure about reasons for *why* this inconsistency occurs; they implied that contextual factors such as time limitations of discharging physicians and the differing hospital discharge policies may have had an impact. Notably, it is unclear whether this finding of inconsistency may or may not still be applicable to the wider *NHS* population.

The study was strengthened by the high availability of letters at interviews (43/50 or 86%) which reduced recall bias. Participants who were shown letters at interview (N=15) were offered the opportunity to keep the letter. Although this uptake was not formally documented, participants uniformly responded positively to this opportunity and opted to keep the copy (e.g. *"Yeah I would [like to keep it] that's great"*). Showing participants their letters, if desired, was felt to be an important element of the protocol; it reflected the project foundations of a drive to increase patient autonomy, and facilitate patient-centred care.

Although participants in the study generally expressed preference to receive discharge letters (RQ7), some had reservations or were not in favour of this practice. Due to the qualitative nature of data and the relatively small sample size, it was not possible to characterise those who did not want to receive letters in terms of demographics or discharge characteristics. Contexts relating to such participants included: those uninterested in the information, participants who had frequently attended hospital for the same issue, and those who did not want to waste paper, some of whom had preference for email instead.

Generally, it was conveyed by participants that letter receipt opinions were a result of personal preference rather than specific to particular specialties or episodes of care. Many participants suggested a possible solution for patient preference variation would be to offer patients a *choice* about when and whether they wish to receive a copy letter. This suggestion is supported by findings from the realist review (73) and past studies (67, 188, 506, 554). Participant responses seemed to exhibit preference for "opt-out" style letter receipt systems which would account for individuals who do not want letters whilst still allowing the majority of patients to receive letters. Participants noted that those who did not want to be exposed to the letters' contents could dispose of the letter, pass it on to others (e.g. partner), or decide not to read it. Participants suggested that they should be able to log preferences on their electronic health record (e.g. at GP practice) to increase consistency of letter receipt. Participants were concerned about systems of letter receipt that required patients to make choices at the time of discharge when the patient may be fatigued or cognitively impaired (e.g. under effects of general anaesthesia *"you forget anaesthetic makes you forget things")*.

Many patients favoured receiving a copy of what is sent to the GP (32/50 62%) but, corresponding to the limited literature on this topic (207, 531, 539), a few (7/50, 14%) did prefer the idea of a personalised letter. The remainder of participants either had no preference or wanted both or neither letter form. Crucially, of the few participants who reported recent experience with receiving patient personalised letters, these were often described negatively. Those who expressed favourability toward patient personalised letters appeared to be basing this on hypothesising the potential usefulness of these letters rather than evaluating real-life experiences. Reasons for personalised letter preference tended to include reference to features which resonated with the *NICE* guidelines (59) and past works like lay explanations for technical terms (67, 523, 554), an additional letter section for the patient (e.g. dietary advice), and a simple summary of test results. Sample participants also suggested PALS and relevant contact information should be included within the letter. Arguably, these are elements which could be integrated into the letters sent to GPs to ensure the letters are "patient friendly" whilst at the same time adhering to patient preferences for receiving copies; this would eradicate the need for the production of two separate discharge letters.

Overall, not only has this study provided evidence on the impact of copy letters on health outcomes but this study has also provided evidence to support the benefits of copy letter practice as described in health policies (59, 62, 63, 69, 194) such as the "good practice guidelines" for copying letters to patients (63) and "please write to me" initiative by *AoMRC* (69).

Consideration of the implications for practice takes place in chapter ten (section 10.8).

Study considerations

The recruitment occurred to targets and participants demonstrated good interest in the study; 10% of invited patients participated. Although less patients were invited to participate (N=489) than originally planned (target N=700), the minimum recruitment target of 30 patients was achieved; 50 patients participated across 17 GP practices. A strength of the study was the relatively even distribution of participant cases relating to GP-assessed “successful” (64%) and “unsuccessful” (36%) discharge letters.

Eligible patients in Coventry were less likely to participate than those who were eligible in more affluent areas. Coventry has a higher percentage of black and minority ethnic population compared to the national average and other sub-regions within the sample (598). The fact that Coventry was under-represented in the sample meant that views from these groups were also under-represented. A large number of participants were from South Warwickshire (registered GP practice and discharging hospital) which is a relatively affluent area with a high proportion of white middle-class residents (597); this meant a high proportion of the participant sample were white and middle class. Furthermore, the skew toward South Warwickshire recruitment determined that patient views in this study largely related to the one main hospital within this region; this was disproportionate compared with the original letter sample in chapter six. Further differences between sub-regions in terms of data patterns were not expounded; due to the small sample size and number of uncontrolled variables, statistical comparisons were not appropriate. Recruitment of ethnic minority, low-literacy and other marginalised groups was very low; such individuals may feel differently about receiving letters to those sampled here. Overall, the interview participant sample was somewhat homogenous and not as diverse as planned and so generalisability of findings is limited.

Responses to educational qualifications (40%) and salary (36%) were lower than other demographic questions. Several participants commented verbally at the interview that they had no qualifications and so had left this box blank; this skewed data toward higher level qualifications (A level+) and does not fully represent the educational variation of participants. Similarly, some participants whose income was benefit welfare or pension verbally stated this but choose to leave the salary question blank; this skewed income data toward higher earners. Due to the skewed nature of reported information on salaries and qualifications, it is difficult to accurately describe the sample socioeconomics. It was noticeable that those who less readily provided information included several participants who were non-Caucasian in terms of ethnicity. Subsequently, the demographic results demonstrate some of the issues with self-reporting;

demographic reporting was perhaps skewed toward those who felt confident in their societal status and providing this information. This level of patient confidence was potentially affected by the wider surrounding context of Brexit. Overall, the sample was more diverse than the reported ethnicity demographics suggest.

There was a higher proportion of participants associated with inpatient discharge (88%) than that of the original letter sample in chapter six (76.7%). As the study sought to gather a range of discharge experiences, this is a study limitation as findings cannot be assumed to apply to outpatient discharges. This over-representation of inpatient discharges may have been due to the GPs misinterpreting the "hospital discharge" element of the study criteria, GPs choosing to select inpatient letters as they represented key exemplars, or because inpatient episodes are more likely to involve more significant clinical events and so this group of patients may have had a stronger inclination to take part in the research.

Notably, in this chapter (as well as the remainder of the thesis), direct keyword comparisons have not been carried out between the patient corpus and GP corpus; there were two main reasons for this. Firstly, the broad plan for analysis, as described in chapter 4, sought to focus on analysing and presenting the results for each study primarily in isolation, before making in depth comparisons in chapter 10. Secondly, direct keyword comparisons between corpora are biased in that such comparisons inherently focus on "differences" (604); this means that such comparisons can fail to take into account words which are similarly frequent in both corpora (604). Although "differences" between groups (i.e. patients and GPs) were potentially of interest, this research planned to look at patterns *within* groups, as well as differences *and* similarities between groups. Therefore, it was judged appropriate to conduct separate, rather than directly comparative, keyword analyses for chapters 7 (GP corpus) and 8 (patient corpus).

Further study considerations of limitations are found in chapter ten.

8.6 Chapter summary

This chapter has built upon previous evidence through CL examination of patients' views on *how* discharge communication practices can be improved to enhance patient experiences and outcomes. Overall, impacts on participants' experiences were broadly framed by participants as more *negative* when patients had not received discharge letters and more *positive* when they had. The lack of letters received by participants represents a missed opportunity to involve patients in their care and promote self-management in order to improve experiences and outcomes. Overall, this study has contributed towards the previously limited research evidence on outcomes of patients receiving letters.

9. Study 4 Hospital clinician views toward written discharge communication: a survey of hospital professionals

This chapter presents the results of the hospital practitioner survey (study four). Its aim was to explore hospital practitioner perspectives on why patients currently receive or do not receive discharge communication and how this process might be improved. The survey design and survey analysis plan are described in section 9.1. Section 9.2 overviews the study participants. The results are presented in section 9.3 and a discussion of the findings in section 9.4. The chapter contents are summarised in section 9.5.

9.1 Survey design

The design of the survey was not finalised until after the data collection for other studies had taken place. The rationale for this was to allow preceding studies to inform the survey design. Review findings and literature from chapter five were drawn on to inform the survey protocol and the survey question design in line with the study research questions. This included the mixed evidence on whether or not and how patients should receive letters, benefits of this practice (189, 190, 193-197), and the need for more high quality evidence in this area (189, 194, 207). Survey guidance literature (464, 469, 470, 605-611) was consulted to consider design issues e.g. avoidance of leading questions. The survey was targeted toward those who wrote or signed the discharge letters in the research sample from chapter six. These were predominantly doctors, but nurses and other practitioners were also eligible for inclusion. Therefore, the group of letter writers/signatories are broadly referred in this chapter as Hospital Professionals (HPs).

Research questions (RQs):

RQ8: According to hospital practitioners, do patients currently receive discharge communication, and why?

RQ9: According to hospital practitioners, should patients receive or not receive discharge communication, why, and in what form?

Objectives:

1) To gather hospital practitioner perspectives on whether and how they think patients should receive discharge communication through surveys.

The final survey comprised 15 main questions and 12 optional questions; the final version is in appendix I. The optional questions were objective measurements and included "administrative questions" (605) at the start of the survey to identify the participant e.g. hospital role, and "classification questions" (605) at the end to gather demographic information e.g. age. The inclusion of these optional questions permitted answers to be potentially grouped by different independent variables for pattern-spotting and statistical analyses.

The survey length was limited to reflect the time constraints of HPs (464). The first 14 questions were closed to allow quick answering, and Q15 formed a single open question, placed at the end of the survey so as not to deter participation (464, 469). Thus, the survey could be completed within 5-15 minutes only, dependent on the extent to which the participant chose to provide a free text response in Q15.

In line with the research questions and De Vaus' (469) categories of question types: survey questions Q2, Q8, Q14 asked after individual HP practices of writing and sending written discharge communication (*behaviour questions* (469)), questions Q9-Q13 asked about participant views on how they think this process should be undertaken (*attitude questions* (469)), questions Q1, Q3-7 (*belief questions* (469)) asked HPs to reflect on a letter (from the research sample) they had written/signed and assess in terms of quality. Q15 asked participants to comment further and provide reasons for answers (464, 606).

Q2, Q8-14 were closed multiple choice questions with check boxes for respondents to easily "tick" (608); these produced categorical or nominal data (469).

Questions 1 and 3-7 responses (participant letter quality assessments) were recorded via the participant selecting a numerical rating on a scale from 1-9. The scale was an odd number to allow a midpoint “neutral” response (5) (469, 606, 607). Although 1-9 is longer than the popular five or seven points, as De Vaus (469) explains, longer scales can allow for greater discrimination, particularly on the “positive”/”top” end of the scale which people may tend towards. Each end of the scale featured bipolar evaluative adjectival phrases/adjectives (607, 610) e.g. “informative”/” uninformative”. The adjectives are polarised forming a “semantic differential” (469, 609-611), an alternative to Likert-style (609) scales. Adjectives were selected for measuring varying dimensions of HP beliefs toward the quality of their letter (609). The numerical rating scales (Q1, 3-7) possess both ordinal properties e.g. no guaranteed equal intervals (607) and linear scale properties which “approximate” interval scale questions e.g. no true zero-point (606, 608, 609). For pragmatic purposes, the scores for these rating scale questions are treated as discrete interval data (469, 607) from hereon; this should not have introduced severe bias (607).

The survey may be defined as a combination of a descriptive or observational design which examines the “current state of affairs” (612) and “causal comparative design” whereby effects and outcomes are observed and then variables isolated retrospectively to examine associations (586, 612). This style of design is suggested (586, 612, 613) to be valuable for investigating behaviour patterns, such as those asked about in the survey.

The survey was subject to *NHS* ethical review and was approved on 04/05/2018 (Ref. 17/WM/0170). Data collection was planned to end in September 2018 in order to allow one year for data analysis and thesis write up. Consequently, given that the survey was not approved by the ethics committee until May 2018, it was necessary to start survey distribution immediately; the survey could not be piloted within the time limitations.

Invitation packs for the survey were sent to eligible individuals in external post by KW or delivered to the hospital for internal distribution. Additionally, an electronic version of the survey was sent to participating hospitals for circulation and this was also emailed directly to invited participants if possible. Invitation packs contained an invitation letter explaining how and why the HP had been selected, the survey (appendix I), an HP participant information sheet with further details, and a redacted copy of the sample discharge letter the HP wrote/signed/authorised for reference. Surveys were completed by participants themselves or "self-administered" (614). Benefits of this style of completion are its low cost and reduction of surveyor bias (464). Participating hospitals publicised the survey in advance to increase uptake and interest in the research. Surveys could be completed in digital or hard copy form.

Participants were given up to six weeks to respond to the survey invitation; this was deemed sufficient to balance time to allow consideration of participation whilst ensuring the recruitment period was of feasible duration. To increase uptake (606), non-responders were sent a maximum of three reminders over a six week period; these were sent directly via KW (e.g. email) and internally by the hospital (e.g. Research and Development department).

In line with survey scope and the small sample size, the statistical plan for analysis was predominantly descriptive (see chapter four). In keeping with common descriptive techniques (470, 586, 607), survey data was presented in tables according to the data type and then described narratively. Categorical data (Q2, Q8-14) was summarised with frequency tables and percentages, and the discrete interval data (Q1, Q3-7) was summarised with frequency tables, percentages, median, quartiles, and, where appropriate, standard deviation or skewness scores (469). The free text data for Q15 was narratively overviewed.

Where applicable, inferential or hypothesis-testing (470, 586) statistics were conducted. The analysis planned to consider all independent variables against all dependent variables for relationships and differences. It was expected that tests would need to be nonparametric (595, 615-617) due to the anticipated small sample size, categorical variables, and predicted skewed distribution, as is common in Social Science research (590). However, non-parametric tests were not without assumptions (464, 592, 593, 618-620); they required independent observations and that, *"the variable under study has underlying continuity"* (p.31) (595).

9.2 Survey distribution, demographics and response rate

The HPs who were eligible to participate were defined as being the authors of the 489 discharge letters that had been sampled by GPs. However, there were some issues (N=181):

1. **Participant overlap (N=118)** - this accounted for the majority of issues and occurred where letters contained the same named HP. For these letters, participants were sent one invitation pack relating to one letter. Where relevant, invitations for such cases prioritised the letters which related to duo/trio/quartet cases.
2. **Letter authorship (N=40)** – several letters had no named letter author.
3. **Hospital participation (N=16)** – not all hospital sites included in the letter sample took part in the survey; Hospital E and “other” sites did not. Therefore, these 16 HPs were not able to participate or be invited to take part.
4. **HP left hospital Trust (N=4)** – a few doctors had stopped working at the hospital.
5. **Legibility (N=3)** – some of the handwritten letters contained the author’s signature but their name was not decipherable and so these HPs could not be contacted.

As a result of the above, 308 HPs were invited to take part and after up to three reminders, there were 46 (14.9%) responses. The sample is summarised in table 9.2.1 below.

Table 9.2.1 Hospital sample

Hospital (Trust)	**Letter log count (full)**	**No. of invites sent**	**Response rate for hospital**	**Hospital representation in returned sample (%)**
1. Hospital A	120 (24.5%)	61 (19.8%)	15 (24.6%)	32.6%
2. Hospital B	269 (55.0%)	191 (62%)	26 (13.6%)	56.6%
3. Hospital C	22 (4.5%)	16 (5.2%)	2 (12.5%)	4.3%
4. Hospital D	59 (12.1%)	37 (12%)	2 (5.4%)	4.3%
5. Hospital E	13 (2.7%)	0	N/A	0
6. Hospital F	3 (0.6%)	3 (1%)	1 (33.3%)	2.2%
7. Other	3 (0.6%)	0	N/A	0
TOTALS	489 (100%)	308 (100%)	46 (14.9%)	100%

Table 9.2.1 shows that response rates varied across hospitals (~5-33%) and that hospital A was slightly over-represented in the survey participant sample when compared with the original letter sample from chapter six; hospital D, hospital E and other hospitals were under-represented.

A chi-square test, using Fisher's exact test due to expected counts of less than 5 (590), was run for hospitals vs. response rates. This showed no significant difference between response rates at different hospitals (χ^2=8.393 p=.061); this may mean there was no association but it is also possible there was an undetectable association.

Table's 9.2.2-9 display the demographic profile of participants. There is a range of demographic variation, particularly in regard to hospital role (ACP, FY1, consultant etc.). The number of roles within the survey participant sample (N=9) is almost equal to that of the invited sample (N=11); although there were no responses from ANPs or clinical fellows, these roles were of low proportions within the invited sample (0.2% and 2.3% respectively). The participant sample had a markedly low representation of specialties (N=17) compared with the invited sample (N=39). Variation is seen in regards to age and experience of the discharging physician, age (24-60) median=38 (IQR: 30, 48) M=40, and qualifying year (1982-2017) median=2004 (IQR: 1995, 2013) M=2003. Gender distribution is reasonably even (44% female, 56% male). There is less variety seen in relation to ethnicity (White/British ≥81%), hospital (89% of sample from hospital A and B), religion (58% Christian), and training country (87% trained in UK). To display the continuous variable age and qualifying year information more clearly and elucidate patterns (608), they were grouped into categories each spanning just under a decade. The age range was not normally distributed but has positively skewed distribution towards younger HPs (skewness=.386, kurtosis =-.897). Comparably, the distribution for qualifying year was negatively skewed towards HPs who had qualified more recently (skewness= -.348, kurtosis=-1.068) with a light left-sided tail (470). In addition, the tables show the proportion of GP graded successful/unsuccessful letters within each demographic variant. The following were observed but were not statistically significant:

- Junior doctors (N=9) produced a lower proportion of successful letters (22.2%) than unsuccessful letters (77.8%).
- Nurses/ACPs (N=10) produced a higher proportion of successful letters (80.0%) than unsuccessful letters (20.0%).

- Acute Medicine (N=5) and Cardiology (N=5) had higher weightings of successful letters (80.0% and 100.0% respectively).
- HPs who qualified in 1981-1990 (N=7) had a low rate of successful letters (28.6%).

Tables 9.2.2-10 display sample characteristics and are found below and on the following pages.

Table 9.2.2 Ages of respondents

Age	Frequency	GP successful rated letters (%)	GP unsuccessful rated letters (%)
21-30	9 (26.5%)	27.8%	23.1%
31-40	10 (29.4%)	44.4%	23.1%
41-50	9 (26.5%)	16.7%	23.1%
51-60	6 (17.6%)	11.1%	30.7%
Total	34 (100.0%)	100.0%	100.0%

Table 9.2.3 Hospital role of respondents

Role	Frequency	GP successful letters (%)	GP unsuccessful letters (%)
Nurse/ACP	10 (22.2%)	33.3%	9.5%
Junior	9 (20%)	8.3%	33.3%
ST/Registrar	7 (15.6%)	20.8%	9.5%
Consultant	19 (42.2%)	37.6%	47.7%
Total	45 (100.0%)	100.0%	100.0%

Table 9.2.4 Gender as identified by respondents

Gender	Frequency	GP successful letters (%)	GP unsuccessful letters (%)
female	15 (44.1%)	47.4%	46.2%
male	19 (55.9%)	52.6%	53.8%
Total	34 (100.0%)	100.0%	100.0%

Table 9.2.5 Ethnicity as identified by respondents

Ethnicity	Frequency	GP successful letters (%)	GP unsuccessful letters (%)
African	1 (3.1%)	0.0%	7.1%
Asian	1 (3.1%)	5.6%	0.0%
Black African	1 (3.1%)	0.0%	7.1%
British	5 (15.6%)	22.2%	7.1%
Indian	2 (6.3%)	11.1%	0.0%
Pakistani	1 (3.1%)	0.0%	7.1%
Welsh	1 (3.1%)	0.0%	7.1%
White	8 (25.0%)	22.2%	28.7%
White British	11 (34.5%)	38.9%	28.7%
White Irish	1 (3.1%)	0.0%	7.1%
Total	32 (100.0%)	100.0%	100.0%

Table 9.2.6 Training location of respondents

Country	Frequency	Successful letters (%)	Unsuccessful letters (%)
Internationally	6 (13%)	8%	19%
Nationally (UK)	40 (87%)	92%	81%
Total	46 (100.0%)	100.0%	100.0%

Table 9.2.7 Religion of respondents

Religion	Frequency	GP successful letters (%)	GP unsuccessful letters (%)
Atheist	3 (15.8%)	11.1%	20.0%
Christian	11 (57.9%)	55.6%	60.0%
Hindu	3 (15.8%)	33.3%	0.0%
Islam	2 (10.5%)	0.0%	20.0%
Total	19 (100.0%)	100.0%	100.0%

Table 9.2.8 Speciality of respondents

Specialty	Frequency	GP successful letters (%)	GP unsuccessful letters (%)
Accident & Emergency	4 (9.4%)	8.3%	11.1%
Acute Medicine	5 (11.9%)	16.7%	5.6%
Ambulatory Care	1 (2.4%)	0.0%	5.6%
Cardiology	5 (11.9%)	20.7%	0.0%
Cardiothoracic Surgery	2 (4.8%)	0.0%	11.1%
Care of the Elderly	2 (4.8%)	4.2%	5.6%
Colorectal Surgery	1 (2.4%)	4.2%	0.0%
Day Surgery	2 (4.8%)	8.3%	0.0%
Ear Nose Throat	3 (7.1%)	4.2%	11.1%
General Medicine	2 (4.8%)	8.3%	0.0%
General Surgery	3 (7.1%)	4.2%	11.1%
Gynaecology	2 (4.8%)	4.2%	5.6%
Pain	1 (2.4%)	4.2%	0.0%
Plastics	1 (2.4%)	4.2%	0.0%
Respiratory	1 (2.4%)	0.0%	5.6%
Trauma & Orthopaedics	4 (9.5%)	0.0%	22%
Urology	3 (7.1%)	8.3%	5.6%
Total	42 (100.0%)	100.0%	100.0%

Table 9.2.9 Respondent year qualified

Year qualified	Frequency	GP successful letters (%)	GP unsuccessful letters (%)
1981-1990	7 (15.2%)	8%	23.8%
1991-2000	12 (26.1%)	32%	19.0%
2001-2010	12 (26.1%)	32%	19.0%
2011-2017	15 (32.6%)	28%	38.2%
Total	46 (100%)	100.0%	100.0%

Table 9.2.10 GP letter grading frequency results

GP grading	Frequency
successful	25 (54.3%)
unsuccessful	21 (45.7%)
Total	46 (100.0%)

Table 9.2.11 provides a comparison between the features of original letter sample (chapter six) and the letters included in the sample associated with the participating HPs. This shows that the HP sample broadly reflected the features of the original letter sample but had less diversity in terms of specialties and South Warwickshire hospital(s) were slightly over-represented.

Table 9.2.11 Comparison between original sample and HP survey participant sample

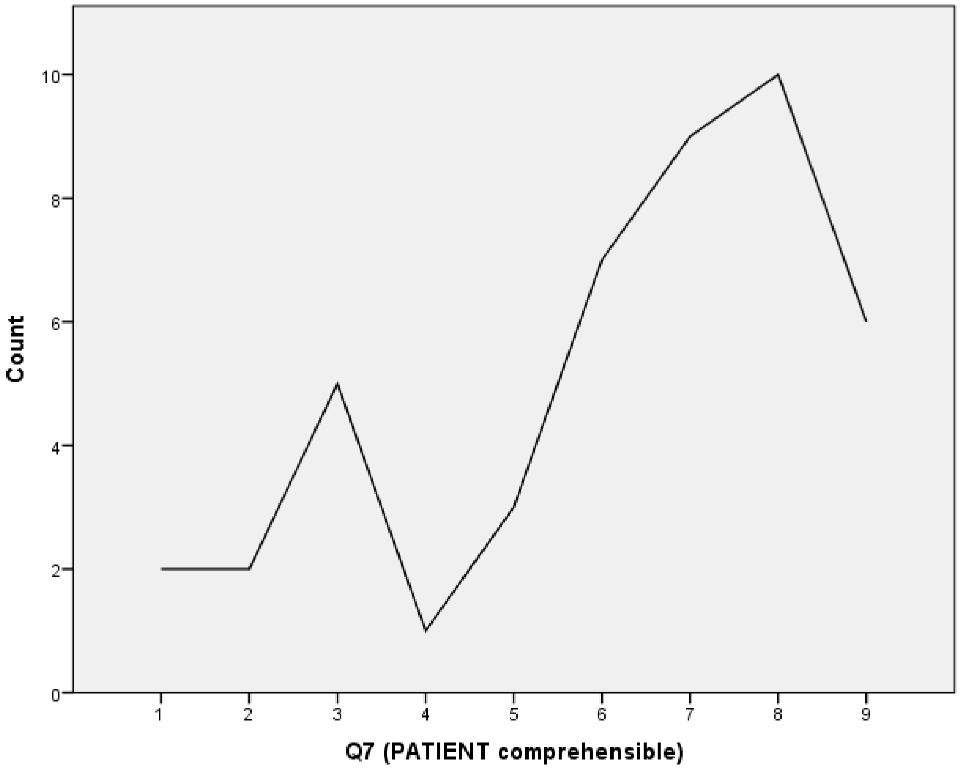
Characteristic	Original sample (chapter 6) (N=489)	HP sample (N=46)
GP grading	Successful: 291 (59.5%) Unsuccessful: 198 (40.5%)	Successful: 25 (54.3%) Unsuccessful: 21 (45.7%)
Hospital localities	Rugby: 3 (0.6%) Herefordshire: 59 (12.1%) Coventry: 269 (55.0%) North Warwickshire: 22 (4.5%) South Warwickshire: 120 (24.5%) Other: 16 (3.3%)	Rugby: 1 (2.2%) Herefordshire: 2 (4.3%) Coventry: 26 (56.6%) North Warwickshire: 2 (4.3%) South Warwickshire: 15 (32.6%) Other: 0 (0.0%)
No. of specialty	39 Specialties	17 Specialties
Hospital role	11 different roles	9 different roles

9.3 Survey results

Q1, and Q3-7 of the survey asked participants to reflect on a letter they wrote/signed and to assess the quality in relation to different content items e.g. diagnosis information, and for different audiences e.g. GP. The rating range for all of these questions was 1-9. The median for these questions was very similar, either 7 or 8. The median, as opposed to the mean, was considered as distribution was skewed for all of these questions and therefore the median was a more reliable measure of the average rating score (590).

For Qs1, 3-6, distribution was skewed negatively with heavy left-sided tails (470); rating scores clustered toward higher values. Participants generally rated their letters highly, tending to favour rating scores 7-9. Lower and mid rating scores were often not used. The exception was question 7 which asked HPs to *"please rate, in your opinion, how clear (comprehensible) you think the attached discharge letter is to a PATIENT".* In contrast to other questions, all rating variants were used and the highest frequency was not seen in the "9" rating. The median was 7 (IQR: 5, 8). A line graph is seen in figure 9.3.1 which shows the distribution and total count of rating scores used by HPs to answer Q7.

Figure 9.3.1 Line graph of count of hospital professional rating responses for Q7



The patient comprehensibility assessment rating results are negatively skewed with a light left-sided tail (470) where skewness=-.798 and kurtosis=-.375. The distribution shows two peaks, one at the higher end of score values and one smaller one toward the lower end.

The results for Q2 are in table 9.3.1 (N=46) on the next page. Q2 asked participants, *"how does this letter quality compare to other letters you write?"* The majority answered they felt the letter quality was the "same" (34, 73.9%), with very few answering "better" (2, 4.3%).

Table 9.3.1 HP assessment of whether sample letter represents their typical writing quality (Q2)

Q2 response	Frequency
better	2 (4.3%)
same	34 (73.9%)
worse	10 (21.8%)
Total	46 (100.0%)

Table 9.3.2 shows the results for Q8 (N=46) which related to RQ8. Q8 asked participants, *"how often do you copy patients into discharge letters?"* Most answered "always" (17, 37.0%).

Table 9.3.2 behaviour of HPs copying patients into letters (Q8)

Q8 response	Frequency
Always	17 (37.0%)
Mostly	8 (17.4%)
Never	10 (21.7%)
occasionally	11 (23.9%)
Total	46 (100.0%)

Table 9.3.3 shows the results for Q9 (N=46) which and asked participants, *"how often do you think patients should be copied into/given/sent hospital discharge letters/summaries?"* Many respondents felt patients should always be copied into letters (26, 56.5%).

Table 9.3.3 HP opinions on copying letters to patients (Q9)

Q9 response	Frequency
always	26 (56.5%)
mostly	8 (17.4%)
never	1 (2.2%)
occasionally	11 (23.9%)
Total	46 (100.0%)

Table 9.3.4 shows the results for Q10 (N=46) which asked participants, *"do you feel all patients should be offered a choice of whether or not they receive/are given a hospital discharge letter?"* The majority answered "yes" (30, 65.2%).

Table 9.3.4 HP opinions on patient choice of receiving letters (Q10)

Q10 response	Frequency
no	16 (34.8%)
yes	30 (65.2%)
Total	46 (100.0%)

Table 9.3.5 displays the results for Q11 (N=46). In line with RQ9, Q11 asked, *"do you think patients should receive a direct copy of the discharge letter sent to the GP or a personalised patient discharge letter?"* Most answered in favour of either a GP copy (23, 50.0%) or personalised letter (15, 32.7%).

Table 9.3.5 HP opinions on form of letter for patients (direct or personalised) (Q11)

Q11 response	Frequency
both	6 (13.0%)
GP copy	23 (50.0%)
neither	2 (4.3%)
personal	15 (32.7%)
Total	46 (100.0%)

Table 9.3.6 shows the results for Q12 which asked participants, *"what is your preferred discharge summary/letter form?"* There was preference for "structured" letter forms (28, 60.9%).

Table 9.3.6 HP opinions of preferred letter form (Q12)

Q12 response	Frequency
both	1 (2.2%)
dictated	9 (19.6%)
no preference	6 (13.0%)
other	2 (4.3%)
structured	28 (60.9%)
Total	46 (100%)

Table 9.3.7 displays the frequency results for Q13 which asked participants, *"should patients receiving hospital discharge letters/summaries be an opt-in or opt-out system?"* There did not appear to be particularly strong agreement for any of the options.

Table 9.3.7 HP opinions on whether letter copying should be opt in or opt out (Q13)

Q13 response	Frequency
neither	6 (13%)
no preference	12 (26.1%)
opt in	10 (21.8%)
opt out	18 (39.1%)
Total	46 (100%)

Table 9.3.8 overleaf shows the results for Q14. This question asked participants, *"how often do you think your discharge letter writing is in line with*

the Department of Health 'Copying letters to patients: good practice guidelines'?" (63). The question allowed a response variant for those who were unfamiliar with the guidelines which proved to be the most popular response answer (26, 56.5%). Only one participant answered "never" (2.2%).

Table 9.3.8 HP belief on whether their writing is in good practice guidelines (63) (Q14)

Q14 response	Frequency
always	3 (6.5%)
mostly	9 (19.6%)
never	1 (2.2%)
occasionally	7 (15.2%)
unfamiliar with guidelines	26 (56.5%)
Total	46 (100%)

The data was not normally distributed and therefore, as anticipated, parametric assumptions were violated (464, 592). Due to the small sample size (N=46), transformation was not appropriate (593, 618, 621). Hence, all possible inferential nonparametric tests for independent variables against dependent variables were run using *SPSS* software. Significance was set at the .05 level (621, 622). This alpha level (α) was selected as convention is usually to set the level to a maximum 5% likelihood of the observations occurring by chance alone, $p<0.05$ (464, 465, 613, 623).

The first set of test results was the chi-square test χ^2 (591-593). The χ^2 looks at differences between observed and expected values, those expected if the data was "randomly distributed" (624-627). The assumptions for χ^2 are that cell counts should have a frequency of five or more, total N should be >20 and variables should be independent and categorical (465, 592, 594). The first independent (IV)/explanatory variable (628) considered was hospital. In order to meet the chi-square test assumptions (frequency ≥5), hospitals with low counts were removed. This left hospital B (N=26) and hospital A (N=16). Table 9.3.9 on the next page shows the results for hospital cross tabulated against Q10 (outcome/dependent variable (DV) = views on patient choice for receiving letters).

*Table 9.3.9 cross tabulation Hospital * Q10 (should all patients be offered a choice)*

Q10 (should all patients be offered choice)					
			NO	YES	TOTAL
Hospital	B	Count	7 (50%)	19 (67.9%)	26 (61.9%)
	A	Count	7 (50%)	9 (32.1%)	16 (38.1%)
Total		Count	14 (100%)	28 (100%)	42 (100%)

The null hypothesis (H0) and alternative hypothesis (H1) are stated below (595):

H1: There is an association between hospital context and views on patient choice.
H0: There is no association between hospital context and views on patient choice.

The cross tabulation "contingency table" is 2x2 and so the critical value (DF=1, p<.05) for χ^2 =3.84 (590, 594, 613). Of the hospital B HPs, 19 or 73.1% answered "yes" to patient choice and 7 or 26.9% answered "no". In regard to hospital A HPs, 9 or 56.2% answered "yes" and 7 or 43.8% answered "no". As the sample is somewhat small, Yates correction has been used (590, 625, 629); χ^2 (1, n=42) = .618, p=.43, phi=-.17. In this case, the p value .43 > α, the results are not significant, and so the null hypothesis cannot be rejected at the 5 per cent level (465, 619, 626). Due to the very small sample size (N=42), this most likely means there is an undetectable association, that is, insufficient data to reject the null hypothesis (615, 618, 630). However, it may also mean there is no association.

Similarly to the chi-square results for hospital versus patient choice (Q10), the results for hospital (IV) against GP letter grading (DV) were not significant. The distribution of gradings appeared reasonably equivalent within and between the hospitals: χ^2 (1, n=42) < .000, p=1, phi=.037. This P value is not significant and so H0, that there is no association between hospital context and GP letter grading, cannot be rejected at the 5 per cent level. Likewise, the chi-square results for gender (IV) cross tabulated against GP letter grading (DV) were not significant: χ^2 (1, n=32) < .000, p=1, phi=.012. All other chi-square tests run for possible combinations of IVs against DVs were also not significant and so are not displayed here. Hence, the above examples exemplify the χ^2 method and the pattern of failure to reject the null hypothesis within the sample. This means there is a possibility of no association between the variables. It may also mean there was an undetectable association in that the small sample size and non-parametric testing did not produce sufficient evidence to reject the null hypotheses. Additionally, continuous variables were plotted against each other in scatter graphs and no correlations were seen.

The next set of test results to be presented is the Kappa measure test results. A kappa measure (588-590) looks at the proportion of agreement between two data sets (590, 617, 621, 631) (inter-rater agreement), which in this case is GP and HP letter quality ratings. As the application of this test for the sample may be somewhat atypical; there are two groups rather than two individual reviewers, expert advice was sought. WMS statisticians advised that as individual differences were not of interest here, but overall quality assessment, the Kappa measure would be suitable for ascertaining potential agreement between ratings for the two groups (HPs and GPs). GP gradings were binary (successful/unsuccessful) while HP gradings were on an interval scale 1-9. Consequently, as the kappa test requires and assumes two categorical variables with equal categories (590), HP grading data was transformed and recoded into categories (unsuccessful 1-5, successful 6-9). As the data tended to skew toward higher values; "5" was graded "unsuccessful" to partially counter balance distribution.

The kappa measure results for GP grading and responses to Q1 are in table 9.3.10. Q1 asked participants to, *"please rate, in your opinion, the quality of the attached discharge letter you wrote".*

Table 9.3.10 Agreement between GP and HP gradings (Q1)

			Q1 (Quality of letter)		
			successful	**unsuccessful**	**Total**
GP letter grading	successful	Count	22 (59.5%)	3 (42.9%)	25 (56.8%)
	unsuccessful	Count	15 (40.5%)	4 (57.1%)	19 (43.2%)
Total		Count	37 (100%)	7 (100%)	44 (100%)

Symmetric Measures

		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Measure of Agreement	Kappa	.098	.123	.813	.416
N of Valid Cases		44			

Table 9.3.10 shows that of the letters graded successful by HPs, 59.5% were also graded successful by GPs. For letters graded unsuccessful by HPs, 57.1% were also graded unsuccessful by GPs. The kappa measure is low (.098) but results are not significant (p=.416).

Similarly, agreement between Q3 responses and GP gradings (see table 9.3.11) also showed low agreement (-.074) and were not significant, p=.441. Q3 asked participants to, *"please rate, in your opinion, how clear you think the attached discharge letter is to a GP".*

Table 9.3.11 Agreement between GP and HP gradings (Q3)

			HP grading		
			successful	**unsuccessful**	**Total**
GP letter grading	successful	Count	22 (55%)	3 (75%)	25 (56.8%)
	unsuccessful	Count	18 (45%)	1 (25%)	19 (43.2%)
Total			40 (100%)	4 (100%)	44 (100%)

Symmetric Measures

		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Measure of Agreement	Kappa	-.074	.091	-.770	.441
N of Valid Cases		44			

Due to the skewed nature of the hospital grading data, to explore whether this was having an impact on agreement results, the decision was made to re-code the data again for Q4 ratings (unsuccessful 1-6, successful 7-9). The results indicated fair agreement (k=.236) with a significant p value =.044. No other results for this re-coding were significant.

To create GP and HP rating groups with similar successful/unsuccessful proportions, HP ratings were re-coded again (unsuccessful 1-7, successful 8-9) and run for Q1, 3-7. However, this showed no significant results (p>.05). Moreover, although HPs may have only used higher values of the scale to denote quality "success" e.g. 7-9, this could not be confirmed with the survey data. For this reason, further data manipulated results with these new re-codings are not presented or discussed here. Qualitative comparisons are undertaken in the next chapter.

Q15 asked participants to, *"please use this space to provide reasons for any of your answers or share any additional comments about discharge communication or how the process may be improved".* Results for the open question Q15 were not analysed using CL due to low response numbers (N=32). Answers generally consisted of 2-3 short sentences, ranging from 15-101 words. No patterns were observed between Q15 and responses to other questions; this was due to the small number of responses. Consequently, Q15 comments were narratively overviewed. Comments have been linked with a broad HP role category and overall HP letter rating but no further contextual information in order to preserve participant anonymity. Several respondents identified barriers to providing successful discharge letters (see table 9.3.12 below).

Table 9.3.12 Respondent identified barriers in Q15 results with illustrative quotes

1. **Juniors writing letters**

   "*These pro forma letters are often wrong, delegated to most junior doctors who may not even be on my team.*" (Consultant, HP letter rating (HPLR) – 6)

2. **Time restrictions**

   "A good detailed discharge summary depends on the amount of time the doctor has to write it. At a busy ?night shift, this is very difficult." (Junior doctor, HPLR– 7)

   "Often we have short of doctors on the ward and we cannot spend too much time on discharge letters." (Junior doctor, HPLR – 7)

3. **Writing letters from patient notes and/or where patient not known to HP**

   "We often have to retrospectively completed EDs after the patient is discharged - having only medical notes to go by - info can be limited." (Nurse/ACP, HPLR – 6)

4. **Issues with computer system/ template**

   "Our discharge letters are auto generated from diagnostic and treatment PBR codes. We have no individual input into their quality/content" (Consultant, HPLR- 1)

   "There is a limit to "words" what you can put on certain "text boxes" hence sometimes whole information can't be put on discharge summaries" (Consultant, HPLR – 7)

In contrast to "barriers", "facilitators" were not overtly prevalent in Q15 responses. However, one respondent did comment on the need for further support and training which may be viewed as a discharge communication "facilitator" or "enabler":

> *"I feel perhaps further support from senior clinicians early on in the [HOSPITAL ROLE] training will enable more concise discharge letters and*

> *enable [HOSPITAL ROLE] to have more confidence in completing them"* (Nurse/ACP, HPLR – 8)

Linking to RQ8, one HP reviewed the guidelines which seemed to be prompted by Q14 of the survey and resolved to copy patients in thereafter (having not done previously):

> *"Reading the above guidelines has prompted me to change my practice!"* (Nurse/ACP, HPLR – 8)

Copying letters to patients, in line with the survey content, was a theme throughout Q15 responses. Relating to RQ9, several expressed reservations about copying letters to patients:

> *"Letters written to patients are often "dumbed down" and cringe worthy." (Consultant, HPLR – 8)*
>
> *"My belief is that information to the patient doctor should not necessarily be conveyed to a patient as this may cause unnecessary anxiety and distress."* (Consultant, HPLR – 9)
>
> *"I feel sharing/sending letters to patients in my experience is not a good idea at all. I used to think it was a good practice but none I have seen, they criticize every single content of the letter."* (Junior doctor, HPLR – 7)

Thus, in line with the literature on patients receiving letters from chapter five, the results suggested that participant views on patients receiving letters were mixed (96, 182, 497, 500, 505, 507, 510, 517, 531, 551, 555). Concerns resonated with previous literature and related to patient comprehensibility (205, 493, 497, 498, 509, 510, 517, 531, 551, 554, 555), patient anxiety or harm (531, 554), usefulness of letter to patient (182, 497, 509, 531), and situations where the letter may not be appropriate or helpful (531). Although HPs who did not copy letters to patients often explained this through expressing concerns, those who were in favour of this practice tended not to give reasons or outline benefits of the practice:

> *"Often copy patients into discharge summaries very occasionally when sensitive diagnosis/situation and diagnosis/situation will be discussed in OPA later in week will not copy PT into discharge summary."* (ST/REG, HPLR – 7)

Some participants used Q15 as an opportunity to make general reflections on their work, including quality remarks.

This suggested the survey format encouraged reflexive practice:

> *"I can improve this"* (junior doctor, HPLR – 5)
>
> *"On reflection, my spelling and grammar let me down in a couple of places"* (junior doctor, HPLR – 6)

The critical reflections of the letters exemplified in the above quote examples resonated with both the HP and GP letter gradings which were low or "unsuccessful" for these cases. Others chose to comment on the general culture of their work place:

> *"In my area of work the majority of patients do not get copies of their Edischarge"* (Nurse/ACP, HPLR – 8)

Some commented on the value of the research and/or noted their interest in the results:

> *"Good attempt to review a crucial aspect of communication that is not scrutinised as well as it should."* (Consultant, HPLR – 7)

9.4 Discussion

Key findings

Survey responses showed reasonable agreement amongst participants. The majority showed preference for structured discharge letters (60.9%) and marginally more HPs felt the system of copying letters to patients should be opt out (39.1%) than opt in (21.7%). However, kappa measure results, although not statistically significant, indicated low agreement between the survey participants' ratings (HPs) and GP gradings from chapter six. This suggests that GPs and HPs may not be in agreement in regard to what constitutes a successful discharge letter. This is further explored in the next chapter through quartet analysis which looked at qualitative differences between groups (HPs, patients, GPs) on what they feel makes a "successful" discharge letter.

Survey participants' quality ratings were often skewed toward the higher end of rating scales. The lowest quality ratings for the letters were seen in Q7; participants seemed less certain that patients would comprehend their letters than they did of the overall letter quality and informative nature of the contents for GPs. Clinician concerns and attitudes on patients receiving letters varied.

Interestingly, more participants reported they felt patients *should* "always" receive letters (56.5%) or be offered a choice (65.2%) than those who claimed to do this in practice (37.0%). Moreover, although only one participant reported they felt patients should never be copied letters (2.2%), 10 HPs (21.7%) reported that they never copied patients into letters in practice. Generally, participants expressed preference for patients receiving direct copies of discharge letters; time to produce two letters may be the reason for this. Hence, one of the main survey findings was that there are differences between what HPs feel should be *done* (RQ9) and what they are *doing* (RQ8) in regards to sending patients' letters.

Barriers to providing high quality letters were identified in the survey. These barriers included: HP time constraints, writing letters after patients discharged, restrictions of computer systems and hospital templates. Survey participants also expounded issues or barriers to patients receiving letters to include: hospital culture not to copy letters, inappropriateness of letters, the need to oversimplify patient letters, comprehensibility of letter to patient, and HP concern that the letter may cause harm or that it may not be in the best interests of the patient to receive the letter (e.g. mental health discharge). Notably, a number of these concerns have been outlined in past evidence (182, 205, 493, 497, 498, 509, 510, 517, 531, 551, 554, 555). These barriers and issues may account for and in part explain the prevalence of poor-quality discharge letters and the above described differential between what participants do in practice and their beliefs on what should be done.

To resolve the above barriers, a solution could be for HPs to receive further support and training in regard to writing letters and discharge summaries alongside role-modelling and culture shifts to prioritising patient-centred care and transparency. The need for such solutions is further evidenced in the data. Within Q15 responses "senior support during training" was identified as a potential enabler to producing good quality discharge communication whilst "juniors writing letters" was illuminated as a potential barrier; this supports findings from previous literature (41, 45, 162, 163). The survey found junior doctors produced a (non-statistically significant) lower proportion of successful letters and higher proportion of unsuccessful letters compared with other roles e.g. registrar. This may be juxtaposed with the qualifying year results which found those who qualified 2011-2017 produced higher amounts of unsuccessful letters relative to sample representation. This indicates that perhaps junior doctors are not receiving the quality training they need to produce satisfactory discharge letters; this is also evidenced through previous studies (165, 173, 228). Responses to Q14 revealed that 56.5% of participants said they were unfamiliar with the good practice guidelines (63) and only 6.5% reported that they always followed these guidelines. Thus, there appeared to be issues around HP guideline awareness which may be hindering implementation of good practice (63) of patients receiving letters. Overall, further support and training for HPs and junior doctors could be a potential enabler to producing higher quality letters and increasing consistency of patients receiving letters.

The implications for practice and further research in light of the study findings are discussed in chapter ten alongside findings and implications generated from the other studies.

Study considerations

As detailed in chapter four, the target response rate was 50% (N=154); this seemed a feasible target when compared with response rates of related surveys of UK hospital professionals within the last five years such as Clarke *et al.* (632) (47-72%), Connolly *et al.* (633) (75.8%), and Crosby *et al.* (634) (94%). However, in practice far fewer responses were received (14.9%, N=46); all hospitals failed to meet recruitment targets with no significant differences between hospitals. Goodwin & Kerri (606) suggest *"anything below 60% makes researchers nervous about whether the data are representative…"* (606) (p.474). Nonetheless, recent UK hospital professional surveys were found which reported similarly low response rates: 32% (635), 19% (636), 13% (637). Hence, although the 50% target may have been achievable, the actual response rate of 14.9% is not wholly unexpected. Potential factors contributing toward the low response rate were: HP time constraints, survey advertisement strategy, junior doctor rotations, delays between HPs writing letter and receiving survey invitation, insufficient survey incentives, the extent to which senior management supported survey participation, omission of pre-paid return envelopes, and lack of interest.

The demographics of respondents had reasonable variation, particularly in regard to specialities, age, and qualifying year. However, the sample size had substantial effects on tests that could be run and the power (638) and significance of results. In several cases, there was failure to reject the null hypothesis due to insignificant evidence. Hence, the validity and reliability of the survey results may be described as limited (464). The exception to this was following data manipulation, letter quality grading agreement between HPs and GPs was found to be significant and quite low. This could indicate GPs and HPs are not currently in agreement regarding priorities for what constitutes high quality successful letters. However, since the data was manipulated to achieve these results and the sample size is small, this cannot be speculated upon further. The limitations of this study within the wider context of the research are discussed in chapter ten.

9.5 Chapter summary

The survey found differences between what HP respondents do and their attitudes toward what should happen in regard to patients receiving letters. Barriers were identified which may partially account for this differential to include: computer systems/templates, guideline awareness, junior doctors writing letters, time restraints, writing letters after patient discharged, hospital culture, and HP concerns about patient letters. Survey findings suggested there may also be enablers to producing high quality discharge communication and patients receiving letters in the form of training and support.

10. Results integration and discussion: Trios, quartets and consolidation of findings

10.1 Introduction

This chapter synthesises findings from preceding chapters and also presents the secondary data analysis results through trio and quartet cases. Recruitment for duo and trio cases is outlined in section 10.2. The first set of secondary analysis results, duos and trios, are presented in section 10.3 followed by quartet results in section 10.4. The overall findings from the research are consolidated in section 10.5 to include realist interrogation of the findings in order to further refine and develop the PT from the realist review in chapter five. A consideration of research strengths and limitations takes place in section 10.6. Methods for research dissemination and feedback from PPI and stakeholder groups on the research are overviewed in section 10.7. Section 10.8 summarises the thesis' contribution to knowledge and considers the research implications for practice and future research suggestions alongside a final discussion of main findings. Section 10.9 summarises the chapter. The integration of results, secondary analysis, and discussions in this chapter are driven by the four over-arching research questions stated below (see also page 56):

Main research questions (RQs):

1. In what form do patients currently receive written discharge communication, and why?
2. What are the effects of patients receiving written discharge communication?
3. Should patients receive or not receive discharge communication, why, and in what form?
4. What are the features and key content-items of "successful" discharge letters?

10.2 Duo and trio recruitment

Figure 10.2 overleaf shows how the formation of duos, trios and quartets progressed through data collection.

Figure 10.2 Recruitment targets and data collection recruitment results

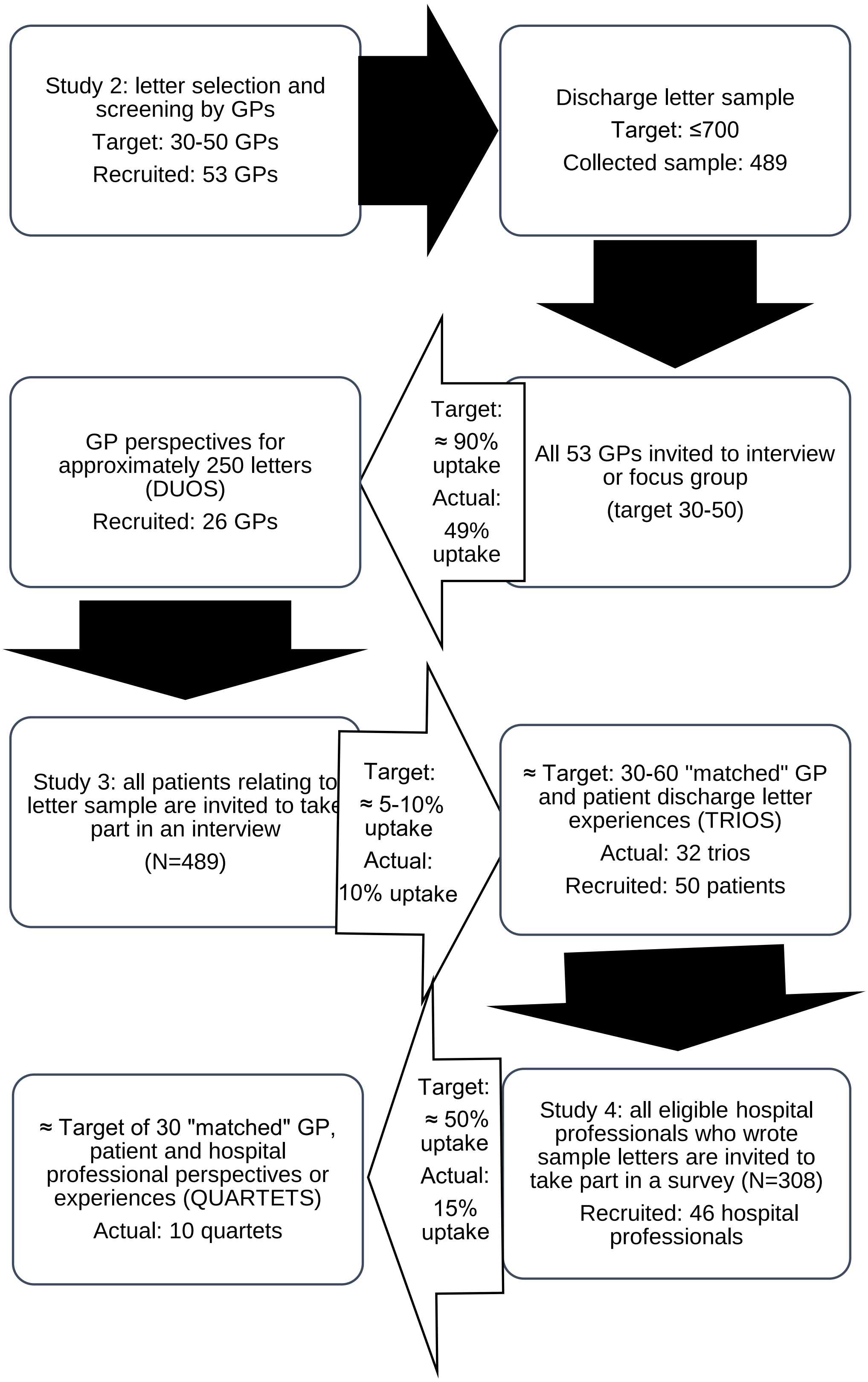


Figure 10.2 shows that participant viewpoints were collated to 10 quartets. As seen in figure 10.2, although studies generally met recruitment targets, HP surveys did not hence the lower number of final quartets (ten in total compared to a target of 30). Thus, the primary reason for a lower number of quartets than targeted was due to issues recruiting hospital professionals; reasons for this under-recruitment have been considered in chapter nine.

10.3 Duos and trios

A “duo” case is where the GP letter grading and comment is linked with data from one of the study populations and so “duo” case information has been covered in chapters 7-9 and will not be repeated here. On the other hand, a “trio” is whereby the grading and comments are matched with data from two of the study populations. Initially, the study had 36 trios comprising 32 patient and GP trios, 1 GP and HP trio, and 3 patient and HP trios. During the final study data collection, 10 of the GP and patient trio data sets were further populated to form quartets; this left 26 trios for trio case analysis to include 1 GP and HP trio, 2 patient and HP trios, and 22 patient and GP trios. There were a higher number of GP and patient trios due to the sequential nature of the research and the fact that GPs from part A of study 2 were targeted for interviews whereas survey sampling was predominantly self-selecting.

Trio, and quartet case analysis involved re-review of the data for each case; findings from different participants within discharge letter cases were re-read and juxtaposed in narrative meta-matrices in order to highlight agreements and disagreements. The main purpose here was to reconcile previously reported literature discrepancies through direct juxtaposition. The criteria for selecting and including data in the narrative trio and quartet summaries (see tables 10.3.2 and 10.4.2) were informed by a realist logic of analysis (see chapter five for further details of realist methods). As highlighted earlier in the thesis (in particular, see realist review in chapter five), synthesising literature on patients receiving letters revealed data disparities. Trio and quartet analysis sought to triangulate data to explore and explain agreements and disagreements between groups and data.

Thus, triangulation was used for the purposes of reconciling previous literature disparities on the topic of patients receiving discharge letters (e.g. variation in past literature in relation to “patient understanding”) (see chapter five for examples of further data disparities in the evidence base). Data sources for each “trio” and “quartet” case were combined and compared for data convergence and divergence; narrative summaries for each case were then developed. Summaries were not intended to be comprehensive but display findings of relevance to both the research questions and reconciling previously reported data discrepancies. Thus, summaries are focussed on agreements and disagreements between sources in relation to the topics of “patients receiving discharge letters” and “content of discharge letters”. Notably, the summaries for “quartets” (see table 10.4.2) are longer than that of “trios” (see table 10.3.2); this was for two main reasons. Firstly, as explained in chapter four, quartets were the main focus of analyses as they formed a more “complete” picture of discharge communication events from multiple perspectives. Secondly, quartet analysis involved comparison of an extra group or data source and so triangulation of data and findings became intrinsically more complex. Therefore, more detail was needed in the summaries to explore and explain any data convergence and divergence.

Trios were more or less representative of the original letter sample from chapter six (see comparisons in table 10.3.1 overleaf). As seen in table 10.3.1, ages of patients for trios ranged from 27-87 with a median of 67 (original 19-96, median 60). Gender distribution was similar in the trio sample (53.8% F, 46.2% M) compared with the original sample (50.7% F, 49.3% M). Trio cases were linked to 17 GPs across 14 practices; only 4 practices were not represented. Admission types were almost exactly proportionate for inpatient admissions for trio cases (76.9%) compared with the original sample (76.7%), although day case discharges were under-represented. Trios had a reasonable range of specialties (N=13), although markedly less than the original sample (N=39). GP gradings for trios were split between 68% successful and 32% unsuccessful; this is skewed toward successful when contrasted with the original sample (59.5% successful, 40.5% unsuccessful).

The full trio analysis table can be found in table 10.3.2 on the following pages.

Table 10.3.1 Comparisons of characteristics between trio and original study samples

Characteristic	**Original sample (chapter 6) (N=489)**	**Trio sample (N=26)**
GP grading	Successful: 291 (59.5%) Unsuccessful: 198 (40.5%)	Successful: 18 (69.2%) Unsuccessful: 8 (31.8%)
No. of GP practices and GPs	18 practices 53 GPs	14 practices 17 GPs
Practice sizes	Small (<5,000 patients): 1 (5.6%) Medium (5-10,000 patients): 11 (61.1%) Large (10,000+ patients): 6 (33.3%)	Small (<5,000 patients): 1 (7.1%) Medium (5-10,000 patients): 8 (57.2%) Large (10,000+ patients): 5 (35.7%)
Practice localities	Rugby: 3 (16.7%) Herefordshire: 3 (16.7%) Coventry: 5 (27.7%) North Warwickshire: 1 (5.6%) South Warwickshire: 6 (33.3%)	Rugby: 3 (21.4%) Herefordshire: 2 (14.4%) Coventry: 3 (21.4%) North Warwickshire: 1 (7.1%) South Warwickshire: 5 (35.7%)
Patient age	Range: 19-96 Median: 60	Range: 27-87 Median: 67
Patient gender	Female: 112 (50.7%) Male: 109 (49.3%)	Female: 14 (53.8%) Male: 12 (46.2%)
Admission	Inpatient: 375 (76.7%) Outpatient: 25 (5.1%) Other: 89 (18.2%)	Inpatient: 20 (76.9%) Outpatient: 2 (7.7%) Other: 4 (15.4%)
No. of specialty	39 Specialties	13 specialties
Hospital localities	Rugby: 3 (0.6%) Herefordshire: 59 (12.1%) Coventry: 269 (55.0%) North Warwickshire: 22 (4.5%) South Warwickshire: 120 (24.5%) Other: 16 (3.3%)	Rugby: 0 (0.0%) Herefordshire: 5 (19.2%) Coventry: 12 (46.2%) North Warwickshire: 3 (11.5%) South Warwickshire: 5 (19.2%) Other: 1 (3.9%)
Hospital role of discharging physician	11 different roles Consultant: 41 (8.4%) CT: 36 (7.4%) Junior: 125 (25.5%) SHO: 60 (12.3%)	2 different roles Consultant: 20 (76.9%) CT: 6 (23.1%) Junior: 0 (0.0%) SHO: 0 (0.0%)

Table 10.3.2 Trio analysis meta-matrix (S=successful, US=unsuccessful)

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
1	S	Although GP graded letter successful due to clear diagnosis and findings, they did comment that the patient management plan was unclear. GP asserted that they felt patients should receive letters as it informs the patient and is a "safety net" for ensuring follow up plans are actioned.		HP gave letter high quality score of "9/9" and 9s in all other areas including GP care management plan except HP gave letter "4/9" for patient comprehensible. HP concern that patients receiving letters may cause anxiety and distress. HP answered that it would be more appropriate for patients to receive personalised letters.	Although letter graded successful, GP did identify issues. Letter given a top score of "9" by HP. GP and HP appear to disagree about whether patients should receive copies of their discharge letters with HP expressing concern and GP focussing on benefits.
2	S		Patient generally pleased with discharge experience and happy to have received copy of the letter. Patient likes to be informed. Patient suggests some issues with understanding medical terminology and says that they would prefer to receive patient personalised letter. Patient would prefer choice of receiving letter at discharge.	HP gave overall quality score of "7/9" and patient comprehensible score of "9/9". Reports to always copy patients into letters and believes patients should have choice of receiving letters. Answers that patients should receive GP copy of discharge letter.	HP and patient agree about patients receiving letters but appear to disagree over the form that this should take – patient favours personalised correspondence whereas HP favours patients receiving copies of what is sent to the GP.
3	S		Patient overall seems pleased with communication and adds that they were given written and verbal information but that they asked for a copy of the written	HP gives quality score of "8/9" with patient comprehensibility score of "9/9". Answers that patients	HP given letter top score for patient comprehensibility but patient does report some issues and possible improvements

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
			information and that this was chased and obtained after discharge. Patient describes follow up information in letter is unclear. Patient happy to receive copy of what GP receives and thinks it is reassuring to view the correspondence between doctors for transparency. Patient would prefer more detailed explanations in letter.	should receive personalised letters and that patients should be given a choice. HP reports that despite hospital policy and their views on patient choice, they have never given a patient a discharge letter copy. HP believes that part of discharge letter should be given to patient and this is what is meant by personalised, not for two summaries to be generated.	which could be made to letter. Patient and HP in agreement over patient choice of receiving letters but disagreement over form. HP says patient personalised but patient says GP copy.
4	S		Patient says they were impressed with information provided; they were given a discharge letter copy. Patient thinks patients should receive letters automatically.	HP gave overall letter score of “9/9” and patient comprehensibility score of “9/9”. Reports to give patients letters most of the time and thinks patients should receive GP copy in opt out style system.	Broad agreement between HP and patient within this trio case.
5	US	Unclear procedure due to acronyms not comprehensible to GP; for this reason, unclear what had been done. GP thinks abbreviations should be written out in full for clarity both for the sake of the patient and themselves.	Patient received letter after long discharge delay in hospital. Patient pleased to have received letter. Patient says they cannot understand all of letter but that they are aware they can ask the GP if they want to understand more.		Patient assumes GP understands all of letter and is a source of information for interpretation when GP does not due to use of uncommon abbreviations in letter.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
6	S	GP considered letter successful as follow up arranged. GP perceives use of acronyms in letter probably not comprehensible to patient. GP thinks use of lay terms in letter may be useful for patient understanding.	Patient thinks letter should ideally be emailed. Patient reports not being given much information and only received letter as relative went to hospital to get a copy after discharge. Patient feels discharge is not always clear and more time needs to be put in to ensure patient understanding. Patient felt letter generally inadequate and unsure of some of medical terms and acronyms in letter, patient states acronyms should not be used and terminology should be explained in lay terms.		GP and patient in agreement that letter format not entirely accessible to patient. Agreement over ways to rectify this issue through avoidance of acronyms and explanations of medical terminology in lay terms.
7	S	Letter graded successful as follow up clear. GP perceives letter written in patient friendly language.	Patient reports no difficulties with letter understanding but does note inaccuracies in letter.		GP and patient appear to agree on patient understanding.
8	US	Letter graded unsuccessful as drug changes and reasons for these unclear.	Patient reports being very pleased to have received copy of discharge letter having been given limited information in regard to previous discharges. Patient felt receiving letter supported their wellbeing. Patient conveys that receiving letter means that they can be actively involved in their own care and thus increase patient autonomy.		Patients receiving letters may support and improve patient wellbeing.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
9	S	GP graded letter successful as it gave full details of investigations and findings and a working diagnosis. Important in GP view for patient to be given plan of action and instructions.	Patient reports not to have been given a copy of the letter. Patient would have preferred to have been given written information to ensure that they do not forget anything.		Patient and GP in agreement that patient did not receive a Letter and both appear to support practice of patients receiving letters.
10	S	Letter graded successful as clear notes. Generally, letter informative and clear. GP raises possible issues with patient understanding due to presence of jargon and abbreviations; GP notes some patients would be fine with not understanding these elements whereas some patients will want to know more and may bring letter to GP with queries. GP says that there is a certain amount of technical information that needs to be passed between doctors but to improve patient understanding the letter should be clear and concise with use of lay language.	Patient given a copy of the letter. Patient reports medication information is very useful and clear but notes some issues with abbreviations for which they suggest an abbreviation chart. Patient suggests use of lay terms to make information clearer. Patient says receiving letter decreases the need to see the GP post-discharge.		GP and patient agreed that unexplained abbreviations may not be clear to patient and in order to increase patient understanding, acronyms and abbreviations should be spelt out in full and jargon should be accompanied by lay explanations.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
11	S	Letter graded successful as detailed and clear plan. GP did note actions for patient and what the patient told unclear.	Received discharge letter. Patient suggestion that medical terminology could be better explained for patient. Suggestion that verbal explanatory information should accompany letter.		Patient felt in order to increase their understanding, jargon should be accompanied by lay explanations.
12	S	Letter graded successful as clear medication information and plan. Generally, GP happy with letter but is not sure how understandable letter would be to patient. GP feels clinical summary and medication information would be useful to patient and that it is useful for patient to have a copy of the letter.	Patient received letter. Patient found letter information adequate and found medication information particularly useful. Patient felt information and detail in the letter was perhaps excessive and could be shortened and simplified.		GP and patient in agreement that discharge letter can usefully provide up to date medication information for patient. Patient felt letter contents could be simplified to increase its usefulness to them.
13	S	Letter graded successful as clear medication information and follow up arranged. GP felt it was useful that letter says drugs started and stopped and reasons why. GP felt instructions to patient and follow up very clear. GP feels letter is appropriate and likely to be useful and comprehensible to patient.	Patient showed preference for receiving copies and did receive a copy in this case which they found useful. Patient liked that letter was simple and comprehensive but also brief. Suggestion that letter could be emailed to accelerate process.		GP and patient in agreement about letter usefulness and comprehensibility to patient.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
14	S	Letter graded successful due to level of detail. GP reported issues with hospitals presuming GPs have access to system to view results when they often do not. Although GP graded letter successful, GP did comment that the letter would benefit from more information regarding the clinical summary and admission details. GP assesses letter as appropriate for patient.	Patient given discharge letter from hospital. Patient happy with this information, they felt it was clear what was wrong, what was going to happen next and medication information. Patient reports no problems with reading or understanding letter. Patient feels letter could have more detail. Patient thinks letter system should be opt out and patients should ideally receive personalised letters. Patient suggests use of lay terms to increase usefulness of letter to patient.		GP and patient in agreement about letter usefulness and comprehensibility to patient as well as level of detail for letter to be useful. Patient suggests use of lay terms to increase usefulness of letter to patient.
15	US	GP reports issues with the fact that the doctor writing the letter has not seen the patient. GP actions in letter described as ambiguous and inaccuracies noted by GP. The GP felt generally the letter is appropriate for the patient but raises concerns that the vague and unclear parts of the letter may cause patient anxiety. GP suggests how letter could meet needs of both GP and patient through simple interpretations of results and brief summarising of technical information to include breakdown of acronyms. GP felt acronyms should be avoided for the sake of patient understanding.	Patient not received letter and felt discharge communication process was poor. Patient unclear on some of the medical terms in letter. Patient would have preferred to have been given copy of letter. Patient felt written discharge correspondence to patients should be mandatory.		GP suggests use of lay terms and simple interpretations to increase usefulness of letter to patient. Patient felt patient correspondence after discharge should be mandatory. GP felt acronyms should be avoided for the sake of understanding and clarity for patient. GP and patient in agreement that discharge communication unsuccessful.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
16	S	GP commented that patient not given a copy and they felt that the patient should have and that the letter would have been entirely appropriate for the patient. GP feels letter may have been reassuring for patient. GP comments that sharing letters with patients is the gold standard. Discharge plan simple and letter successful as concise and clear.	Patient reports being copied into recent letters but has found some of the letter contents technical. Despite this patient would prefer to receive copies of the letter sent to the GP rather than a patient personalised letter. Patient feels happy when they receive letters.		GP preference and patient preference for patients receiving letters. GP and patient disparity about whether or not patient received a copy of their recent discharge letter.
17	US	Letter graded unsuccessful as limited information regarding medication and investigations. GP found medication information unclear as well as working diagnosis. GP unsure whether or not letter wording would cause patient anxiety due to the diagnosis sounding serious. GP unsure whether letter language comprehensible to patient as many technical medical terms. GP thinks for safety netting, it is useful for the patient to know what the follow up plans are. GP reports information given to patients seems variable.	Patient says they were given discharge letter but with no accompanying verbal information or opportunity to ask questions. Patient reports feeling disappointed with discharge communication. Patient feels letter is not entirely accurate and that there have been ramifications as a result of this. Patient saw serious diagnosis for first time in letter which was slightly worrying.		GP and patient seem to be in agreement that discharge communication unsuccessful and that it is not ideal for the patient to be finding out about a potentially serious diagnosis for the first time in a letter with no accompanying counselling.
18	S	GP thinks patients need to know what is happening via a simple letter in lay language. Letter has	Patient says that they like to receive letters as they like to know what is going on.		GP and patient do not seem to be in agreement about patient

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
		handwritten pencil annotations which are unclear. Letter graded as successful due to good clinical summary and clear GP actions. GP concerns that receiving this letter may make patient feel anxious. GP raised issues with current prevalence of inaccuracies in discharge letters.	Patient feels discharge communication is good as long as they get a copy of the discharge letter.		appropriateness of letter. GP perceives letter may cause patient anxiety when the patient did not report this.
19	S	Letter graded successful as clear diagnosis, summary medication, diagnosis and plan. Nothing missing from the letter in GP view. To make letter clearer to patient, GP suggests jargon could be broken down and explained.	Patient happy to have received something written down so that they did not have to remember it. Patient mentions jargon not all initially clear but also says terms can be easily looked up on the internet or through other means. Patient likes to receive the same information as their GP.		GP concerned that patient may not understand letter and that letters such as this may need explaining. Patient happy to have received letter and notes resources such as internet that can be used to look up unknown terms.
20	US	Letter graded unsuccessful due to lack of medication details. Letter appropriate for patient only if they had knowledge of the information previously. GP thinks it is OK for patients to get copies as long as the letter is clear and meaningful to the patient otherwise the GP will need to spend time explaining letters to patients.	Patient seems somewhat indifferent to receiving letters and is most concerned that a copy is received by the GP. Patient would like to be given choice about receiving letter despite feeling that they often do not need a copy. Patient notes no faults with the letter.		Patient and GP disagree about quality of letter.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
21	S	GP comments that letter is good quality and sufficiently detailed. GP feels generally letters are appropriate for patients and that it is useful for patients to have record of treatment and medications. However, GP wonders if medically complex terms may pose information accessibility issues for patients.	Patient values receiving letters and can understand them and finds them comprehensible. Broadly, patient impressed with letters they have received including the most recent.		GP and patient in agreement that letter suitable and useful for patient.
22	US	GP feels letter contains limited detail and no results of investigations or information regarding treatment. Due to lack of information, letter requires GP follow up to clarify details. GP unsure if this letter would be useful to a patient due to the lack of detail.	Patient pleased to have received copy of the discharge letter. Patient found letter very helpful. Patient prefers to receive copy of what is sent to the GP and unsure why anyone would want anything different. Patient cannot see way to improve letter.		GP and patient disagree on letter usefulness to patient and quality of letter.
23	US	Letter grading due to the fact that the letter does not make sense to GP. Although letter graded unsuccessful, GP comments that detail on letter is generally adequate.	Patient likes receiving letters and to know what is going on. Patient reported no problems with letter or receiving it. Patient likes to receive a copy the same as what the GP receives.		GP and patient disagree on letter quality.
24	S	GP cannot think of case where it would not be appropriate for the patient to have a copy of the letter. GP believes patients receiving letters promotes and encourages autonomy and patient informedness and can also be reassuring. GP feels overall letter is clear and succinct.	Patient notes verbal and written information was conflicting. Patient pleased to have received letter and felt it was informative. Patent thinks patients need to know what happened, medication information and follow up plan. Patient feels letter system should be opt out to reduce the risk of errors of patients not receiving letters.		GP and patient seem to agree on the benefits of patients receiving letters – that it can inform on condition and what is next.

Trio case	GP grading	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Summary of main trio findings
25	S	GP expresses concerns with patients comprehending medical terms in discharge letters. GP does add that often patients having letters is useful particularly for GP home visits. GP expounds difficulty writing a letter to meet the needs of two audiences – GP and patient.	Patient reports being given limited information at the time of discharge. Patient notes a few inaccuracies on letter which made them feel uneasy about the rest of the letter and its accuracy, content and quality. Broadly, patient did not feel the experience was particularly good.		GP and patient slightly disagree on letter quality – GP grades as successful but patient does not describe experience positively.
26	S	GP graded letter successful as findings and plan clear. GP feels no new information should be communicated to the patient in the discharge letter. GP thinks that whether or not it is useful for patient to have a copy of the letter depends on the content and quality of letter. GP feels notes should never be handwritten as this can be unclear and thinks generally processes need improving to support better communication.	Patient reports being given limited information and no copy of the letter. Patient was left feeling slightly confused about what was going on. Patient would prefer to always receive copies of letter and for this to be the same as what the GP receives.		GP and patient in agreement that patient receiving letter can be useful.

The trio analysis highlighted agreements and disparities between groups. Disagreements tended to centre on the content of the discharge letters and whether or not it is beneficial for patients to receive discharge letters. In some cases, such as case 3, the patient and HP differed on whether or not the letter was likely to be comprehensible to the patient. Within this case, the HP gave the letter an overall quality score of 8/9 with a patient comprehensibility score of 9/9 although the patient describes the follow up information as unclear. Agreement between GPs and patients relating to patient comprehensibility was generally good (e.g. case 21) but there were cases where the GP felt the letter was too medically complex for the patient but the patient disagreed and found the contents useful (e.g. case 22). Within some cases (e.g. case 6), the patient and GP agreed that the patient would benefit from use of lay terms in the letter to unravel some of the more complex medical terminology. However, this suggestion was not shared across cases. Within case 11, the GP felt that the letter should have contained more information (e.g. lay clinical summary) in order to be useful to the patient; the patient felt the letter would have been clearer if it was shortened. Case 5 was interesting because although neither the GP nor patient were able to decipher all the letter acronyms, the patient assumed the GP would have no issues with the content.

In a few cases, the patient rated the letter highly whilst the GP was dissatisfied with the medication information; case 8 and case 20 are key examples of this whereby the GP felt information regarding medication changes was unclear and unsatisfactory. Across cases, GPs and patients stated that the letter should be used as an addition to verbal information and not as a substitute. This is demonstrated in case 17 where the letter communicates a serious diagnosis to the patient and the patient reports being given no other information from the hospital. The GP and patient appear to agree that letters are an inappropriate tool for communicating serious diagnoses.

A summary of trio results and analyses is in table 10.3.3 on the next page.

Table 10.3.3 Summary of main trio analysis findings relevant to the research questions

RQ1: In what form do patients currently receive written discharge communication and why?

- Patients currently receive discharge letters inconsistently and GPs remain uncertain about the prevalence of this practice.
- There is great variation of discharge policies between hospitals; patients did not like this and felt systems required standardisation.

RQ2: What are the effects of patients receiving written discharge communication, and why?

- Patients emphasised negative outcomes in cases where they had not rather than when they had received letters, contrary to clinician concerns.
- Positive effect – letter can act as a patient reminder and record of medication and plan.
- Positive effect – letter can reassure patient of next steps and support wellbeing by reducing anxiety and uncertainty.
- Positive effect – letter boosts patient autonomy and encourages taking control of health.
- Negative effect – when patients do not receive letters, they may feel anxious and uncertain about how to manage their condition.
- Positive effect – letter can inform patient reducing need to visit GP thereby saving resources.

RQ3: Should patients receive or not receive discharge communication, why and in what form?

- Patients suggested letters could be sent electronically (e.g. email) to increase timeliness and reduce resource consumption associated with patients receiving letters.
- Patients suggested letter receipt should be “opt out” as it was anticipated that the majority of patients would want to receive their discharge letters.

RQ4: What are the features and key content-items of “successful” discharge letters?

- HPs and GPs disagree about features of successful letters. HPs emphasise “what happened” elements but GPs value “what should happen next” details to include reasons why.
- Letters should include medication changes and reasons.
- Letters should not communicate new information to the patient.

Particularly key trio findings (see table 10.3.3) were that there were disagreements between population groups as to whether it would be more beneficial for patients to receive a personalised letter or copy of the GP letter; some GPs felt personalised letters may be more beneficial by improving comprehension whereas patients generally preferred direct copies of GP letters for transparency and reassurance. Patients frequently emphasised positive effects of receiving letters. Patients often demonstrated resourcefulness to increase their letter understanding such as looking up terms on internet and furthermore several patients conveyed that they need not understand every word of the letter in order to gather the gist and find the letter of value. Nonetheless, both GPs and patients said that letters should be provided within the context of adequate patient counselling in order to increase understanding and reduce queries post-discharge (e.g. GP visits). Patients suggested that receiving letters may reduce negative outcomes through reducing anxiety thereby supporting their wellbeing. Negative outcomes tended to be reported in cases where patients had not received letters; in these contexts, patients sometimes felt uncertain and anxious about next steps and how to manage their condition.

10.4 Quartet cases

A "quartet" case is where the GP selected letter, letter grading, and associated GP comments are linked with data from all three primary data studies to include GP interviews/focus groups (study 2, chapter seven), patient interviews (study 3, chapter eight), and hospital professional surveys (study 4, chapter nine). As seen in figure 10.2, the research generated 10 quartets. Five of these quartets relate to "successful" cases and 5 to "unsuccessful"; as the research intended to have a 50/50 divide, the quartet grading distribution is optimal. Of these quartets, 4 participants had previously received letters and 6 participants had not; grading distribution between groups was relatively even. Characteristics of the quartet sample compared with the original letter sample (chapter six) are presented in table 10.4.1 on the next page.

Table 10.4.1 Comparisons of characteristics between quartet and original study samples

Characteristic	Original sample (chapter 6) (N=489)	Quartet sample (N=10)
GP grading	Successful: 291 (59.5%) Unsuccessful: 198 (40.5%)	Successful: 25 (50.0%) Unsuccessful: 25 (50.0%)
No. of GP practices and GPs	18 practices 53 GPs	8 practices 9 GPs
Practice sizes	Small (<5,000 patients): 1 (5.6%) Medium (5-10,000 patients): 11 (61.1%) Large (10,000+ patients): 6 (33.3%)	Small (<5,000 patients): 0 (0.0%) Medium (5-10,000 patients): 4 (50.0%) Large (10,000+ patients): 4 (50.0%)
Practice localities	Rugby: 3 (16.7%) Herefordshire: 3 (16.7%) Coventry: 5 (27.7%) North Warwickshire: 1 (5.6%) South Warwickshire: 6 (33.3%)	Rugby: 3 (37.5%) Herefordshire: 0 (0.0%) Coventry: 1 (12.5%) North Warwickshire: 0 (0.0%) South Warwickshire: 4 (50.0%)
Patient age	Range: 19-96 Median: 60	Range: 59-77 Median: 71
Patient gender	Female: 112 (50.7%) Male: 109 (49.3%)	Female: 3 (30.0%) Male: 7 (70.0%)
Admission	Inpatient: 375 (76.7%) Outpatient: 25 (5.1%) Other: 89 (18.2%)	Inpatient: 7 (70.0%) Outpatient: 1 (10.0%) Other: 2 (20.0%)
No. of specialty	39 Specialties Urology: 22 (4.5%) Respiratory: 23 (4.7%) A&E: 62 (12.7%) General Surgery: 26 (5.3%) Cardiology: 22 (4.5%) Trauma and Orthopaedics: 21 (4.3%)	6 specialties Urology: 3 (30.0%) Respiratory: 2 (20.0%) A&E: 1 (10.0%) General Surgery: 2 (20.0%) Cardiology: 1 (10.0%) Trauma and Orthopaedics: 1 (10.0%)
Hospital localities	Rugby: 3 (0.6%) Herefordshire: 59 (12.1%) Coventry: 269 (55.0%) North Warwickshire: 22 (4.5%) South Warwickshire: 120 (24.5%) Other: 16 (3.3%)	Rugby: 1 (10.0%) Herefordshire: 0 (0.0%) Coventry: 3 (30.0%) North Warwickshire: 0 (0.0%) South Warwickshire: 6 (60.0%) Other: 0 (0.0%)
Hospital role of discharging physician	11 different roles Consultant: 41 (8.4%) ACP: 3 (0.6%) Junior: 125 (25.5%) SHO: 60 (12.3%)	4 different roles Consultant: 6 (60%) ACP: 1 (10%) Junior: 2 (20%) SHO: 1 (10%)

Table 10.4.1 shows that the quartet sample was skewed toward larger size GP practices with low representation of practices in Herefordshire and Coventry compared with the original sample. Patient ages in the quartet sample are skewed toward older age participants with a higher proportion of male participants in the quartet sample than the original sample. Quartet admission type proportions were somewhat representative of the original sample; speciality distributions were not due to the limited number of quartet specialities (N=6) compared with the original sample (N=39). Hospital localities revealed that hospitals in South Warwickshire were over-represented in the quartet sample whilst Coventry hospitals were markedly under-represented compared with the original sample. The role of the discharging physician on the discharge letter had a markedly higher proportion of consultants compared with the original sample but

the proportion of junior doctors and SHOs in the quartet sample was more or less representative of the original sample. Overall, several characteristics are skewed and so the sample is not generalizable to the full original sample or wider population. However, the quartet cases do provide useful in-depth insights into discharge communication experiences and discrepancies across populations.

Findings from across studies were integrated for secondary-level data analysis through meta-matrices (474) to allow synthesis of qualitative and quantitative findings. The full quartet meta-matrix analysis is in table 10.4.2 which can be found on the following pages.

*Table 10.4.2 Quartet table (*US=unsuccessful, S=successful)*

Quartet case	GP grading*	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Main quartet findings
A	US	Letter graded unsuccessful by GP as diagnosis and reason for admission unclear as blank on letter template. GP unclear of cause of patient symptoms and presenting complaint and whether this cause is known to hospital. GP raises possible issues with patient understanding due to presence of jargon and abbreviations. GP thinks avoiding acronyms and use of lay terms in letter may be useful for patient understanding and notes that letter should be provided within context of adequate patient counselling. GP suggests patient information section on letter. GP feels template letters are good as they avoid things being missed. GP likes to know diagnosis, admission and discharge date, consultant details, medication, procedures and results, and patient awareness of diagnosis. GP feels blanks on summaries should not be permitted as unclear.	Patient received copy of letter but did not seem too pleased as they noticed inaccuracies on the letter which made them feel upset/angry. However, patient does find it useful to receive letter so that they can remedy discrepancies but they note that the remedying process has been time-consuming. Patient feels someone should go through letter with patients prior to discharge to reduce inaccuracies and ensure patient understanding. Patient prefers to receive direct copy of GP letter. Patient feels letter should have contained name of discharging physician.	HP gave overall letter a quality score of “6/9” with diagnosis information as “2/9” and patient comprehensibility as “2/9”. HP felt patients should have a choice about receiving letters and that they should receive a GP copy. HP notes issues with letters being completed by most junior doctors, some of whom may not be on the corresponding consultant speciality team leading to issues. The HP comments that they tend to dictate letters which allows more information to be inputted as the template can be limiting.	Apparent agreement across all three groups that letter is somewhat unsuccessful. All groups raise issues with letter accuracy and HP notes this is likely due to junior status and inexperience of completing doctor. GP and HP seem to agree patients should receive letter and patient agrees with this noting that had they not received the letter, they would not have been able to rectify the errors. Patient and GP agree that letter should be provided within the context of patient counselling.
B	US	GP comments that they have no way of knowing whether or not patient received letter. GP feels letter is not patient appropriate and could cause patient to feel anxious due to amount of medical language and so would not be useful to patient. GP adds that to improve letter, lay language for patient could be used. GP comments that it is good there are no handwritten sections on letter and	Patient been given a copy of letter, it was in an unsealed envelope so they read it. Patient notes that follow up stated on letter has not happened. Patient notes they were lucky to have someone with them in hospital who remembered information as	HP gave overall quality score of “5/9” with patient comprehensibility score of “7/9”. HP felt patients should receive choice of receiving letters and that this should be a GP copy. HP notes that they do not always have very much	GP concerned that patient may not understand letter and that letters such as this may need explaining. Patient happy to have received letter and notes resources such as internet that can be used to look up unknown terms. GP feels letter is not appropriate or useful to

Quartet case	GP grading*	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Main quartet findings
		that the findings are clear. GP feels patients need to know the procedure and results and follow up. GP comments that it is useful when patients receive letters because it helps them understand the action plan. GP feels that discharge letters need improving in terms of timeliness, factual accuracy, details regarding what has happened, and plan of action. GP says that GPs are not responsible for chasing results and yet letters request this of them.	they did not due to effects of anaesthesia. Patient would have preferred interpretative simple summary of results. Patient mentions importance of considerations of the individual and patient choice. Patient notes that unfamiliar terms can easily be searched on internet.	time to complete discharge summaries and so must keep details brief. HP notes completing summaries which are timely but also informative and accurate is very challenging. HP notes that they feel their discharge letters are generally adequate but some HPs include only brief details.	patient but patient felt it was. Lower quality of letter perhaps explained by HP comments regarding the time pressures of completing summaries in their role.
C	S	Successful grading as all information clear and concise including diagnosis and treatment plan. GP feels unexplained acronyms should be minimised for clarity for both GP and patient. GP notes inconsistency of patients receiving letters. GP raises concerns with patient understanding letter due to acronyms, one of which the GP is unfamiliar with, and medical terminology. GP feels that letter should clearly summarise the results in patient-friendly language to make content clearer (e.g. it should be stated that test results were normal for reassurance). GP feels the important items for letters are diagnosis, reason for admission, clinical summary, treatment and results, medication, and follow up and GP actions. GP feels letters are currently very variable in terms of quality. GP thinks patients should only not be given letters in cases of harm (e.g. 3rd party information). GP comments that the "blank" GP action on letter is	Patient has letter and notes that this is useful so if they go abroad they could show the letter to any clinicians looking after them as relevant. Patient notes that different patients may want different levels of information particularly in regard to bad news. Patient reports that they understand letter and are happy with it although they would have preferred to have been given a copy of the letter through the hospital rather than because they took part in the research. Patient suggests letter could be improved by being written in plain English. Patient notes the importance of adequate patient counselling.	HP gives letter quality score of "8/9" across all categories to include patient comprehensibility. HP thinks patients should receive a choice of receipt and that the form should be personalised letters. HP rates their letters highly but adds no comments as to why.	GP expresses concerns regarding the patient understanding letter but patient notes that they did understand the contents. However, the GP and patient agree that the letter would be more useful if it was written in plain English with minimal or no acronyms. The HP seems unaware of the acronym issues. The HP feels patients would benefit from personalised letters but patient says they have preference for receiving a copy of what the GP receives. Letter seems to be evaluated as successful across population groups.

Quartet case	GP grading*	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Main quartet findings
		confusing and if there is no action this should be explicitly stated for clarity.	Patient values knowing next steps.		
D	S	GP thinks patients receive letters variably. GP notes that language in letters is often very medical and so not suitable for the patient without explanation. The GP asserts that letters can be written in a straightforward way for the patient. GP feels patients should receive letters and says this can make patients feel more included in their care. GP feels letter is a bit brief as says very little about results and if anything needs to be done in terms of follow up. Good elements of the letter are that tests have been overviewed. The GP feels a summary of the results to include interpretations would be useful for the patient and the GP. The GP makes a general comment on the dangers of rapid hospital requests post-discharge (e.g. asking for a patient review in 3 days).	Patient says they did not receive a copy of the discharge letter but they would have liked one had it been offered. Patient would have preferred results to have been clearer and letter to make use of lay terms. Patient would like to be given letter every time they attend hospital. Patient suggests letter could be improved by clearer synopsis of what happened, medication, treatment, and follow up plans.	Letter given “1/9” by HP across quality scores. HP comments that the letter is poor because it was generated by a computer and was not written by themselves. Criticism that the letter contents are merely a decontextualized list of words. HP writes that the computer is unable to select the salient information and communicate it and so sometimes they send a separate letter to the GP with the important information.	HP and GP seem to agree that computerised templates are not particularly informative or helpful. Groups broadly agree about poor letter quality. Patient and GP agree information about results is too brief. All groups agree patients should receive letters.
E	S	Letter graded successful as reason for admission and follow up plan were clear as were actions for GP and medication changes. GP favours that GP action in letter not blank but clear that the GP does not need to undertake further actions. GP feels the letter would be appropriate and useful to patient but may be improved by use of lay terms. GP notes patients receive letters inconsistently but they think it is useful for patients to receive copies particularly in regard to medication information. GP notes difficulty of writing letter that is patient	Patient reports that they had not received copy of letter but they would have liked to have done despite that the letter communicated bad news and a serious diagnosis. Patient would prefer copy of what goes to the GP and that this is useful so they can refer back to it so they are not dependent upon remembering information.	HP rates letter “8” in all quality categories including GP information and patient comprehensibility. The HP notes producing summarises on a weekend when they are understaffed is a barrier to producing high quality letters. The HP feels their letter is clear and informative. The HP comments that the hospital B	The HP reports they always copy patients into letters and yet the patient reported they had not received a copy of the letter. There seems to be agreement across the groups that the letter was successful. GP expresses concern about patient understanding due to medical terms but the patient noted no understanding issues and found the letter useful.

Quartet case	GP grading*	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Main quartet findings
		friendly whilst meeting technical needs of GP. GP feels information in letter is quite medical and may be confusing or concerning for a patient; GP suggests lay explanations to reduce patient anxiety. However, GP does note letter would likely be useful for the patient so they are aware of the follow up plan. GP thinks important elements for letters are tests and results, diagnosis, GP action points. GP suggests patients are given abbreviated copies to include diagnosis, medications, and follow ups.	Patient notes that the letter relates to them and as such they can relate to the letter. Patient would like information in the letter relating to what happened and next steps.	discharge templates are superior to the hospital A ones as they allow more freedom with inputting information.	
F	US	Letter graded unsuccessful as unclear diagnosis, medication information regarding why drugs stopped and why. GP suggests that letter could be improved by medication information being put at the end of the letter rather than the beginning as this clouds other important information. GP comments that positive aspects of the letter are that there are reasons for medication changes alongside investigations, management plan, and actions for GP. Another letter improvement would be to specify if any blood tests need repeating and if so which ones and when. GP feels patients should receive letters.	Patient reports that they had received a copy of the discharge letter although one page missing when compared with GP copy. Patient found the medication information unclear. Patient also felt the diagnosis information was unclear and that they were given conflicting verbal and written information. The patient comments that they would like to receive a discharge letter every time they are discharged from hospital. Patient suggests letters need to include diagnosis, treatment, and management.	HP grades letter an "8/9" for overall quality. HP notes restrictive template of summary can be a barrier to providing detail. The HP comments that upon reviewing the diagnosis it is unclear and they should/could have explained the presenting complaint better. The HP comments on the frustration that reports cannot be cut and pasted into the summary and that the templates have restricting word counts.	GP and patient seem to agree that letter requires improvements and that the medication information is unclear. All agree diagnosis information is unclear.
G	S	Discharge letter successful as it was concise with clear reason for admission, treatment, follow up,	Patient reports being given copy of letter which they were happy	HP gives quality score of "6/9" and patient comprehensibility	Agreement between GP and patient as letter contained clear

Quartet case	GP grading*	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Main quartet findings
		information given to patient, investigations and results. GP values that the medication changes in the letter are clear which is useful. GP thinks patients should receive letters but notes issues with jargon. GP feels current quality of discharge letters is variable and many letters have incomplete medication lists and insufficient detail regarding tests carried out and GP actions.	with. Patient notes difficulties being transferred from an inpatient to outpatient. Patient felt medication information was a bit unclear and that when they were discharged, they still did not know the cause of their condition.	score of “3/9”. HP thinks patients should receive GP copies but not always. The HP comments that their spelling and grammar let them down but they do feel the management plan and diagnosis in the letter are succinct and informative.	follow up and diagnosis but HP rates letter quality lower due their spelling and grammar mistakes. GP and HP concern about patient understanding; patient noted no issues.
H	US	Letter graded unsuccessful as no diagnosis and medication list incomplete. GP does note that there is a follow up plan which is helpful but without the diagnosis the letter is not clear enough. GP notes this letter does not contain enough detail. GP feels patients should receive letters but raises issues with unexplained medical terms. GP feels it is useful for patients to have record of medication and treatment. GP feels patient understanding could be improved through adequate patient counselling regarding discharge letter information.	Patient felt unclear of what the problem was when they discharged due to little information received. Patient reports that they did not receive a copy of the discharge letter but they would have liked to have done. Patient suggests that a patient personalised letter may be more valuable but that they would want both letters. Patient mentions use of internet for looking up unknown terms.	HP gives letter a “6/9” for quality and patient comprehensibility but rates diagnosis information a “2/9” as on reflection they feel this is unclear as it is missing. The HP thinks the follow up information is also poor. HP thinks patients should receive GP copies and always be given a choice of receipt. The HP feels the letter could have been improved by specifying the differential diagnoses in light of the presenting complaint.	Diagnosis information indicated as unsuccessful across all three groups. GP raises issues with patients understanding medical terms but patient mentioned no issues with letter contents and said that terms can easily be internet searched.
I	S	Successful grading as clear, inclusive of relevant information, and explained what information and advice given to the patient which the GP reports is sporadically included on summaries but very important. GP suggests issues with patients	Patient reports to be given verbal information only and no letter which they did not find helpful. They would like to receive letters to include more detailed	HP gives scores of “9/9” for all categories except patient comprehensibility which they give “7/9”. HP claims to always copy patients into letters. HP	GP feels abbreviations need to be avoided in letters as these are not patient friendly. GP does not rate letters well when information given to patient is unclear. Patient

Quartet case	GP grading*	GP comment and interview/focus group findings	Patient interview findings	HP survey findings	Main quartet findings
		understanding letters particularly regarding medication changes and feels letters need to be written in plain English and lay language with minimal or no abbreviations. GP feels patients receiving letters is a good idea but needs to be accompanied by adequate patient counselling and letters should clearly highlight if the patient is required to take any action. GP notes that a successful letter is not a long letter.	management and recommendations information. Patient wants letter to contain specific information about what is wrong, medication, and how condition can be improved. Patient feels receiving verbal & written information is useful.	commented that the letter was successful.	and GP agreed that letter should be written in plain English with explained terms. GP and patient agree that patient actions and recommendations need to be explicit and clearer in the letter.
J	US	Unsuccessful grading due to lack of clear findings and follow up plan. GP feels the letter should have included clear details of the discharging physician and also information given to the patient alongside presentation of clinical findings. GP comments that the letter is particularly unclear as it is handwritten and illegible and so they feel uncertain of the procedure that the patient has had and the outcome. GP feels that this specific letter would not be helpful to the patient as it contains no information or advice or follow up details. GP also comments that the letter contains too many medical terms which would be hard for the patient to understand. GP notes general usefulness of patients receiving copies but says the letter should accompany counselling. The GP feels letters should always be typed.	Patient reports difficulties remembering the verbal information they were given as no letter. Patient was given a letter for the GP but as it was in a sealed envelope, they did not open it. Patient suggests they should have been given advice for condition and management, details of any follow up and medications, and expectations of recovery. Patient would prefer to receive a direct copy of what is sent to the GP and thinks patients should always be given letters as information can be easily forgotten.	HP gives letter quality score of "2/9" and notes it was actually produced by someone else more junior on their team but the letter has their name on. The HP rated the letter poorly across quality scales but did not provide any details as to how the letter could have been improved.	GP feels nothing in this particular letter would be of use to patient. Patient had trouble remembering the verbal information. Agreement across all three groups that discharge communication poor and unsuccessful. GP notes the illegibility of the letter due to handwritten form but the patient and HP do not comment on this but instead focus on the content brevity. GP and patient agree that patient needs to know advice and follow up plans.

The purpose of table 10.4.2 was to highlight convergence and divergence between study groups and potentially reconcile previously reported discrepancies (see section 10.1).

Previous literature on patients receiving discharge letters reported both benefits (188, 191, 192, 207, 521) and drawbacks (189, 196, 394, 493, 639) of the intervention and varying clinician preferences for the practice (182, 192, 500, 504, 510, 531, 551, 555, 575). Within quartet cases, clinicians sometimes expressed concerns or drawbacks of the practice (e.g. patient anxiety) in cases where patients emphasised the benefits of receiving or obtaining a copy of the letter (see cases B, C, E, G, and H in table 10.4.2). This particularly applied in case E where the letter contained bad news and despite clinician concerns that the letter may cause harm, both within this case and previous literature (186, 489, 493, 546, 553, 554), the patient found the letter valuable and would have preferred to have been given a copy at discharge.

Past work highlighted conspicuously inconsistent rates of patient understanding (198, 489, 493, 509, 512, 536, 538, 546, 554, 555, 566). Within quartets, clinicians sometimes had concerns regarding patient understanding of the discharge letters due to the medical terminology. However, in many cases, these clinician concerns were expressed regarding letters that the patient reported to have understood and found the letter useful (see cases A-C, E, G-H, and J in table 10.4.2). Moreover, quartet evidence suggests that patients do not necessarily need to understand the entire letter contents for it to be useful; patients said that unknown terms can easily be looked up on the internet.

Markedly, UK standards and policies (59, 62, 63) currently argue that patients should receive copies of letters between physicians as a “right” (62) and that this is “good practice” (63), unless there is risk of harm. Relatedly, previous UK studies reported preferences for patients receiving letters were generally high (79%-97%) (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574); quartet cases supported this finding as all patients in table 10.4.2 expressed preference for receiving discharge letters. Clinicians generally agreed, although reservations (e.g. letter causing patient confusion), were raised. However, despite these findings and policies, research (186, 554) continues to report that patients may receive letters inconsistently, the impacts and effects of which are equivocal. Findings across quartets echoed this and demonstrated that patients are still receiving letters inconsistently; this is explicitly stated by GPs in cases C and E and also demonstrated by the fact that four quartet patients had received letters and six had not. Quartets revealed multiple impacts of this inconsistency. In cases where patients had not received letters (C-E, H-J), patients reported difficulty retaining information and feeling unclear about what happened, their condition and how to manage it. On the other hand, in cases where patients had received letters (A, B, F, G), patients reported feeling informed, finding the letter useful as a reminder of what happened (reason for admission and diagnosis) and what was said (medication, treatment, and follow up), and to correct inaccuracies and monitor pending actions. Thus, the impacts of the practice inconsistency appear predominantly negative as patients reported negative effects of not receiving letters. Therefore, it may be inferred that, contrary to clinician concerns, negative outcomes are perhaps more likely to be induced in cases where patients do not receive letters as opposed to in cases where they do. However, patients and GPs agreed that letters should be provided in the context of adequate patient counselling so that the letter is not communicating new information, particularly in cases of serious diagnoses (e.g. case E).

Previous literature (51, 128, 129, 138) suggested that discharge letters need improving and that poor quality documentation of discharge components can negatively affect patient safety and care. It was outlined in chapters 2-9 that research needs to explore reasons for discharge letter content variation. Quartets suggested letter quality may be variable and, moreover, that views between populations on what constitutes a good quality letter were mixed: in 1/10 cases the patient and GP agreed on the letter quality (case G) in 2/10 cases the HP and GP agreed on the letter quality (case B, I), and in 7/10 cases all groups agreed (case A, C, D, E, F, H, J). Notably, in no cases did the HP and patient both disagree with the GP on the letter quality. Agreement across groups was often seen in cases where the diagnosis information was unclear (case A, F, H). Within these cases, all groups seemed to agree that the letter could have been improved with more details surrounding the working diagnosis and presenting complaint. Disagreements in other cases related more to the desires of specific individuals. For instance, in case G the patient and GP felt the letter was of good quality due to clear diagnosis and management information but the HP rated the letter lowly due to spelling and grammar mistakes. In this case, neither the GP nor the patient mentioned issues with the spelling and grammar and so do not appear to find these a barrier to the letter quality in the same way the HP does. This perhaps can be rationalised by the HP’s desire to write a coherent letter in good English whereas the patient and GP seem to place higher worth on the clinical content and general accuracy of the letter. Disagreements within cases B and I relate to the patients wanting more information regarding how they can improve their condition and recommended actions. However, the HP and GP do not appear to view this as a priority and rate the letter successfully due to the clarity and relevance of the clinical information. Although patterns relating to agreement and disagreement and letter content were seen, no patterns were seen relating to the specialty, admission type, patient age, or role of the discharging physician.

There were quality disparities between clinician groups. This indicated that conceptualisation of what constitutes a “successful” letter was different across clinician populations which may in part explain current communication issues and incongruities. Suggestions to improve letter quality were: inclusion of key elements (diagnosis, medications, tests and results, advice and management, information given to patient, follow up, and GP actions), lay explanations for jargon, results interpretation summary, use of plain English, and minimal use of acronyms. Groups seemed to agree that these suggestions may improve the letter usefulness and comprehensibility to the patient without detracting from clinical information important to the GP. HPs within quartet cases identified barriers to high quality letter provision to include: systems where computers generate letters (case D), time pressures to produce letters particularly on weekends (case B), and restrictions and limitations of the summary templates (cases A, E, F).

A summary of main quartet findings from table 10.4.2 is in table 10.4.3 on the next page.

Table 10.4.3 Summary of main quartet analysis findings relating to the research questions

RQ1: In what form do patients currently receive written discharge communication and why?

- Patients currently receive discharge letters inconsistently.
- When patients do receive letters, they receive direct copies of the GP discharge letter.

RQ2: What are the effects of patients receiving written discharge communication, and why?

- Patients reported no negative effects of receiving letters within quartet cases.
- Patients emphasised negative outcomes in cases where they had not rather than when they had received letters, contrary to clinician concerns.
- Positive effect – letter can act as a reminder and record of what happened and next steps.
- Positive effect – patient can remedy letter inaccuracies.
- Positive effect – letter can inform patient and ensure they follow management plan.
- Negative effect – clinicians felt that patients receiving letters could cause patient anxiety and confusion.

RQ3: Should patients receive or not receive discharge communication, why and in what form?

- General consensus across groups that patients should receive letters due to benefits.
- Clinicians did have some concerns about patients receiving direct copies due to jargon.
- Contrary to clinician perceptions, patients tended to prefer receiving a direct GP copy rather than a personalised discharge letter.
- Clinicians thought patients would not understand letters but patients said they did.
- Patients felt medical terms were not a barrier as terms can be looked up on internet.

RQ4: What are the features and key content-items of "successful" discharge letters?

- Successful letters contained what happened, medication and treatment, advice, and next steps.
- It should be clearly stated what information has been given to the patient.
- Summary and interpretation of results should be included in letters.
- To make letters more patient-friendly, lay terms and plain English should be used.
- GPs and patients in agreement that unexplained acronyms should be avoided.

10.5 Research findings

In keeping with a realist approach, findings and analyses from chapters 6-9 and those in above sections were interrogated for theories relating to patients receiving discharge letters. This interrogation and synthesis of evidence for CMOCs process followed the same methods (376) as described in chapter five (section 5.9). A realist analytic approach (363, 379, 382, 384) was used, specifically Pawson's framework (363) entitled *"synthesis to consider the same theory in comparative settings"*. Thus, analysis was grounded on the assumption that "outcomes" of the intervention of patients receiving discharge letters, may vary according to "context" (363). All data, findings and analyses from thesis chapters 6-10 were inspected for any new or conflicting evidence of *"relevance"* (363, 379, 384) to patients receiving discharge letters. Manual note-taking on data was then undertaken and, following the method for the chapter five realist review (73), judgements were formed as to what any new CMOCs might plausibly be. This process was undertaken for all data of "relevance" (363, 379, 384); the following section forms an updated narrative overview (see previous overview in section 5.13 of chapter five) for CMOCs and concepts relating to how patients receiving discharge letters works (or not), as informed by the thesis evidence.

The sub-heading themes used in chapter five (section 5.13) were used to guide and structure the below narrative overview. Headings were considered iteratively and headings with thin evidence (e.g. doctor-patient relationship) were removed from presentation of findings. The sections below compare previous evidence from the realist review in chapter five with new evidence from the primary research data collection phases (chapters 6-9) and findings from trios and quartets (sections 10.3-4). During this process, the 48 CMOCs from chapter 5 were systematically interrogated in light of the new evidence.

Patient preference/choice

Past studies, across a range of settings, report that patient preference for receiving letters is high (79%-97%) (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574); this study supports this finding as 88% (44/50) of patient participants (N=50) reported they would always like to receive letters: *"…but you know it was invaluable having that discharge letter…"* Written information was often framed by patients as a "need" as opposed to merely a "want". Many patients showed preference to receive a direct copy of what is sent to the GP and for this system of receipt to be "opt out" rather than "opt in". Furthermore, the research findings indicated a multitude of positive outcomes associated with patients receiving letters (e.g. sense of patient involvement (63, 192, 393, 503, 510, 517, 551) [CMOC2]); most of these resonated with realist review findings in chapter five. Despite high patient preference, both GPs and patients noted the inconsistent practice of patients receiving letters. A potential solution to increase consistency of practice was for letters to contain a template "click box" [C] as to whether or not the patient has been given a letter copy so that it can be audit trailed [O] and increase awareness of the practice [M] [CMOC49].

One new CMOC that emerged was that patients may use the letter [M] as a record [C] for expediting and providing evidence for administrative proceedings [O] (e.g. benefits) [CMOC51] or care transferral to new and unfamiliar settings (e.g. holidays). Moreover, patient copies of letters [C] may act as a reminder [M] to increase patient recall (394, 488, 489, 493, 518, 521, 522, 542, 551) [O] [CMOC5, CMOC15] and decrease the need to memorise information [CMOC50]. Additionally, a patient letter copy can reduce the likelihood of any actionable components (e.g. repeat blood test) being "missed" [CMOC44]. Broadly, impacts on patients' experiences were framed as more positive when patients had received discharge letters and more negative when they had not. Crucially, positive outcomes were typically only triggered within key contexts (e.g. letter factually accurate [CMOC15]).

Crucially, patient preference was not 100% and it is important to consider those who may not wish to receive letters [CMOC40] through acknowledgments of *patient choice* (188, 486, 492, 493, 495, 506, 527, 554) [CMOC41]. Moreover, some patients may want to receive letters some of the time but not for every single care episode. Systems of letter receipt must therefore account for individual case variation; patients identified this may apply in cases of repeat admissions for the same condition [C] where letters may be repetitive and not helpful (531, 566) [M] and so not requested [O] [CMOC42, CMOC52]. In line with previous literature, patients generally did not object to social habits being included in the letter as long as it had relevance (67); findings relating to participants from this study caveated this notion in that this information should also be phrased with neutral non-judgemental language [C] in order to reduce likelihood of upset [M] leading to reduced wellbeing [O] [CMOC53].

Comprehension queries and recall

Findings supported previous evidence (67, 489, 493, 546, 555, 566), that patients may understand their letters [M] (e.g. *"I could read it I could understand it")* and that receiving letters may improve patient knowledge and recall [O] [CMOC12-15, CMOC17, and CMOC43]:

> *"…but when you sit there and read it after you can understand it better (.) You can sit there and read it (.) and if you are not sure you can look at it again (.) if they just tell you you are not going to remember…"*

However, letters are not always stylistically tailored to patients' needs. Sample letters often contained unexplained acronyms and jargon [C]; this was inclusive of those assessed as "successful" by GPs [CMOC21, CMOC23, CMOC32]. Consequently, clinicians producing letters need to focus on letter adaptions as outlined in good practice guidelines (63, 69) and past research (58, 198, 518, 526) such as typing letters to increase legibility and use of "patient friendly" language such as lay explanations for jargon (67, 554) , simple interpretations of test results, and avoidance of acronyms (60, 63, 67, 193, 492, 510, 518, 523, 526) [C] [CMOC12]. In addition, GPs suggested use of a "patient information" section on the letter [C] which provides a letter synopsis in the form of a lay summary to increase understanding [M] and improve patient knowledge [O] [CMOC54]. GPs stressed the importance of written information to patients being provided within the context [C] of adequate verbal counselling [CMOC15]; where this did not take place, patients reported confusion [M] and dissatisfaction [O] [CMOC32]. Nonetheless, patients demonstrated resourcefulness (551, 554) such as looking up terms on the internet [CMOC23], as well as discretion [C] through appreciating that understanding the contents and implications [O] may not necessarily involve comprehending every technical term [M]:

> *"You know there is the internet and all sorts of things and if you are not too sure about an expression or a descriptive word you can look it up on the internet"*

Patients iterated that their understanding of letters is important [C] so they can be empowered to take responsibility for their own health [M] and carry out recommendations and plans [O] [CMOC4, CMOC44]. There is a risk that patients receiving letters [C] may increase appointments [O] as patients seek explanations of the letter contents [M] (186, 486, 551) [CMOC29]. Nevertheless, in line with past work (67, 191, 500, 520, 551), findings were that this rarely occurs and indeed no study patients reported having made appointments for this purpose [CMOC7, CMOC11]. Furthermore, patients reported that the absence rather than receipt of the letter is what would prompt them to visit the GP [M] and thus increased patient information [C] may reduce rather than increase the need for follow up appointments [O] [CMOC11].

Personalised or patient-directed discharge letters

Personalised letters may increase resource use and workload (489, 497, 566) [CMOC25]: *"…as a junior doctor in a hospital you don't want to write two separate summaries…"* Additionally, this study found providing patients with personalised letters [C] was sometimes not favoured [O] as patients perceived the letter contents to be too basic or brief [M]: *"I really don't see what use that is to me as a patient".* Moreover, this practice [C] may induce patient anxiety [M] that they have been given different information to their GP (497) [CMOC26] and that their doctors are concealing information which can have ramifications for patient wellbeing [O]: ***"****I don't think it should be hidden from you".* Contrastingly, patients felt reassured [M] by receiving the same letter as the GP [C] and felt this aided communications [O] as everyone was *"singing from the same hymn sheet".* In this work, a few GPs suggested automated templates which populate information into two similar but distinct summaries, one for the GP and one for the patient: *"not necessarily the same as the copy that the GP gets but a more abbreviated form"*.

Patient to deliver letter

Previous evidence suggested patients delivering letters can be unreliable (576)[CMOC31]. Comparably, the patient participants described this process as problematic:

> *"…when you are…not feeling too good after being discharged the last thing you want to do is go to see your GP…and hand them in a copy …"*

Confidentiality

In line with past work (63, 67, 197, 488, 506, 508, 510, 535, 573-575), this research found there may be potential legal and confidentiality ramifications of patients receiving letters [O] [CMOC27-28]: *"if I get a piece of paper I could lose it (.) The doctor can do the same"*. Patients suggested use of email/electronic transfer [C] may be more secure and instantaneous [M] as well as ensuring that patients are not "bed blocking" whilst awaiting letters [O]:

> *"…if it could be electronically as we said through email that would be fantastic I think it would speed up the time and free beds and free time for the doctor…"*

Patient harm

This research found, in harmony with some past evidence (489, 492, 536, 550), that the letter [C] may reassure the patient (574)[CMOC46, CMOC48] and settle or reduce anxiety (558) [M][CMOC37], thus supporting and boosting the patient's wellbeing (67, 554, 574) [O] [CMOC39, CMOC43]:

> *"I didn't even hit depression stage because every other time for the last 20 years when I have been in and out of hospital I have always gone through that depression stage and the only difference is the information that I was given"*

Some patients found clear written information in bad news contexts [C] was particularly useful [M] (492) and allowed them to develop an informed end of life care plan [O]. Broadly, this research found more negative outcomes of patient "harm" associated with cases when patients did not receive letters as opposed to when they did. Thus, contrary to some recently documented clinician views (489, 493, 546) [CMOC6], concealing rather than revealing information may be more strongly linked with negative outcomes. Instances which subverted this trend primarily related to the letter quality rather than the content (e.g. presence of letter inaccuracies caused stress). Suggestions to reduce risk of harm [CMOC20] or negative outcomes included ensuring the content is wholly factual, not communicating new information to the patient via the letter (62, 63, 67, 493) [CMOC38], and ensuring the patient consents to letter receipt (67) [CMOC41].

Clinician views

Some clinicians were in favour (192, 551, 552) [CMOC5, CMOC16] of the practice, "*I think it is an excellent idea*" whilst others had reservations (196, 551, 552, 555) [CMOC6, CMOC35]:

> *"…it can be tricky with a lot of the clinical information whether that might cause them more concerns if they don't understand necessarily everything…"*

Clinicians across studies 2 and 4 appeared to disagree on whether patients should receive letters and the outcomes. GPs appeared to be more in favour than HPs. Nonetheless, some GPs did express issues regarding the inherent need of letters to contain technical information which may not be patient comprehensible leading to queries as well as concerns relating to cases where the patient does not want to know their diagnosis. Hospital clinician concerns included: patient confusion and anxiety (186, 510, 517) [CMOC6, CMOC19], that the patient will not find the letter useful, that letters would need to be oversimplified (504, 554, 575), and that receiving a letter may not be in the best interests of the patient (e.g. mental health cases). Clinician and GP perceived benefits [CMOC5] of patients receiving letters were: increased sense of patient inclusion, improved knowledge (497, 575), and increased transparency (555) [CMOC33] which may in turn enhance the doctor-patient relationship (192, 497, 575)[CMOC9].

Comparably to previous literature, concern regarding "patient understanding" was a common reservation regarding the intervention (205, 517, 554, 555, 575) [CMOC6]. However, the realist review (73) (chapter five) suggested that patient understanding of their letters may be higher than clinicians perceive (489, 546, 551). This research further supports this notion; there were trio and quartet cases where clinicians raised apprehensions about patient understanding [C] and yet the patient reported to understand the letter [M] [CMOC55]. Patient participants expounded that unknown terms can easily be looked up on the internet. Hence, clinician and patient views were sometimes the antithesis of one another and so it may be inferred that clinician concerns about copying patients' letters are potentially unfounded [O] [CMOC55]. Nonetheless, it is important to contextualise this finding within the sample population; excluded and marginalised groups may represent those to whom letters are less comprehensible.

Cost and resources

This research did not provide robust economic analyses [CMOC25]. Findings suggested that patients receiving letters could save resources (566)[CMOC14] by decreasing the need for GP visits and reducing adverse events. This suggestion aligns with some previous research (63, 67, 155, 186, 393, 489, 517) [CMOC7, CMOC25, CMOC42]. Clinicians did note that staff time taken to produce a patient friendly letter must be considered (67, 186, 500, 508, 554, 566) [CMOC23, CMOC32]. Several patients suggested cost of consumables [CMOC10] could likely be eradicated through use of email and electronic transferral: *"its costs and if you want to keep costs down don't have paper you know…"*

Autonomy

Following previous literature (62, 506, 516, 554, 572), study evidence suggested that providing patients with copies of their letters can increase their autonomy and encourage them to take control and *"ownership"* of their health [CMOC1-2, CMOC4-6, CMOC8, CMOC14].

Refined resultant programme theory

Following secondary data analysis, the programme theory (PT) from the realist review in chapter five (page 129) was further developed and systematically updated based on data and analyses across studies in chapters 6-10. The PT was refined using a realist logic of analysis (363, 379-382, 384) on all of the thesis primary and secondary data (see chapter five for further details on realist methods). Thus, all sources (e.g. patient interviews), analyses and findings from earlier in the thesis (e.g. quartet summaries) were re-read and interrogated for evidence of *"relevance"* (363, 379, 384) to the PT for when patients receiving discharge letters works (or not). Relevant evidence was inspected and notes were taken on any new CMOCs, theories or concepts; these were then integrated into the working PT (see figure 10.5.2) until all relevant evidence had been considered and the resultant PT was formed (see figure 10.5.3). The table of 48 CMOCs from chapter five were also developed resulting in seven additional CMOCs (seen in table 10.5.1).

Table 10.5.1 New CMOCs integrated into PT

CMOC	**Context**	**Mechanism**	**Outcome**	**Evaluation**	**Does it work?**
CMOC49	Tick-box/template allows letter copies to patients to be monitored and audit trailed	HP becomes aware of practice of copying patients letters	Increased practice of patients receiving letters. Inconsistencies can be monitored for improving uptake	positive	Does work
CMOC50	Letter acts as record of consultation and given to patient	Patient reminded of consultation	Patient recall increased and no need for patient to remember all consultation information	positive	Does work
CMOC51	Letter acts as record of consultation and given to patient	Patient prompted to use letter for administrative proceedings without need to contact GP or hospital	Letters can be used as proof of illness for benefit receipt, government support, disability applications and allowances, or time off work	positive	Does work
CMOC52	Patient episode of care due to repeat or ongoing condition	Patient feels already informed about condition	Patient chooses not to receive letter preserving resources	positive	Does work
CMOC53	Patient receives letter with irrelevant or poorly phrased social habit or behaviour details	Patient feels judged and upset	Patient reflects on episode of care poorly and wellbeing negatively impacted	negative	Does not work
CMOC54	Letter provided to patient with additional patient information section	Patient understands summary	Patient knowledge increased and patient reassured that the important content points have been communicated	positive	Does work
CMOC55	Clinician concern about patient understanding letter	Patient feels they do understand letter	Clinician concerns potentially unfounded. Patient values receiving letter	positive	Does work

Within table 10.5.1, CMOC50-53 build upon previous evidence synthesised in chapter five and so are not new theories but developments of old theories. The remaining CMOCs present more new or novel pathways based on study findings. Study evidence from both the patient and GP groups suggested that a tick-box for patient receipt [C] as part of the discharge template may increase awareness of the practice [M] leading to increased uptake and monitoring of inconsistencies through auditing [O][CMOC49]. Another suggestion from both GPs and patients was the addition of a “patient information” section on the discharge letter [C] in order to increase patient understanding [M] and lead to heightened patient knowledge and satisfaction [O] [CMOC54]. The quartet and trio methodology allowed for direct comparisons across matched cases which highlighted several patients reporting to understanding their letters [M] in contexts where clinicians had concerns [C]; based upon this it may be inferred that patients' value letters and clinician concerns may be unfounded [O][CMOC55]. The three CMOCs which are new [CMOC49, CMOC54-55] are key contributions toward the evidence base and support good practice of patients receiving letters whilst suggesting two modifications (tick-box and patient section) to discharge letters in order to improve patient experiences and outcomes. Following CMOC refinement, new CMOCs and evidence were integrated into the PT in figure 10.5.2 (also in chapter five page 129) to produce the resultant PT for when patients receiving discharge letters does and does not *work* in figure 10.5.3; changes to the PT are highlighted in bold. These figures are overleaf.

Figure 10.5.2 Programme theory from chapter 5

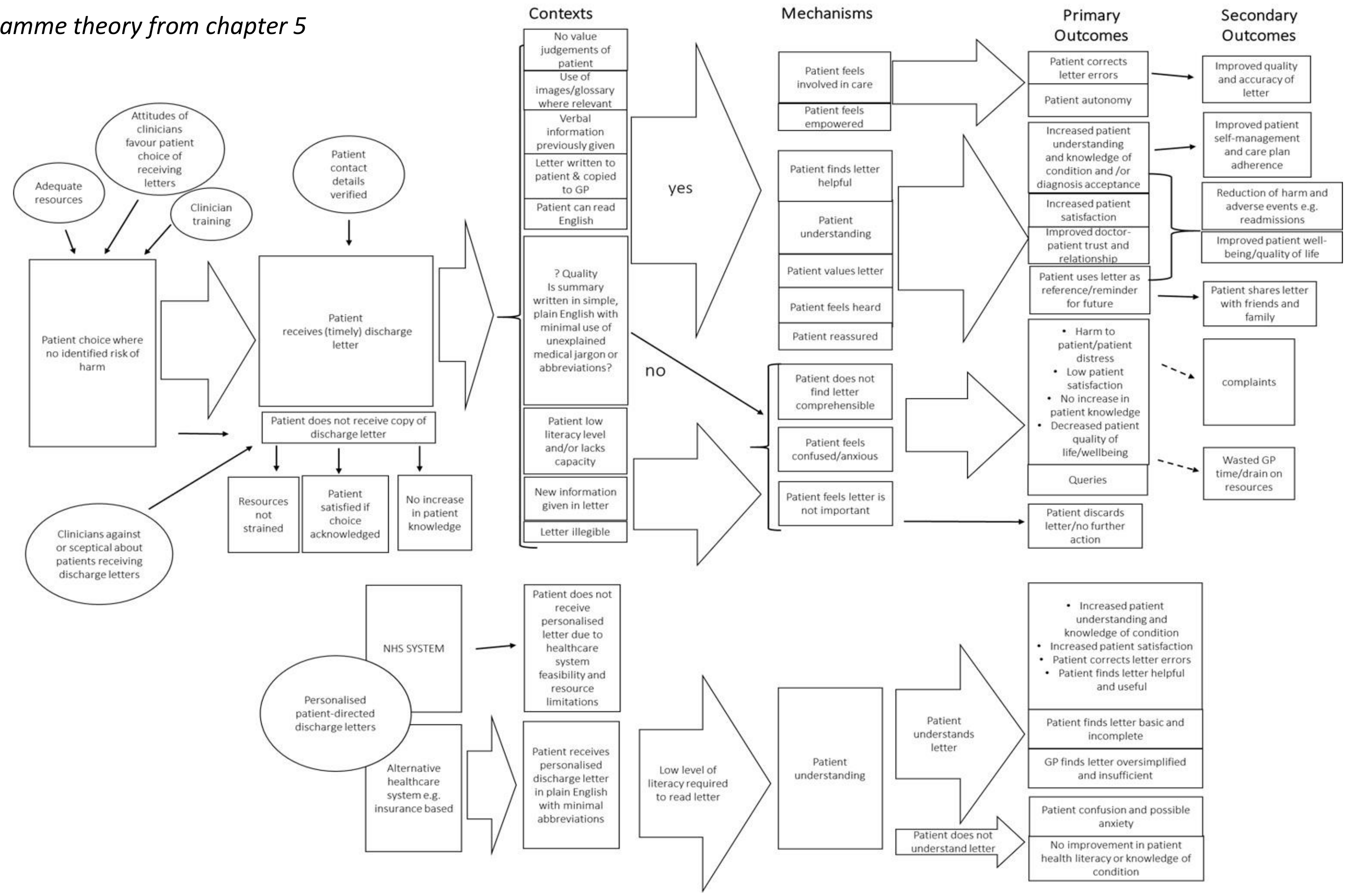
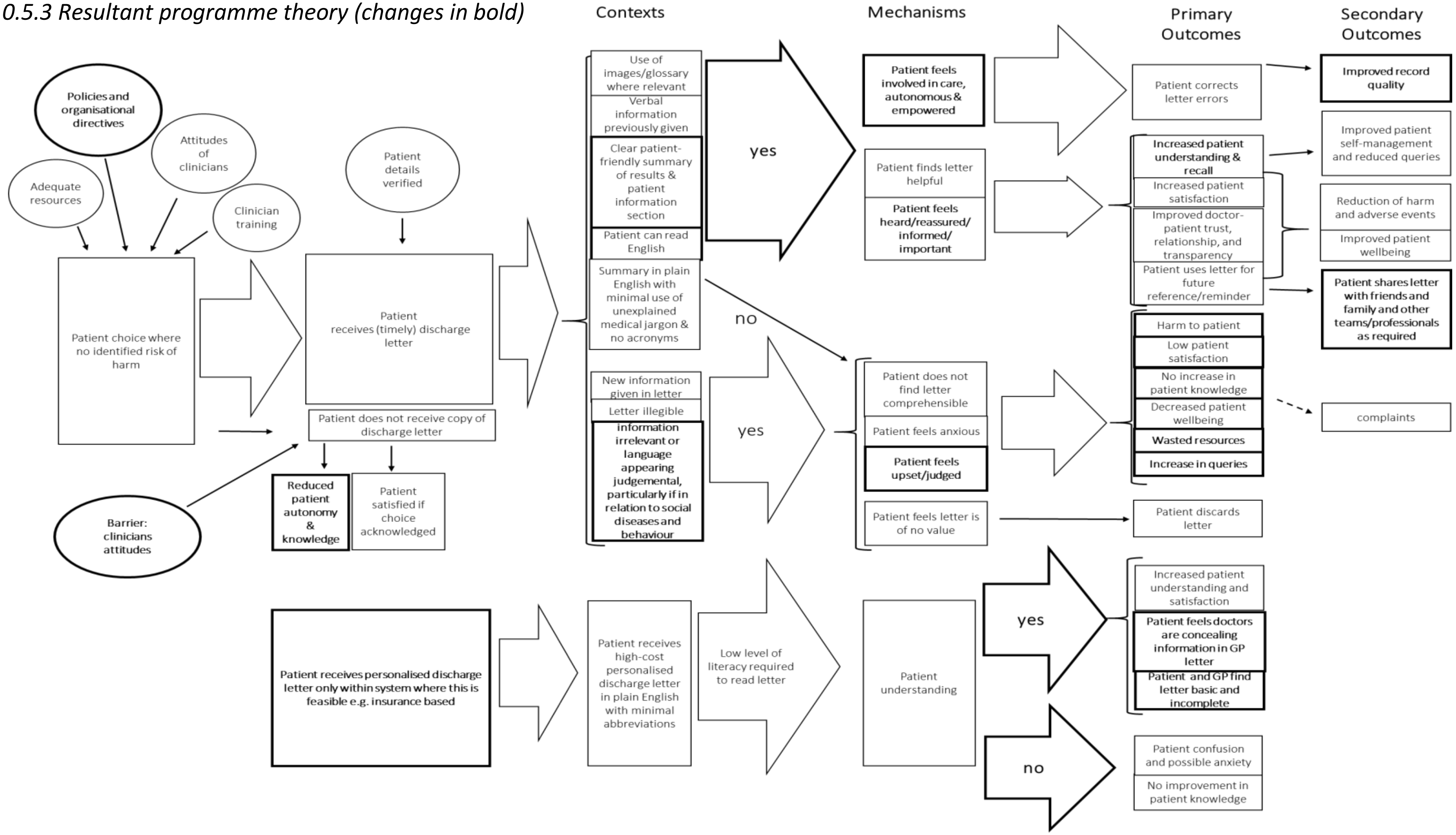


Figure 10.5.3 Resultant programme theory (changes in bold)



The resultant PT still shows two main channels for CMOCs: patient copies of letters and patient personalised letters. Contexts for when patients receive letters still contained five key contexts for when this intervention does work but context details were modified. Previously, the PT had four key contexts for when the intervention is theorised not to work; these were condensed and updated to include the new context, *information irrelevant or language appearing judgemental, particularly if in relation to social behaviour* [CMOC53]. Outcomes of patients receiving personalised letters were modified; negative outcomes were increased due to low patient favourability for this letter form due to overly “basic” content and perceived potential secrecy between clinicians if they are sending and receiving separate letters. Patient outcomes throughout the PT were simplified and clarified and mechanisms have been clustered together where possible [CMOC50-51, CMOC54-55]. “Patient choice” continued to emerge as a key influencer for likelihood of beneficial outcomes, and contextual influences such as resource provision and directives [CMOC49] were determiners of patients receiving a “choice” and supply of letters [CMOC52]. Notably, the PT contains clear pathways for when the intervention *does* and *does not* work and, similarly to the earlier PT, contexts may be combined to increase chance of positive outcomes.

10.6 Strengths and limitations

Methods and methodology

An advantage of the protocol and study design was the use of PPI and GPI in the early stages of the research to identify and refine research questions for the project; this increased the relevance and applicability of the research. The study protocol was also advantageous in that it promoted transparency through providing patients the opportunity to view their letters at interview. Due to the high proportion of letters available within interviews, data collection of patient experiences did not have to rely on memory-recall alone.

The research is rooted in realist theory which has strengthened explanation of the research findings. A realist approach considers that a theory or intervention may work in some contexts but not others and actively seeks to interrogate evidence for outcomes and triggering mechanisms in order to recognise and define the important contexts (363, 379-381, 384). Discharge communication is complex in multiple ways, including but not limited to factors of interpersonal skills, psychosocial responses, individuality of communication styles, reasons for admission and discharge, and the dynamic nature of discharge systems and organisational policies. A realist approach has allowed synthesis and analysis of evidence in this research to move beyond evaluation of whether or not discharge communication works and instead look at *when* communication may work, *how* patients may be involved in this process, and *why* and *for whom* discharge communication may be successful or not; all of these elements are relevant to future delivery and policy surrounding discharge letters. This research calls for a movement away from blanket-policies such as "good practice" (63), to an approach to healthcare communication which is individualised and centred on patient choice which acknowledges the complexity of each patient discharge case. Thus, critical realism has provided a useful framework to consider how discharge communication could be improved, and to explain how and why discharge letters could meet the needs of both GPs and patients. Furthermore, the realist approach produced a programme theory for how patients receiving discharge letters *works.*

Recruitment, sample size, and data collection

The sample size of letters was intended to be large enough to identify common drivers for GP assessed "successful" letters but small enough so that more in depth qualitative analyses could feasibly occur. Nonetheless, there were limitations of the sampling strategy. Letter sampling was limited to a single region (West Midlands, UK). As all patients for selected letters needed to be eligible for interview, it is acknowledged that the sampling strategy reduced the letter sample diversity. The patient and letter samples were further limited by the study inclusion and exclusion criteria. Letters relating to children (<18 years), persons unable to take part in English, discharges relating solely to mental health, and cases deemed by GP to lack capacity or be unsuitable for the study were excluded. Inclusion of these groups of patients would have raised ethical and logistical issues that to address would have involved resources beyond those available to the project. Notably, although the study excluded persons unable to take part in English, the study did not exclude persons who may have learnt

English as an additional language. Thus, people may have taken part in the research who were speaking and/or writing in a language (English) that is not their native language; this may have potentially impacted upon results such that this group of persons may have had different discharge communication views and experiences from native speakers of English, for example, in relation to preferences for the language and grammar used within discharge letters. However, whether or not participants had learned English as an additional language was not formally recorded and so it is not possible to speculate further.

Patients were invited to take part through written materials sent in the post by the GP practice which may have dissuaded patients with low literacy from taking part. Financial barriers of participation (e.g. childcare) may have further limited sample diversity. Recruitment of marginalised groups such as ethnic minorities and those with low literacy was limited. Thus, generalisability of findings was also limited. The sample was further limited by the diversity of GP letter selection and also by the diversity of the GP practices that agreed to participate and the hospital teams to which the practices generate referrals. As discussed in chapter six, the sample related disproportionately to inpatient discharges and so the applicability of findings to outpatient, day case, and Accident and Emergency was limited.

There were both strengths and limitations of using “deviant case sampling” (323, 396) of letters. The advantage of sampling extreme cases of letters was that this maximised sample variation and produced both model exemplars of discharge letters (“successful”), as well as discharge letters which had issues (“unsuccessful”). Both types of letters were arguably relevant for a project which sought to look at ways in which discharge communication could be improved. Not only were the sample letters themselves of use for content analysis, but selecting extreme cases acted as a stimulus for participants to provide their views on how written discharge communications could be improved. Other types of sampling methods which aimed to be more representative of NHS discharge letters would have likely included more “neutral” letter samples, that is, those which are neither particularly “successful” or “unsuccessful”. Consequently, this may have resulted in participants having little to say, neither good nor bad, in relation to the discharge letter and their experience, and hence no suggestions for improvement may have been made. The main disadvantage of using “deviant case sampling” was that the sample of discharge letters was not representative of letters "typically" received in General Practice and so results do not provide information relating to the current "average" quality of NHS discharge letters. Thus, it is unclear from findings what *most* discharge letters and written discharge communication experiences are like. However, as described above, this was not the purpose of the research.

The letter sample strategy facilitated building a heterogeneous sample of discharges (e.g. type of admission, discharge speciality…). Kuper *et al.* (396) wrote that, *"the contextual nature of qualitative research means that careful thought must be given to the potential transferability of its results to other sociocultural settings"* (396) (p.688). In line with a realist approach, transparent decision-making and constant consideration of context was made throughout the research in order to give thought to the potential transferability of results and findings. The implications for practice and findings throughout this research have a degree of transferability. The results and findings described here may be transferable to other settings where adults may receive letters or written information such as following outpatient hospital clinic appointments. However, when considering this transferability, it is important to note the contexts of the findings in this research and those groups who were excluded or whose views were not represented in the research (e.g. children). Therefore, findings are not necessarily transferable to all healthcare settings where adults receive letters but potentially non-psychiatric settings which relate to adults who have cognitive capacity and read the native language.

The sequential nature of data collection alongside attrition meant that for most discharge letters it was not possible to form a complete quartet. Nonetheless, trios still provided valuable insights and population group findings were considered in their own right in chapters 6-9. The primary reason for not attaining the target number of quartets was due to issues with HP recruitment. HP responses were probably affected by "nonresponse bias" (464). Goodwin & Kerri (606) define *nonresponse bias* as *"when those who return surveys differ in some important way from those who don't return them"* (p.474). Due to ethical and GDPR restrictions, it was not possible to find out further demographic information regarding clinician nonresponses. Hence, the sample was limited in terms of applicability and generalisability. Nevertheless, although the conclusions have limitations, the findings revealed insights into views of patients receiving discharge communication which is vital for a continually progressive healthcare system which places patients and models of shared-decision making at its core.

A further limitation of data collection was revealed through the single GP focus group in study 2 (chapter seven). During the GP-led discussion, GPs reflected upon their letter gradings (successful/unsuccessful) and in a few cases (<5) after re-review and discussion with peers, some GPs felt their gradings could perhaps be modified in a few borderline cases. This highlighted the selector bias of the sampling method and the subjectivity of the gradings themselves. Letter gradings were subjected to variable and uncontrollable factors such as the GP disposition and mood, GP previous experience with discharge communications, the other letters they had viewed that day, and whether or not the selection process had been talked about with GP colleagues. Hence, letter gradings were limited in that they were not necessarily objective or consistent across the sample. However, gradings were not intended to be entirely objective as the purpose of selecting and grading letters was for GPs to reflect and comment on their own assessment of what makes a “successful” or “unsuccessful” discharge letter. Moreover, the letter selection and grading system was designed to mirror real-life experiences; the GPs were requested to select letters as they were received and processed in everyday practice and so the letter gradings and comments reflected how “successful” the letter was perceived to be at communicating with the GP on the day it was received. Thus, as the gradings capture real-time reactions and perceptions of letter quality, the initial gradings may be argued to be the most valid. However, it is acknowledged that repeat reading of letters, such as undertaken in the interviews and focus group, can increase comprehension of letters. Such repeat reading may also take place in practice and so it is important to take this into account when considering the validity of the letter gradings and comments. Overall, although it is important to acknowledge the subjectivity of the grading system, it was not viewed as problematic to the study design or outcomes.

Data analysis

The analytical methods were strengthened by the triangulation of methodological approaches to data analysis. Combining approaches from health sciences and applied linguistics (CL) was a strength of the research and added value through illuminating findings that may not have appeared in the same way had either method been used in isolation. The combination of methods allowed analysis to be systematic and in depth, and yet also produced generalizable findings in relation to the language and content of discharge letters.

One of the main methodological strengths of the research was the triangulation and comparison of results and findings across groups through the “trio” and “quartet” analytical methods. Quartets and trios allowed for data similarities and differences to be compared and contrasted for disparity reconciliation. An example of disparity reconciliation was in relation to “patient understanding”. As outlined in chapters two and five, clinicians often express concerns about patient understanding due to the medical terminology typically present in discharge letters (196, 197, 205, 509, 510, 554, 555); data from this study has revealed that even in letter cases where clinicians expressed concerns, patients generally reported to have understood the letter. Patients demonstrated resourcefulness and resilience for accessing letter content, often looking up terms on the internet, and also appreciating that to understand the important features of a letter does not necessarily involve comprehending every word. Another example of disparity reconciliation was in relation to “negative outcomes” of patients receiving letters. A common clinician concern, outlined in previous literature in chapters two and five, was that patients receiving discharge letters may cause patients anxiety through addressing difficult topics and causing confusion and hence harm (502, 510, 554). However, literature also reported that patients may find their letters useful (489, 503, 554, 566). Again, the quartet method highlighted that in several cases where clinicians were concerned about negative outcomes, patients who received letters tended to emphasise the positive effects of the letter. Indeed, contrary to clinician concerns, patients stressed negative outcomes such as anxiety in contexts where they *had not* rather than *had* received letters. Some patients reported that receiving the letter in fact alleviated anxiety through providing reassurance that their GP was updated and they themselves were informed of their admission and the next steps. Hence, generation of trios and quartets allowed single written discharge communication events to be analysed from different perspectives in order to highlight differences and similarities between the experiences and perceptions of those involved. This facilitated direct viewpoint comparisons and reconciliation of discrepancies which thereby enhanced the relevance of the research suggestions for how to improve discharge communication. Moreover, matching perspectives to specific discharge letters has allowed for the content of the letter to be evaluated across multiple groups. This has highlighted elements which are considered "key" and generally agreed upon across groups (e.g. diagnosis) as well as elements which may be prioritised by particular groups (e.g. GPs focus on reasons for medication changes) but potentially overlooked or not mentioned as valuable by others.

A further methodological strength was the use and application of CL methods. CL is often described as a scientific method of language analysis (466) and it was therefore an appropriate method for application to scientific data situated within the field of health sciences. CL is a systematic way of studying language in a dataset; Semino *et al.* (432) describe that a corpus:

> *"Makes it possible to test –and therefore to validate or reject – hypotheses about the way that language works and to refine an understanding of the potential implications of specific linguistic choices".* (432) (p.12)

As CL in healthcare is an emerging field, its application to the dataset has demonstrated the usefulness of this method in order to expound key language features of large bodies of text and analyse words according to context such as looking at surrounding collocates. The CL methods permitted consideration of patterns in terms of language use and meanings within the data, that is, a linguistic approach to the data facilitated an analysis not just of "what" was said but "how" it was said. For example, concordance line inspection highlighted different semantic prosodies of several keywords; this information was combined with results from other CL tools to consider in detail how discharge communication was described and evaluated by the different study population groups. The CL methodology in chapters 6-8 was a strength in that it allowed manual and computer-assisted study of more generalizable quantitative features as well as fine-grained qualitative analyses (24, 427). CL permits examination of language patterns over small to very large data sets (640). Consequently, CL permitted rapid identification and exploration of patterns and thus analysis of a larger body of data than would have been possible through manual searching alone (23, 410, 419, 427). As McEnery and Hardie (436) suggest, the quantitative nature of CL also allows and increases accountability of findings in order to satisfy falsifiability standards in that the entire corpus can be quickly electronically searched as opposed to a need to manually search a small sample which may be favourably selected or not representative of the corpus as a whole.

Baker (448) advises that, *"we get to know our corpus well before we start to extrapolate conclusions from it"* (p.43). Subsequently, KW's high level of familiarity with the data may be considered one of the strengths of the analysis; KW collected, transcribed, cleaned, processed and compiled all data including the corpora. A further strength of chapters 7 and 8 was that analysis was keyword-driven. Culpeper and Demmen (596) outline two main advantages of this approach as follows:

> *"First, it is less subject to the vagaries of subjective judgments of cultural importance. Second, it does not rely on researchers selecting items that might be important and then establishing their importance, but can reveal items that researchers did not know to be important in the first place"* (596) (p.90).

Thus, keyness techniques permitted analyses to be systematically approached and grounded by "key" statistically significant findings rather than those of interest to the researcher which reduced bias. A further methodological strength of the CL analysis was the close inspection of all concordance lines for "hits" in addition to random samples; the combination increased the reliability and robustness of findings. The study is further strengthened by the considerations of dispersion applied throughout which deduced whether a supposedly "key" feature was truly "key" multiple times across multiple texts or merely multiple times within one text by one speaker. Thus, as Baker (448) suggests, considerations of *dispersion* can help to avoid or at least reduce false positives and over-generalisations. Following this, considerations of *dispersion* reduced but did not eradicate bias that may have resulted from interview length irregularity whereby some participants talked more and so there was potential for these persons' views to be over-represented in results and analyses.

Although the analytical methods in this research had several strengths, there were study limitations. The corpora were not annotated which is a considerable limitation; previous studies (432, 461) have successfully annotated corpora due to the arguable benefits such as increased rapidity and specificity of searches and results (e.g. words tagged by semantic domain). Instead, lemmatisation took place manually through compiling results for word variants. This meant verb variants were originally listed as separate "words" in corpus outputs and so each one had individual lower frequencies than if the word had been annotated for lemmatisation. Although computer-assisted lemmatisation aided by annotation may have been more reliable for compiling results, this method is extremely time-consuming. Consequently, computer annotation was not deemed necessary as this project focussed on "what" participants talked about in a broader sense related to discharge communication and so in-depth analysis of grammatical forms and word variants was not felt appropriate or relevant within the project scope. Furthermore, the human error involved in manual lemmatisation was felt to be minimal.

Corpora can vary in size and larger corpora may be formed of millions of words (410) e.g. the *BNC*. Specialised corpora are often reasonably small in size (418); a small corpus can be defined as 20,000-200,000 words (641). The time-consuming nature of compiling spoken corpora compared with written corpora is well documented (418, 642, 643). Thus, corpora sizes were restricted due to the time taken to obtain permissions, collect, transcribe, categorise, and clean data (643). The GP corpus (53,643 words) and patient corpus (135,637 words) may be described as reasonably small (641) *static* (440) (fixed in size) and specialised (410, 641) corpora, composed of views on discharge communication. Corpus linguists such as Bartsch & Evert (451) suggest that, *"larger corpora do not necessarily lead to better results"* and furthermore that *"composition and cleanness of a corpus are more important than corpus size"* (p.59). Comparably, Weisser (440) writes,

> "*The more domain-specific the research interest is, the smaller the corpus can be because often it is only necessary to extract specialised vocabulary or constructions from it in such cases."* (440) (p.44)

Albeit that the corpora were small, they were built from answers to interview questions which centred on the RQs and so the corpora did suit and were customised for the needs of the research; this was one of the advantages of building unique corpora as opposed to using established corpora for analysis.

Mixed methods and qualitative literature discuss the concept of "credibility" in relation to *validity* *(329, 460, 471, 472, 644)*. "Credibility" or "trustworthiness" was increased through using concordance lines and quotes to support interpretations, considerations of dispersion, simple presentation of analysis, and use of meta-matrices to highlight trend exceptions and any data contradictions (397, 472). This aimed to reduce risk of "cherry-picking" and making claims which were not evidenced by data. Nonetheless, dispersion considerations could have been more statistically complex and robust, as seen in previous CL works (414, 458, 461, 587, 596); such methods were not used due to time limitations.

All analyses were subject to a degree of bias (402) due to the fact that analysis took place after data collection and so I was aware of contextual aspects and implications of letter cases from the perspectives of GPs, patients and hospital professionals (HPs). This means the analysis presented, although statistically grounded and based on quantifiable features, should not be considered entirely objective.

Data analysis was also limited by the available evidence. Notably, evidence was thin in relation to dictating letters, cost of patients receiving letters, doctor-patient relationships, and reasons for variation of practice. Statistical analyses were limited as techniques could be nonparametric only due to data limitations of small sample sizes, predominantly categorical variables, and skewed data. Drawbacks of nonparametric methods included that they were less powerful than parametric tests and therefore less sensitive to detecting existing differences within the data (464, 619). Moreover, nonparametric inferences were *"unable to produce accurate and precise generalizations"* (621) (p.76).

It must be recognised that analysis has been systematic but not exhaustive. Thus, there may be more insights to be gleaned from the data than those described here.

My role as researcher

In line with previous CL studies (645), it must be acknowledged that CL analysis cannot be considered wholly objective due to the influence of researcher identity (645) and unconscious bias. As Szudarski (418) explains computers in CL may generate and process data but it is the researcher who interprets the data which means the accuracy and reliability of findings *"depends to a large extent"* on the researcher disposition and skills (p.10) (418). Additionally, qualitative data analysis can be particularly subjective. Valid and un-biased interpretation of qualitative data may be limited by the researcher; individual identities and attitudes inherently impact upon data interpretations (471, 645). Therefore, "reflexivity" was practised throughout the research to account for these subjectivities and reduce but not eradicate bias (471, 472). Reflexivity was practised through keeping a research diary and also making notes during and after participant interviews to reflect upon researcher influence. One such influence that was noted was the used of “personalised” in the patient interview corpus. The patient interview questions did not use the word “personalised” (see full patient interview schedule in appendix C). However, some participants asked for clarification of the meaning of question five (*“would you prefer to receive a direct copy of the letter sent to your GP or a separate letter specifically addressed to yourself?”*) and in response I, as the interviewer and researcher, tended to clarify that the former was a letter written to the doctor whereas the latter was more of a “personalised” letter written to the patient directly. The result of these interviewer clarifications was that it influenced and impacted patient’s answers; several patient participants then used the term “personalised” when answering this interview question (see section 8.4 in chapter 8 for results of “personalised” within the patient corpus).

The introductory thesis chapters outlined my motivation to undertake this research; the methodology section of the thesis (chapter four) provided an opportunity for me to outline the philosophical foundations that underpin the thesis to include the epistemological position of critical realism. My identity as a linguist and health scientist and as well as my role as a service-user and researcher, former role as a medical secretary, and role in society as a white middle-class disabled female have impacted upon subjectivity of interpretations and the research process such as participant connections. My personal identity and values which are rooted in inclusivity and feminist principles also impacted interpretations.

I had “insider” knowledge of different sides of discharge pathways in that I have been a discharged patient and part of the team who discharges patients. Participants’ motivations to participate often resonated with my own motivations in that they had had previous poor discharge communication experiences and wanted to improve communications and discharge care for future patients. My past experiences and role as a researcher likely influenced prompts used and the extent to which participants volunteered information as well as influencing what participants talked about. My role as researcher and my linguistic and patient background also influenced the design and phrasing of the interview questions; this in turn impacted data. An example of this was the choice of the word “feel” in question three of the patient interview schedule. Question three asked patient participants, *“how did you feel about the information you were given?”* (See appendix C for full patient interview schedule). The word “feel” was used with the intention of generating data relating to “mechanisms” in order to build and refine CMOCs for realist programme theory development and refinement. Therefore, asking patient participants about their “feelings” in the interview particularly sought to prompt participants to talk about the emotional impacts and any psychological effects of their recent discharge communication experience. The question deliberately used the broad term “feel” rather than specifically asking after “emotional and psychological impacts” as the latter may have made participants feel pressured into providing sensitive and potentially upsetting details relating to any trauma or negative wellbeing impacts they experienced; this was not deemed necessary or appropriate for the purposes of the research project. Thus, the word “feel” was selected as it allowed participants, if they preferred, to give only a short answer to the question, summarising only what they wanted to say; this allowed participants to simply indicate that they felt the information and experience was “good” or “not good”, whilst also providing those who wanted to give more details relating to feelings or emotions, the opportunity to do so.

The data analysis was affected by my role as a researcher. I have situated the research within the emerging field of patient-centred care and shared decision-making; this meant that participant experiences which valued a paternalist model could have been overlooked or minimised. However, I explicitly reflected upon such biases through the research in an attempt to mitigate influence on data analysis and interpretation. Therefore, these reflections informed the research and ensured that I kept re-addressing the overall research aim to improve discharge experiences.

Funding

This project was a collaborative studentship partly funded by the ESRC and also by the CCGs of South Warwickshire, and Coventry & Rugby. The CCGS were engaged at the start of the project in establishing the research focus as well as throughout the project including data collection; a presentation at a practice managers meeting arranged by a CCG member resulted in recruitment of a few of the GP practices (the remainder were mostly recruited through the CRN). The CCGs collaborated on the research as there was an inherent expectation that the research would produce findings of value; this motivated the CCGs to engage with the research from the outset and created an immediate audience for the research. Overall, it is felt that the collaboration strengthened the pathway to research impact as many of the opportunities for dissemination and presentations discussed in section 10.7 (local dissemination) would not have been possible without this collaborative work. For these reasons, this collaboration with the CCGs is one of the strengths of this research.

10.7 Research dissemination and PPI: Sharing of results and stakeholder perspectives

Local perspectives

Sharing of the study results on a local level took place in the summer of 2019 toward the end of the discharge communication study. In line with the process of collaborating involvement (476), a plain English summary of the results and study recommendations for practice was shared with participating GPs and hospitals and individual HPs, GPs and patient participants who indicated interest in the results (~90%) and provided contact details on their consent form (see appendix J for copy of the summary of results used for dissemination work). The results summary encouraged participants and stakeholders to provide feedback on the results, particularly any "missed" areas or implications for practice, and stated that this feedback would be anonymously collated and published. Results were shared and feedback was received via group discussions (presentations), the CRN participate newsletter, individual telephone and electronic feedback via email, and face to face discussions.

GP feedback (<5) was that summaries remain to be of poor quality and the need for research and improvements in this area is ongoing. One GP telephone discussion took place. During this discussion, the GP highlighted that the summary of results was generally in keeping with the thoughts and feedback of all the practice GPs who participated (N=6). The GP noted that they felt the most important outcome of the research would be to highlight the need to standardise both templates for discharge letters and practice of patients receiving letters. The latter was suggested to work best as an “opt out” system whereby patients could opt out during their secondary visit and that this could be logged on their health record, either as a one off or ongoing preference. The GP reported that information regarding diagnosis, medication changes, and actions required are essential items that should not be missed off any discharge summary. They also noted that letters need to be improved in terms of patient communication such as avoidance of acronyms and use of clear simple terms for important information. During the telephone discussion, the GP also noted that training on letter writing needs to involve primary and secondary care; they posed the idea that medical students could follow one patient from admission to discharge and write the discharge summary under supervision as part of a case report review.

Feedback received from patients (<5) was generally that letters are OK but sometimes lacking in the required patient information. In addition, patients noted issues with lack of continuity of care, particularly in regards to inadequate or unclear follow up arrangements after hospital discharge.

One hospital professional (consultant) contacted to request that I visit the hospital to discuss the results in more detail. During the visit, the HP noted the ongoing issues with the computer-generated Accident and Emergency summaries which are populated by an automatic computer system as opposed to being written by a member of hospital personnel. The HP said that this has been a point of contention for many years as these summaries fail to communicate clinical nuances with GPs but that change in this area has not been possible to orchestrate at their hospital. The HP mentioned one particular issue with these computer summaries is the number of “blank” boxes and that where no action was taken this is stated but not rationalised; this gives the potential false impression that there was no work or care undertaken and the patient did not require a hospital visit whereas in reality the decision not to run tests may have been a complex reflective process (invisible labour) by the care team for specific reasons. The HP advocated for sharing information with patients through an “opt out” system and felt communication quality of letters and systems need to be ameliorated in order to continue this practice with success.

The results were also circulated by email to the collaborating commissioning groups and the research was presented in person to the CCG of Coventry and Rugby alongside attending GPs (~20). The presentation was well received and a lively discussion followed in which several points were raised: the need for “opt out” systems to operate through secondary rather than primary care, the importance of this area of research, the model summaries produced in Leicester which include a lay patient information section, the need for discharge summaries for deceased patients rather than just death reports which contain a brevity of information, and the need for secondary care providers to hear about the study results and be aware of the recommendations.

Communications with the CCG of South Warwickshire are ongoing; the plan is to further disseminate the research on a local level through presenting to this collaborating CCG.

Following a realist approach, it was important to receive feedback from stakeholders and to provide stakeholders an opportunity to influence the research recommendations and highlight any “missed” areas. However, unlike with the involvement stage in the realist review (see chapter five), the involvement work here did not directly influence the research thinking in terms of the programme theory. However, the dissemination and involvement work validated the content of the theory itself as well as the research findings. Additionally, minor adjustments to the implications to practice were made following dissemination work, for example, GP stakeholders recommended that patient preferences are logged with their discharging hospital rather than by their registered GP (as suggested by patients) due to difficulties with access and sharing information across primary and secondary care interfaces via health records. Overall, the local dissemination and involvement work highlighted the need for wider dissemination of the research as the various stakeholders demonstrated marked interest in the research outcomes given the implications for practice.

Overall, this involvement stage was valuable to transparently communicate with participants, disseminate the research, and increase the relevance and impact of findings.

National and international dissemination

The same research summary of findings written in plain English (see appendix J for results summary) which was circulated to local groups was also distributed on a wider scale through use of Social Media. The results summary was posted on *Twitter* and *Research Gate* in order to reach a wider audience than was possible through the local dissemination work. In addition, during the course of the PhD, the work was presented at *SAPC*, an international conference which focusses on Primary Care research and practice, *WICAL*, Warwick's international conference in Applied Linguistics, and *RCGP*, a national conference for those working and researching in General Practice. The work was also further disseminated on a national and international scale through academic outputs. As detailed in the declaration section of the PhD, two papers have been published in the *BMJ Open* to date (the realist review (73) from chapter five and realist review protocol (376)), and the protocol paper (72) has been published by *BMC Health Services Research.* A further paper relating to the findings for study 3 (chapter seven) was accepted for publication by *BJGP Open* on the 12th November 2019. Further papers are planned and in progress relating to the remainder of the research results.

Future dissemination work

Further dissemination work for the outputs of this research is planned in order to maximise the impact of the research. Upon completion of thesis submission, a summary of results will be circulated to the HRA and REC who granted ethical approval for the research. An outcome of the above CCG presentation was an invitation to present at another local event. Therefore, communications with the CCG are ongoing.

10.8 Discussion

The following sub-sections of the chapter are a discussion of the key findings in respect of the study research questions, contributions to knowledge, and implications for research and practice. These discussion sections include how best practice of patients receiving letters may be improved and how the practice may be theorised to work effectively in order to generate recommendations for practice and policy directives.

Contribution to knowledge

A contribution of this research is that it has directly compared written discharge communication experiences through capturing the views of patients alongside GPs and hospital professionals in relation to specific discharge letters in order to generate multi-perspective “quartets”. As discussed in chapter 4 (section 4.1.2), many recent healthcare studies (351-358) have drawn on mixed-methods approaches for collection and analysis of data. Multi-method qualitative and mixed methods designs have also been used in research in the field of health sciences for the purposes of triangulating results and findings (343, 646-649), particularly in relation to healthcare consultations (650-654). Several consultation studies (650-653) use triangulation as a methodological approach to compare multiple perspectives (typically, doctor and patient); some studies (650, 651, 653) also triangulate these perspectives with analysis of the consultation itself. Such consultation studies often focus on convergence and divergence between data and perspectives. An example of this in relation to UK NHS consultation research is a study by Mendick *et al.* (650) on decision-making in breast cancer consultations. Mendick *et al.* (650) recorded breast cancer consultations and then separately interviewed the patient and surgeon after the consult (within seven days) to explore their perspectives on the decision-making process; results and findings are then qualitatively compared and triangulated for analyses. Similarly to the current study “trio” and “quartet” summary tables, Mendick *et al.* (650) developed narrative summaries which combine all data sources for each case. Thus, it is important to note that using and triangulating multiple sources of data to elucidate understanding of a phenomenon is not novel itself. However, to the best of my knowledge this is the first research project to attempt this in relation to written communication events, specifically, hospital discharge letters. Written communication events differ to spoken communication events, such as consultations, as they inherently span time and settings; discharge letter communications also necessitate involvement of at least three independent groups (patient, GP, and HP) as opposed to the more standard two groups (practitioner and patient) within spoken consultations. Hence, an important methodological contribution of this mixed-methods research is that, through an innovative exploratory design (“quartet method”), it has investigated and triangulated discharge communication experiences of patients, GPs, and HPs, alongside a corresponding discharge letter sample. The somewhat novel quartet method has been advantageous compared with previous studies in the area of written discharge communications as these either make no comparisons between populations or make general comparisons across groups drawing on broad discharge experiences as opposed to those relating to specific cases (see literature review in chapter two and realist review in chapter five). Subsequently, the quartet method of aligning perspectives in relation to written discharge communication events has allowed findings to shed light on previously reported discrepancies. Overall, this research has provided insights into the experiences and perspectives of hospital professionals, GPs, and patients on NHS hospital discharge letters. Recent UK research on this area, as highlighted in chapters two and five, is limited. The mixed methods approach has generated findings which are both broad and generalizable to an extent such as letter components important to GPs (see chapter six) and also in-depth viewpoints collected through interviews on current processes and how they may be improved (see chapters seven and eight).

Other contributions of this research are that this work has captured recent NHS discharge experiences, and exemplified some of the benefits of combining health sciences and applied linguistics techniques within communication research. To the best of my knowledge, this is the first study to apply CL methods to UK qualitative data on the topic of discharge communications.

A further contribution is that the research has generated a new programme theory for how patients receiving discharge letters may work; this is a new theory generated through the course of the research and the main theoretical contribution of this work. This theory has informed the implications for practice and future research stated later in this section. Overall, this research has considered differing perspectives of discharge communication in order to make recommendations for how current processes could be improved.

RQ1 In what form do patients currently receive written discharge communication, and why?

RQ1 asked about current forms of patients receiving written discharge communication (or not) and reasons. As described in previous chapters, copying letters to patients is currently considered to be good practice in the UK (59, 62, 63, 69, 194) and yet across all study population groups, participants reported inconsistency of this practice. In line with previous research findings (186, 554), GPs noted practice inconsistency and remained uncertain of the prevalence of patients receiving letters. Patients were able to recount times that they had and had not received letters and they speculated whether hospital policies and physician time impacted upon this. Additionally, patients reported surprise that the practice is not standardised and some suggested that the current system may be likened to a *"postcode lottery".* Study 3 in chapter eight found that within the study sample, similar to past studies (554), only 64% of patients reported to have previously seen or had a copy of their letter. This is markedly low when considered in the context of UK policy and guidelines (59, 62, 63, 69, 184, 185) which have been recommending this practice since 2000 (62, 69, 184, 185). Reasons for patients not receiving letters were expounded in study 4 in chapter nine to include: effect of hospital culture, perceived letter inappropriateness, and concerns regarding patient harm and understanding.

Further relating to RQ1, despite clinicians concerns about pernicious effects of patients receiving letters, patients tended to convey negative outcomes in instances where they had not rather than had received the letter. Patients articulated cases where not receiving information had caused harm in terms of anxiety, uncertainty and depression and a few patients explicitly stated that they felt more reassured by *knowing* (67, 188, 251, 489, 492, 500, 524, 531, 532, 535, 536, 550, 565, 572, 574) rather than not knowing. Thus, keeping patients informed through letter provision appears to have an association with increased (67, 554, 558, 574) rather than decreased wellbeing as some clinicians fear. Broadly, effects appeared more *negative* when patients had not received letters and more *positive* when they had. The evidence from this research suggests that practice inconsistency within the sample regions is having negative effects on patients' wellbeing and experiences, and possibly increasing GP contact and queries post-discharge as patients seek further information, copies of letters, and care plan clarification.

RQ2 What are the effects of patients receiving written discharge communication, and why?

RQ2 asked about the effects of patients receiving written discharge communication (or not). Outcomes which were delineated across studies where patients *had not* received letters were predominantly negative and included: letter inaccuracies, "missed" follow up actions and appointments, patient uninformed and patient confusion and anxiety. On the other hand, outcomes for cases where patients *had* received letters were predominantly positive and resonated with findings with previous literature (58, 62, 63, 149, 192, 393, 394, 488, 489, 492, 493, 497, 503, 506, 510, 516-518, 521, 522, 531, 542, 551, 554, 555, 562, 572, 575) to include: increased patient understanding and condition knowledge, heightened sense of patient inclusion, elevated patient autonomy and patient awareness of treatment plan, reduced anxiety and increased wellbeing, improved doctor-patient relationship, increased patient satisfaction and improved recall and adherence to actionable components as letter able to act as a reference/reminder. Although clinicians, both within this research and in previous studies (186, 394, 489, 493, 497, 502, 510, 517, 540, 546, 554, 574, 575), sometimes expressed concerns about the potential harm (e.g. confusion) and negative outcomes of patients receiving letters, patients tended to emphasize the benefits of this practice. Moreover, in several trio and quartet cases, the clinician raised probable issues with patient understanding of the letter and yet the patient reported to have understood the contents and found the letter useful. Clinician concerns about patient understanding may be a barrier to wider practice of patients receiving letters but the evidence here suggests this concern may be unfounded and so this barrier needs addressing. Findings suggested clinicians often underestimate patients' comprehension of letters perhaps partly because clinicians believe their medical training and skills are a prerequisite for understanding discharge letters. However, although patients may lack medical training, they demonstrate resourcefulness in order to understand letters such as looking up terms on the internet (e.g. *NHS* website), supplementing letters with patient information leaflets, and asking friends and family members who do have medical training. Not only may patient understanding be higher than clinicians perceive but findings relating to patients suggested that patient's full understanding of the letter may not be necessary in order to understand the main directives and find the letter useful; this contrasts with clinician concerns that any unfamiliar terms or phrasing may induce patient anxiety. This is a key finding of the project as literature revealed disparate rates of patient understanding and no evidence for paralleled viewpoints in relation to the same cases. Thus, this research evidences that clinicians may be underestimating patient comprehension of letters and that patients receiving direct copies of GP letters can be beneficial. However, this finding should be contextualised within the limitations of the study sample.

RQ3 Should patients receive or not receive discharge communication, why, and in what form?

RQ3 asked whether patients *should* receive discharge letters and if so why, and in what form. As covered in RQ2, the advantages of patients receiving letters are plentiful and so it follows that this practice should take place more consistently. Moreover, there was general consensus across study populations that patients should receive letters due to the associated benefits. Furthermore, most HPs felt patients should have a choice about this practice as did all participating patients. The patient's "right" (59, 62, 63) to the letter (497) was also noted across studies. The findings from this research aligned with previous reported figures, both from the viewpoints of patients (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574) and clinicians (96, 192, 497, 551, 552, 573, 575), of high preferences for patients receiving letters. Nevertheless, it should be stressed that the research findings determined letters should be provided in the context of adequate patient counselling, most likely verbal information, and that letters should not be used for the purpose of communicating new information to the patient (62, 63, 67, 493).

It must also be underscored that not all patients favoured receiving letters. A few patients felt letters would not be useful or helpful (531, 566), may "waste" *NHS* resources such as paper, and may be unnecessary (188, 393, 492, 495, 531, 551, 566) or repetitive if they related to the same ongoing medical condition. Some patients suggested electronic letters (e.g. email) may rectify resource waste ramifications. Clinicians also raised issues in regards to cases where patients do not want to know their diagnosis. Hence, as suggested in previous works (73, 188, 486, 492, 493, 495, 506, 527, 554) considerations of patient *choice* and the individual case (e.g. risk of harm) are paramount to producing positive outcomes. It is reassuring that the majority of clinicians felt patients should receive letters as this aligns with good practice (63) but nonetheless it is important to highlight that not all clinicians were in favour (196, 197, 497, 502, 510, 517, 521, 551, 552, 554, 555, 574, 575); as noted in RQ1, patients are currently receiving letters inconsistently within the sampled areas in the West Midlands and thus clinicians' attitudes may be a key barrier to wider adoption of the practice. In regard to the "what form" aspect of the RQ, despite clinician perceptions that patients may favour personalised communications, only 14% of patients wanted to receive a personalised letter and 4% wanted both letter types.

Clinician concern for producing a letter suitable for the needs of the patient and themselves were commonly raised both within this research and previous work (186, 497, 504, 509, 554, 575); clinicians feared adapting letters to make them "patient friendly" could involve removal of medical terminology and consequently undermine the informational needs of the GP for clinical record accuracy and continuity of care. Patients who had experienced personalised letters seem to rate the communication poorly and had apprehensions around the content of the clinician letters to which they were not privy. Additionally, reasons for clinician and patient favourability toward patient personalised letters tended to focus on elements which, although perhaps more inherent to personalised communications, could be arguably integrated into GP letters. These elements aligned with much of previous research and included: use of plain English (58, 198, 518, 526), avoidance of acronyms (60, 63, 67, 193, 492, 510, 518, 523, 526), lay explanations for jargon (67, 554), inclusion of patient actionable components (e.g. dietary advice), addition of a patient information summary, and insertion of clear interpretations of results (e.g. all blood results normal). Thus, not only do patients favour direct copies of what is sent to the GP but it seems possible that letters could be "patient-friendly" whilst at the same time meeting the needs of the GP and hence eradicating the need to produce two discharge summaries. This suggestion to send patients copies not only adheres to good practice but may save time and resources (63, 67, 155, 186, 393, 489, 517, 566) and fits with the broader *NHS* England policy movement toward shared-decision making, transparency, and patient-centred care (27, 29-34).

It is currently good practice to copy patients into letters between physicians (59, 62, 63, 69, 184, 185). Despite concerns within clinician groups, there was broad support across studies for patients to receive letters and yet narratives of inconsistencies with this practice pervaded data collected within sample region of the southern West Midlands counties. The study in chapter six found that 81.3% of the sample letters contained unexplained acronyms and 76.5% contained unexplained medical jargon and, consequently, letters in their current format and style may not be accessible to patients. This does not mean that patients should not be offered letters, as this would subvert good practice, but that letter language needs modification to increase likely usefulness and comprehensibility to patients. Examples of such modifications are: spelling out acronyms in full or avoiding abbreviations altogether, providing brief lay explanations for jargon (i.e. in brackets), including a patient information section, and utilising plan English (i.e. short simple sentences). Letters should also only be provided within the context of adequate patient counselling and only in instances where patients choose to receive them. “Blanket” copying of letters should be avoided; the individual case and harm implications should always be considered.

Although clinicians thought patients would prefer personalised letters which may be time-consuming to produce, participants in chapter eight tended to favour receiving a direct copy of what is sent to the GP; participants felt seeing this copy was reassuring and transparent. Hence, providing patients with discharge letters does not necessarily have to substantially increase workload as the majority of patients would be satisfied with a direct copy.

RQ4 What are the features and key content-items of “successful” discharge letters?

RQ4 asked about the features of “successful” discharge letters. Several content features were assessed as statistically significant to GP-assessed “successfulness” to include: reason for admission (clinical summary and history), diagnosis, investigations/procedures and results, medication information to include any changes and reasons why, pending hospital actions and any follow up, information provided to patient, and an appropriate and clear GP plan of action and management recommendations. Furthermore, GPs expressed preferences to know the treatment given in hospital and name and role of discharging physician. Additionally, GPs asserted that unexplained acronyms in letters should be avoided both for the sake of themselves and the patients. GPs also suggested insertion of a “patient information” section to the summary. Letters which were handwritten or contained handwritten annotations were rated poorly across groups due to illegibility. CL analysis of GP comments and patient interviews revealed it is not just feature presence or absence which determines a letter's usefulness but the clarity, relevance, and appropriateness of included information. An additional finding was that hospital professionals identified barriers to high quality letter provision in several cases where letter issues were raised. This highlights the importance of overcoming these barriers which included: restrictions of the template, physician experience and support with letter writing, clinician time, and low-staffed discharge timings (e.g. weekends).

It may be interpreted from the research data in chapter six that a "successful" or proficient discharge letter may not necessarily contain more text but is in part dependent on writer skills to select and communicate the relevant and crucial information in a clear and pithy manner. Overly long letters were often seen as "verbose" and clouding important points. Consequently, an increase in letter quality and successfulness does not necessarily need to be directly correlated with letter length and therefore an increase in time taken to produce letter. For this reason, training would potentially be a valuable intervention to teach junior doctors how to write efficiently and concisely, whilst still meeting the needs of those receiving letters.

Implications for practice and policy

Patients receiving letters, unless there is risk of harm, is currently considered to be good practice in the UK (59, 62, 63, 69, 184, 185). Despite this, findings from within the sampled region echoed previous research (186, 554) that patients are receiving letters inconsistently. This research evidences that as each hospital Trust is permitted to have its own discharge policy (655), the result is that depending on the geographic region, Trust, hospital, department, and discharging physician, patients may or may not be offered a copy of their discharge letter. However, it is important to contextualise this finding as this research was conducted within the southern West Midlands region of England only. Hence, the finding of patients receiving letters inconsistently may be an outlier rather than a national pattern. Policy evaluation and audits, which focus on uptake of policies (59, 62, 63, 69, 184) relating to sharing discharge letters with patients, on a wider scale would be useful to ascertain this.

In the context of UK guidelines (59, 62, 63, 69, 184), particularly the promotion of transparency of healthcare communications in line with current UK *NICE* guidelines (59), the proportion of participants in the sample who had previously seen or had a copy of their letter (32/50 or 64%) may seem quite low and perhaps illustrates one of the issues with lack of standardisation of this practice. Across groups in chapters 6-8, the current variation and inconsistency seen in regards to the intervention was not favoured. Considering that sending patients' letters has been recommended practice for almost 20 years (62) and uptake appears to remain inconsistent, this indicates a continuing need for standardising policy and hospital trust procedures as opposed to merely making recommendations. It seems moving forward that organisational policies and initiatives which standardise, mandate, audit, and monitor this practice would be more impactful than guidelines to facilitate increased uptake of this practice and hence improve patient discharge experience (73). Thus, this research supports policies (59, 62, 63, 69) that all patients should be offered copies of letters between physicians. Although national guidelines for discharge communication exist (59, 61, 63, 64, 66, 69, 184, 185), each hospital may have its own discharge policy; this results in what the study samples exemplified, that depending on the hospital, Trust, discharging physician, and reason for admission, patients may have different discharge experiences and receive different discharge communications. This needs to be addressed with more standardised practices which closely reflect the views and preferences of those involved. Furthermore, these issues have highlighted a need to look at the barriers and enablers to implementing policy around patients receiving letters in order to galvanise uptake as patients continue to receive letters inconsistently and problems remain.

Within study three (chapter eight), contexts where patients received written communications tended to be evaluated more positively and have increased positive impacts and outcomes compared with those who did not. The study participants for chapter eight, in line with previous patient studies (188, 191, 393, 488, 489, 493, 500, 508, 510, 520, 527, 574), showed high rates of patient preference for receiving letters. However, it is important to consider that these views were not unanimous or representative of the wider *NHS* population and so systems need to be grounded by patient *choice.* Comparably, within study two, part B (chapter seven), GPs raised issues in regards to contexts where patients may not want to receive letters or where receipt may cause harm and so patient *choice* and considerations of the individual context are paramount. Thus, systems are needed which account for individual preferences and views grounded by patient *choice*; patients should not be "blanket" copied into all communications but equally patients should not be excluded from communications without their knowledge, unless there is a risk of harm or confidentiality breach (63).

Findings from chapter eight (patient study three) indicated moderate patient preference towards "opt out" as opposed to "opt in" style systems as it was perceived those who do not want letters is the minority and hence this system style may be a reduced and more simplistic workload for all those involved. However, participant concerns were expressed where *choice* is only available at the time of discharge where the patient may have reduced capacity (e.g. recovering from anaesthesia, high pain levels…). Consequently, participants felt that they should not be burdened with requesting letters for each care episode. Hence, systems of preferences for letter receipt should take this into account. A solution would be for preferences to be logged and integrated as part of the patient record, perhaps through the patient's GP practice. During dissemination work with local GPs, it was suggested it would be more appropriate for preferences to be logged via the hospital system as it primarily applies to hospital practices and, depending on the locality, not all information on primary care records are available to secondary care sites. Additionally, during the research, participants suggested that logging their preferences in this way could reduce errors, allow auditing, and ensure that their preferences are readily available to discharging physicians. Such a system would allow patients to change their mind for particular discharge events (e.g. bad news) whilst still ensuring consistent practices and allowing for monitoring. This system suggestion may be likened to the recently developed "Sharing Letters with Patients Policy" (2019) by *the Newcastle upon Tyne Hospitals NHS Foundation Trust* (67). This policy (67) outlines how the Trust is committed to sharing information with patients and complying with the *Department of Health* "Copying letters to patients: good practice guidelines" (63). Within the Newcastle Trust policy document (67), the process for sharing letters is outlined; this covers how patients will be asked about their preferences for letter receipt at the beginning of each clinical episode (inpatient or outpatient) and that their consent for receiving letters will be documented in their health record. The policy (67) also outlines how patients can change their mind or opt out of receiving letters at any time. Future policy and commissioning work needs to look at lessons learned from this Newcastle Trust policy document (67), particularly in relation to the policy impact on uptake of sharing letters with patients, cost implications, and feedback on the policy from hospital professionals and patients. Based on this, it may be ascertained whether the policy in its current form should be scaled up nationally or whether modifications or a different approach is required. Future Policy work should continue to develop and focus on implementing and evaluating feasible interventions for how patients' preferences for letter receipt could be logged in patient records in order to increase consistency of patients receiving letters whilst still acknowledging patient choice.

Generally, GPs felt that it is possible for letters to be "patient friendly" whilst at the same time meeting the needs of General Practice, and that there is no need for two separate summaries. This aligned with patient preferences; the majority of patient sample participants expressed that they would prefer to receive a direct copy of the letter sent to the GP as opposed to a separate patient personalised letter. Sending patients direct copies not only adheres to good practice but may save time and resources (63, 67, 186, 489) and fits with the broader policy goals of shared-decision making, transparency, and patient-centred care (27, 34). Thus, those producing letters should focus on ways to make the letter more accessible to patients whilst still communicating the necessary information for GPs. Possible adaptions suggested by GPs (chapter seven) and patients (chapter eight) to make letters more useful to the patient included: inserting a patient information section into the letter which covers actions required, follow up plans, management recommendations, and a care plan; inputting relevant contact information, the name of the discharging physician, and PALS information; writing succinctly in simple Plain English; explaining jargon necessary to communicate technical information to the GP in lay terms; and interpreting diagnoses and test or procedure results into simple "patient friendly" terms (e.g. all blood tests normal). These modifications align with current guidelines and policies of discharge communication (59, 61, 63, 69) including the good practice guidelines for copying letters to patients (63) and the more recent *"please write to me"* initiative by AoMRC (69). In this way, the letter could still meet the receiving clinician technical medical requirements whilst ensuring the information is more accessible to the patient e.g. NSTEMI (heart attack).

Results and analyses for chapters seven and eight revealed that acronyms should be avoided within discharge letters, for comprehensibility both to the patient and GP. Medical jargon or acronyms should be ideally followed by a brief lay explanation; these findings resonate with several studies and guidance documents (60, 63, 67, 510, 526). Distinctly, there is perhaps a place for acronyms within specialities particularly for shorthand discourse between colleagues and arguably use of such "in" language may create a sense of comradery and solidarity (656, 657) for medical teams who are otherwise working within challenging and stressful situations. However, the data here may be interpreted to indicate that there is perhaps no place for such acronyms outside of the speciality, or in written communication between teams where there is scope for misinterpretation, particularly, in care transition letters such as discharge letters. Acronyms can lead to miscommunications; the data in chapter seven indicated these can be time-consuming to remedy. Furthermore, miscommunications may have knock-on impacts for the hospital staff in cases where GPs must contact the hospital to clarify acronym meanings. Hence, the evidence from this research suggests it would be prudent moving forward for acronyms to be avoided. Although avoidance of unexplained acronyms is mentioned in policies (63, 69) surrounding patients receiving letters, it could not be found in guidance surrounding discharge letter content such as *"The PRSB Standards for the Structure and Content of Health and Care Records"* (64). Hence, avoidance of acronyms should be integrated into standards and templates for discharge letters to increase adherence.

Findings from this research suggest current letter headings and templates (58, 59, 61, 64) do not include or necessitate all the letter features and content items thought to be important to GPs and patients (e.g. reasons for medication changes). Hence, as the findings in this research suggest content quality issues with discharge letters are persisting, there is a need to look at addressing barriers and updating policies regarding letter content in line with the informational needs of those who primarily receive them, that is, GPs and patients. Moreover, as noted within chapter six (section 6.4), a recent policy or guideline document could not be found which synthesised discharge content components across letters' types such as outpatient discharge letter, inpatient discharge summary etc. Therefore, it may be prudent if such a document was devised to consolidate universally important discharge letter components in one place; this would provide rapid ease of reference for practitioners producing all kinds of discharge letters and could possibly increase guideline uptake due to the increased simplicity of a synthesised document where all key information is in one place. Suggestions for increasing guideline uptake such as this are apt considering the findings across studies that guideline uptake is currently somewhat mixed exhibiting low uptake in regard to certain salient letter features such as medication changes and reasons, information and advice given to patient, and GP plan and actions (see chapter six).

The findings of study 2 (chapters 6-7) found that GP letter evaluations tended to align with standards (59, 61, 63, 569); "successful" letters followed the format and content requirements of guidelines and standards whereas "unsuccessful" letters did not. Thus, the existence of "unsuccessful" letters is perhaps not due to oversights or omissions within the guidelines themselves, but uptake and implementation of these into practice by hospital professionals producing written discharge communications. One suggestion by GPs to rectify this issue was to not allow essential or important discharge items to be left "blank" within letters but instead require text input; if it is that no action is required, this should be explicit for clarity. Interpretation of the data for chapter seven indicated a "successful" letter may not necessarily take longer to write or require an immense amount of text but is in part dependent on writer skills of selecting and communicating relevant and clear discharge information. Overly long letters were often viewed by GPs as "verbose" and clouding important points. Consequently, an increase in letter successfulness does not need to be directly correlated with letter length.

GPs in chapter seven also suggested letter production by juniors is perhaps a contributing factor towards low-quality letters. Trusts should ensure that GPs and hospital professionals, as well as patients, are involved in the design and content of discharge templates and that medical staff receive training that covers how to write efficiently and concisely. Training for juniors and medical students on letter writing and writing discharge summaries is currently limited (128, 165, 237) despite the evidence on problems surrounding lack of training on care handover (83). Courses and materials that are available tend to manifest as optional or non-compulsory E-modules; this diminishes the value of written communications, the outcome of which is that clinicians may place lower priority on written communications than they could or should do. Literature in this area is also somewhat sparse and few relevant papers were found (532, 533). Given the financial climate of the *NHS* and increasing demands, consultants or senior clinicians writing letters may not be feasible. Therefore, it is perhaps logical for juniors to continue to write such letters, but with increased support and training on how to do so accurately and successfully; this has the potential to save clinician time, reduce clinical risk, and improve clinician and patient experiences.

Overall, patients have a right to receive their letters (62) and, as this may be continuing to happen inconsistently, there is a need to ameliorate and update systems. Additionally, and in the meantime, there is perhaps a need for increased public awareness surrounding patients' rights to request copies of their discharge letters so that those who favour letters are not needlessly excluded.

Suggestions for future research

This work has identified several areas for foci of future research. As highlighted in the realist review and resultant programme theory, evidence relating to the cost to the NHS of sending patients letters is currently thin. As a result, it may be suggested that further research should focus on outlining the true cost benefits (or not) of patients receiving discharge letters through robust economic analyses rather than broad theoretical estimates. Future research should also ascertain whether NHS patients receiving personalised discharge letters works (or not) and should weigh any benefits of such letters against the costs and drawbacks. Additionally, further research should explore contexts in which patient understanding may be or is limited as well as discharge communication perspectives from often under-represented marginalised groups. Moreover, further discharge communication research should consider looking at groups excluded from this research, such as children and youth (those under 18 years of age). Evidence on paediatric/child discharge communication tends to focus on parent/carer comprehension rather than that of the child/youth (see recent 2019 review by Curran *et al.* (204) which looks at paediatric discharge communication). Arguably, a child or youth's knowledge of their illness and care episode may be an influencing factor for design and impact of written discharge interventions and this should be considered in research in this area going forward.

Discussion of main findings

As covered in sections 10.3 and 10.4, trio and quartet cases were somewhat representative of the larger study sample from chapter six although neither are generalizable to the UK *NHS* patient population. A larger sample which specifically targeted marginalised groups was not feasible within study scope. The views of marginalised groups such as ethnic minorities are under-represented in this research as are perspectives relating to outpatient experiences. Nevertheless, although findings may not be wholly generalizable, trio and quartet analysis has provided useful insights into previously reported discrepancies surrounding discharge communication.

Overall, quartets provided insights into possible explanations for literature discrepancies (194, 554). Despite previous studies reporting both benefits (188, 191, 192, 207, 521) and drawbacks (189, 196, 394, 493, 639) of patients receiving letters, this research supports that outcomes of this practice are nearly always beneficial. Negative outcomes were generally based on clinician perception and theories, rather than empirical evidence, and thus this perhaps rationalised the contrasting outcomes reported in previous literature. The studies have provided an overview of clinician viewpoints on patients receiving letters. Remedying previously reported discrepancies on clinician attitudes (96, 182, 192, 497, 500, 504, 510, 517, 521, 531, 551, 555, 573-575), it was expounded that the majority of clinicians favoured this practice although some concerns were voiced. Conflation of past studies resulted in variable rates of patient letter understanding (67, 84, 188, 191, 197, 198, 205, 393, 394, 489, 493, 497, 500, 509, 510, 512, 517, 531, 536, 538, 546, 551, 554, 555, 559, 566) with marked clinician concern for patient understanding (196, 197, 205, 497, 509, 510, 517, 551, 554, 555, 574, 575); the evidence from this research not only suggests that patient understanding may be higher than clinicians' perceive (73, 489, 546, 551) but also that patients can be resourceful (551, 554) in seeking meanings of unknown terms (e.g. internet search) and so presence of terminology alone is not reason enough to exclude patients from communications. Some previous research indicates patients may or may not find letters useful (63, 188, 489, 492, 500, 503, 517, 566) and that letter receipt may cause "harm" or negative outcomes (186, 394, 489, 493, 517, 531, 534, 546, 553, 554). However, findings from this study suggested that the majority of patients do find letters useful and that the absence of information, rather than the presence of information and letter receipt, may be associated with negative outcomes. Moreover, the research findings indicated that the practice of patients receiving letters may be associated with increased rather than decreased wellbeing.

The *NHS* plan released in the year 2000 (62) had a strong focus on sharing information with patients and specified patients receiving copies of letters between physicians was a "right". Notably, the new *NHS* 10 year plan released in January 2019 (658) makes no reference to patient copies of letters. Perhaps this omission is because this issue has been overtaken by other more pressing policies. Alternatively, it may be inferred that the *NHS* believes this issue has already been tackled due to publication in earlier plans and policies (59, 62, 63, 69, 194). However, this research highlights inconsistencies of this practice within the sampled regions, which may or may not be indicative of national practice, and thus possible remaining issues in this area of patient information. Hence, the exclusion of patients receiving letters from the 10-year plan may perhaps be described as myopic and future policies and directives need to prioritise the issues raised as patient information can impact upon patient experience and outcomes. References to "discharge" in the new 10 year plan (658) focus on timeliness of patient discharge and discharge planning (659); no references to letters were found. This research also highlights modifications (e.g. use of plain English) which need to be integrated into letters if patients are to continue to receive letter copies; many of these modifications align with the *"please write to me"* initiative by *AoMRC* (69). Thus, it seems that policies do adequately cover problem areas in discharge communication but there are issues of policy and guideline uptake and implementation. Findings across studies suggested that if all policies and guidelines (59, 62, 63, 69, 184, 185, 194) regarding patients receiving letters were consistently adhered to, few issues would remain. Hence, work is needed to increase the uptake of policies and guidelines and overcome implementation barriers. Government initiatives should work to address this through directives which standardise rather than recommend this practice.

This research has built upon and synthesised previous evidence in order to generate specific recommendations for improving practice and a programme theory for how this may be achieved; this theory includes 7 new CMOCs which did not emerge from synthesis of previous literature (see chapter five).

In summary, this research poses several main contributions to knowledge to include: a theoretical contribution to knowledge through development of a new theory for how patients receiving letters "works", generation of implications for practice, a methodological contribution through analysing written discharge communication events through “quartets”, and showcasing the value of CL methods for analysing data relating to the field healthcare.

10.9 Chapter summary

This chapter has consolidated findings and interpretations from the secondary data (study 1, chapter five) and primary data (studies 2-4, chapters 6-9). Trios and quartets have been synthesised. Reflections on data differentials have been made in order to work towards explanation and reconciliation of discrepancies previously reported in literature. The data has yielded insights into ways in which best practices of written discharge communications can be improved from differing viewpoints in order to enhance patient experience and outcomes; practicable recommendations for improvements have been made in terms of patients receiving letters (RQ1-3) and letter content (RQ4). The next chapter (eleven) contains the thesis reflections followed by overall thesis conclusions in chapter twelve.

11. PhD reflections

The quartet method was advantageous in providing direct comparisons of experiences and viewpoints in order to reconcile previously reported discrepancies in literature and elucidate agreements and disagreements between different population groups in regards to discharge communication. For these reasons, and knowing what I know now, I would undertake the research again if the clock was turned back. However, the method was also extremely time-consuming and took 12 months to complete. The purpose of the sequential nature of studies to build quartets was so that recruitment for later studies could be targeted toward those of interest for quartet-building. Nevertheless, were I to undertake the project again, I would allow more overlap between the studies in order to boost recruitment. For example, several GPs who indicated interest in taking part in interviews did not do so in practice; one of the perceived reasons for this was due to the time lapse between their expressions of interest and when the interviews were run. I think, had interviews been conducted within 2 weeks of expressions of interest, recruitment numbers would have been boosted across phases, particularly as this would have reduced the time delay between date of discharge/letter production and participation for all groups. Low HP recruitment was the main reason for not meeting quartet number targets. If I were to repeat the study, in order to attain the target number of quartets I would account for a lower response rate for the HP study as was undertaken with the patient study. Had the estimated response rate for HPs been between 10-15% as opposed to 50%, it is likely that the target number of quartets would have been achieved. Hospital Trust engagement could also have been further increased by appointment of a research champion within each trust to drive recruitment. Overall, I would recommend the quartet method for future studies directed toward written communication but I would advise collecting data fully concurrently rather than partially sequentially as the drawbacks of the sequential design appeared to outweigh the benefits.

Consent to share evaluations across groups was not part of the study design, although, on reflection, perhaps it should have been. An unanticipated outcome of study 4 (chapter nine) was that a few HPs contacted to request feedback on their letter writing. GP participants had to be individually contacted to obtain consent to release anonymised letter comments to HPs. GPs were informed that despite anonymising comments, HPs could possibly look up the original letter on the hospital system in order to obtain the GP details. Letter comments and feedback were only shared if the GP agreed to this. Had such feedback been a part of the study design and integral to HP participation, this may have acted as an incentive for more HPs to take part. If I were to conduct the study again, I would change this part of the protocol so that feedback was routine. This would have been in keeping with the study values of transparency and promotion of improvement of written discharge communications.

The ethical approval process has a strong focus on participant risks and wellbeing but puts less emphasis on that of the researcher. I did plan for negative impacts on wellbeing during data collection but did not predict or plan for physical impacts. It was known prior to study design that I had long-term cardiovascular issues. However, as it had been a while since a relapse, issues were not anticipated. Unfortunately, this turned out to be an oversight and the demanding nature of travelling and data collection (long days, late lunches…) accumulated to have a negative impact on my health. Given that this was a PhD study, it was important for myself to carry out data collection and recruitment tasks. I am very aware of the stigmatisation that surrounds disability and long-term health issues and it was very important to myself not to reduce the research targets as a result. However, it was also important that my health be prioritised in order to prevent further deterioration. After reflection, I came up with a series of adaptions to resolve this conundrum and complete data collection whilst addressing my needs and not inconveniencing participants. These adaptions involved: use of a wheelchair, transport to sites where possible, allowing time to snack and drink between interviews, and using the examination table to prop up legs to promote circulation and prevent blood-pooling in ankles. The latter adaption involved the patient sitting in a chair next to the examination table. A concern of mine was that participants may feel uneasy by the atypical set up of these interactions even though the study protocol itself remained unchanged. However, in practice, participants generally responded very warmly and appeared un-phased. The alternate room layout acted as an ice-breaker for interactions and often reduced the interview formality. The adaptions seemed to remind participants that poor health can affect everyone and also acted as an opportunity for me to explain my personal interest in the research. The disabled role of the researcher seemed to have a positive impact on the interviewee and it may have been that the study adjustments potentially increased patient disclosure and created a more open space for patients to talk. Moving forward, I would place greater emphasis on the needs of researchers during study design and ethical approval applications.

This work has provided me insights into healthcare research such as the challenges of the NHS ethics process and the need to be both pre-emptive and reactive to issues that arise during data collection. Notably, death and mortality were unanticipated themes throughout data collection. Many of the discussions about dying, mortality, and end of life took place off-record, typically after interviews had finished. It may be inferred that patients did not necessarily want these ruminations to be part of the data itself but that the interview setting provided a confidential open space for patients to freely discuss these sometimes perceived to be “taboo” topics. Although the protocol and research ethics application did not anticipate that the interview questions would cause distress to patients, some patients did become upset during these end of interview discussions and reflections. This perhaps highlights the everyday need of people to talk about death and peoples’ experiences of dying, both their own and others. I felt that this data collection experience highlighted that researchers working within the healthcare field, no matter what the research topic, should always strive to create open safe spaces for patients to talk honestly but be prepared and receptive, as a consequence of this, to listen to experiences and thoughts relating to mortality and death.

The CRN were of invaluable help both for increasing study recruitment and for providing support throughout the research. The CRN nurses were able to support participants and participating sites and help answer queries both from the patients and myself. I would highly recommend any research project to apply to be a CRN portfolio study.

12. Conclusion

Discharge communication is important for transferring information from hospital clinicians to GPs. Given the ageing population and increased need for patients to be cared for in the community, the salience of good quality discharge communications is heightening.

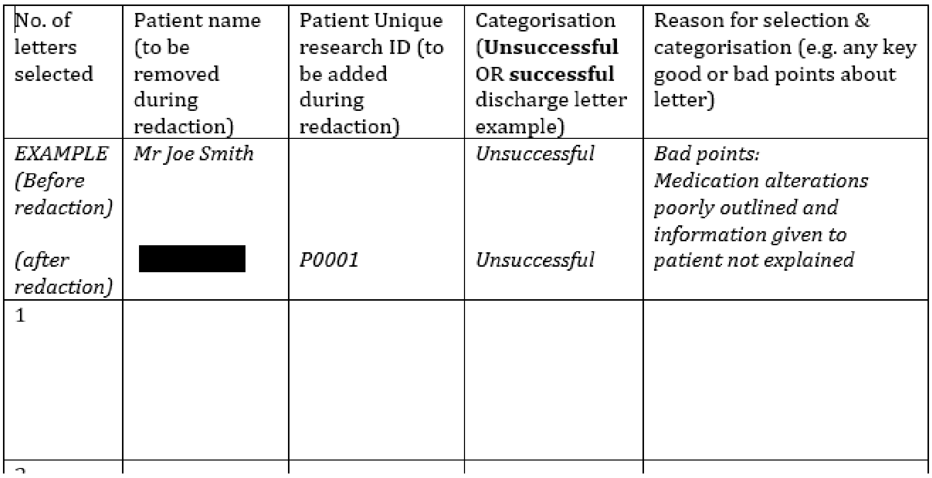
This research has centred on written discharge communication with specific foci on patients receiving letters and the content of letters. The work has contributed toward the research knowledge base through synthesising previous literature and exploring experiences of hospital clinicians, GPs, and patients alongside corresponding discharge letters. Analysis has drawn on techniques from the fields of health sciences and applied linguistics. This has allowed findings to be both quantifiable and generalizable to an extent whilst still providing in depth experience accounts. The research has identified problems in this area as well as reiterating previously identified problems and where and how these remain. Additionally, suggestions for improving written discharge communications have been made. These suggestions are grounded in realist theory and as such involved elucidation of important contexts for triggering mechanisms that are associated with positive outcomes. The research has produced a resultant programme theory for how the complex intervention of patients receiving letters may be theorised to *work*.

This research has produced several key findings. Participants across groups were generally in support of patients receiving discharge letters, although some expressed reservations. An important key finding of this work was that "patient choice" emerged as an important influencer or "context" for the intervention of "patients receiving letters" to work. Other key findings were that: patient understanding is perhaps greater than clinicians perceive, clinician attitudes may be acting as a barrier to policy uptake of patients receiving letters, and that the absence rather than the presence of information was more closely linked with negative outcomes. Broadly, negative outcomes more commonly manifested in contexts where patients *had not* received letters, rather than when they *had*. This research has also highlighted content features of discharge letters which are important to GPs and patients; items often harmonised and, given that many patients favoured receiving a direct copy of the GP letter, this research argues that it would perhaps be feasible and practicable to produce a single discharge letter which meets the needs of both groups concurrently.

In conclusion, this thesis suggests several ways in which processes and content of written discharge communications could be modified to support and improve practice as well as clinician and patient experiences.

List of Appendices

A Template for Letter Selection for GPs



No. of letters selected	Patient name (to be removed during redaction)	Patient Unique research ID (to be added during redaction)	Categorisation (**Unsuccessful** OR **successful** discharge letter example)	Reason for selection & categorisation (e.g. any key good or bad points about letter)
EXAMPLE (Before redaction)	*Mr Joe Smith*		*Unsuccessful*	*Bad points:* *Medication alterations poorly outlined and information given to patient not explained*
(after redaction)	[redacted]	*P0001*	*Unsuccessful*	
1				

B GP Focus Group/Interview Schedule and possible prompts

GP INTERVIEW AND/OR FOCUS GROUP SCHEDULE Version 1

I: Interviewer (member of the research team)

*Action points

I: Hello my name is X. I am a researcher from Warwick Medical School and we are working on a project on improving written discharge communication between hospital clinicians, GPs and patients. Please take this time to re-read and familiarise yourself with the materials you received in advance to include the consent form and participant information sheet.

Does anyone/you have any questions?

run through forms details and answer queries as required

If you are happy to proceed with the interview/focus group, would you please sign the consent form now and we will begin. This is your own choice and you may leave without taking part now or at any time during this process.

form signing

This interview or focus group will be “narrative-style” or “unstructured”. This means the researcher will have one introductory question to ask you and they are happy to talk to you about anything else relevant and have an open relaxed discussion.

So, to begin, please tell me about your experience(s) of patients receiving written discharge communication?

The rest of interview or focus group will continue in a conversational manner discussing GPs views and experiences on patients receiving written discharge communication and how the discharge communication process can be improved.

Possible interviewer prompts:

- What are your experiences of discharge communication as a GP?
- How do you think discharge communication can be improved?
- Please tell me your views on the discharge letters you selected for the sample?
- How would you suggest to improve these letters?
- In your opinions, is this letter suitable for a/the patient?
- What are your views on patients receiving letters?
- What do you think are important content items for good quality discharge letters?
- In your view what are the effects and outcomes of poor-quality discharge letters?

C Patient Interview Schedule

Patient interview schedule

I: Interviewer (member of the research team) *Action points Q= Question

I: ***Q1: Please tell me about your experiences of receiving any form of written discharge communication? This can be either a direct copy of the letter sent to your GP or a discharge letter specifically addressed to yourself.***

Q2: When you were discharged from hospital on DATE, what information were your given?

****if patient able to be shown letter copy as per protocol, show patient their letter****

Q3: How did you feel about the information you were given?

Q4: What written information would you like to be given or sent when being discharged from hospital and why?

Q5: Would you prefer to receive a direct copy of the letter sent to your GP or a separate letter specifically addressed to yourself?

Q6: Would you like to always be given this letter or would you prefer to choose each time you are discharged?

Q7: How do you think the process of patients receiving written discharge communication can be improved?

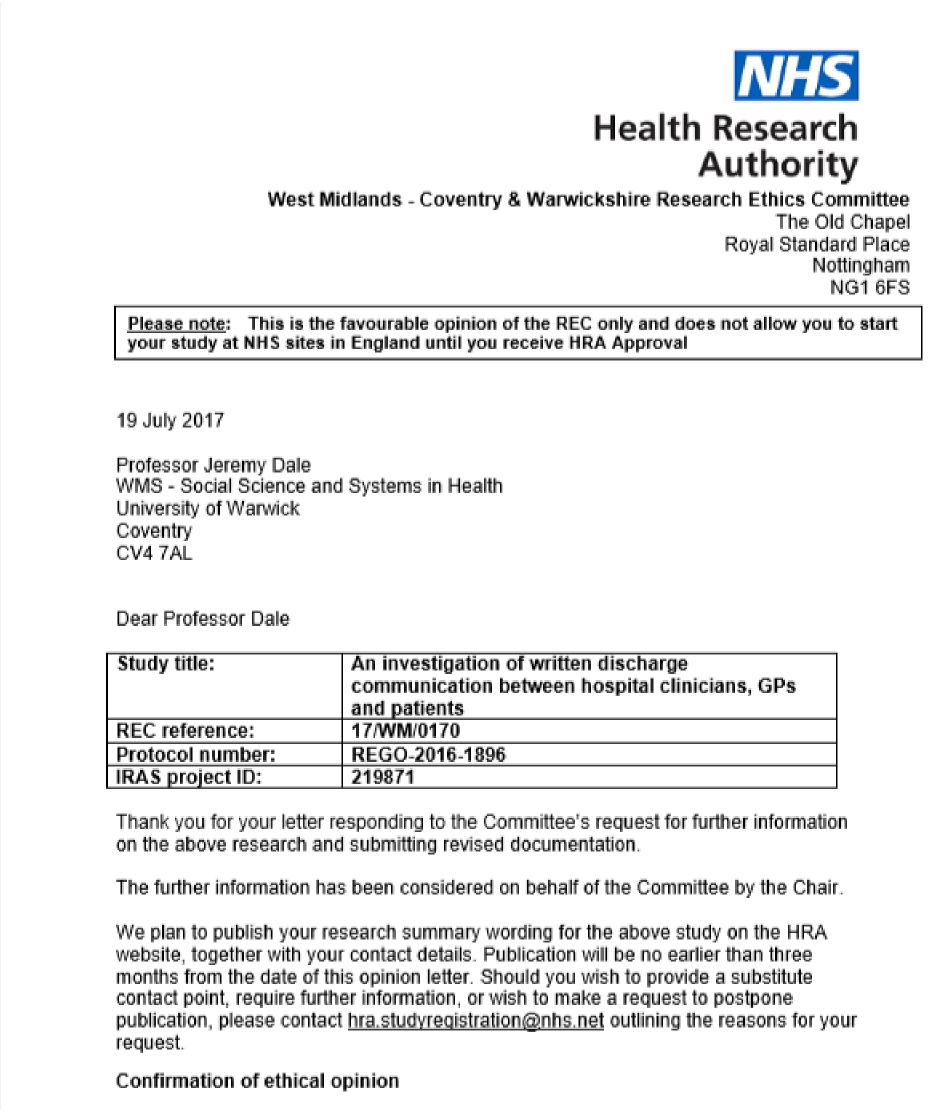
Q8: Is there anything else you would like to talk to me about today related to written discharge communication?

Discussion may continue in a relaxed conversational manner and researcher may ask additional questions related to anything else relevant mentioned by the patient.

D Table of word counts for all thesis corpora

	Word counts for thesis corpora										
Corpora	**Chapter 6 corpus** **GP letter comments**		**Chapter 7 corpus** **GP interviews/focus groups**	**Chapter 8 corpus** **Patient interviews**							
Sub-corpora	Successful	Unsuccessful	NONE	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
word count(s)	2,093	2,711	53,643	18,468	14,126	19,746	19,464	9,748	12,909	19,250	21,926
Total word count	4,804		53,643	135, 637							

E Favourable opinion (ethical approval)



NHS
Health Research
Authority

West Midlands - Coventry & Warwickshire Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

19 July 2017

Professor Jeremy Dale
WMS - Social Science and Systems in Health
University of Warwick
Coventry
CV4 7AL

Dear Professor Dale

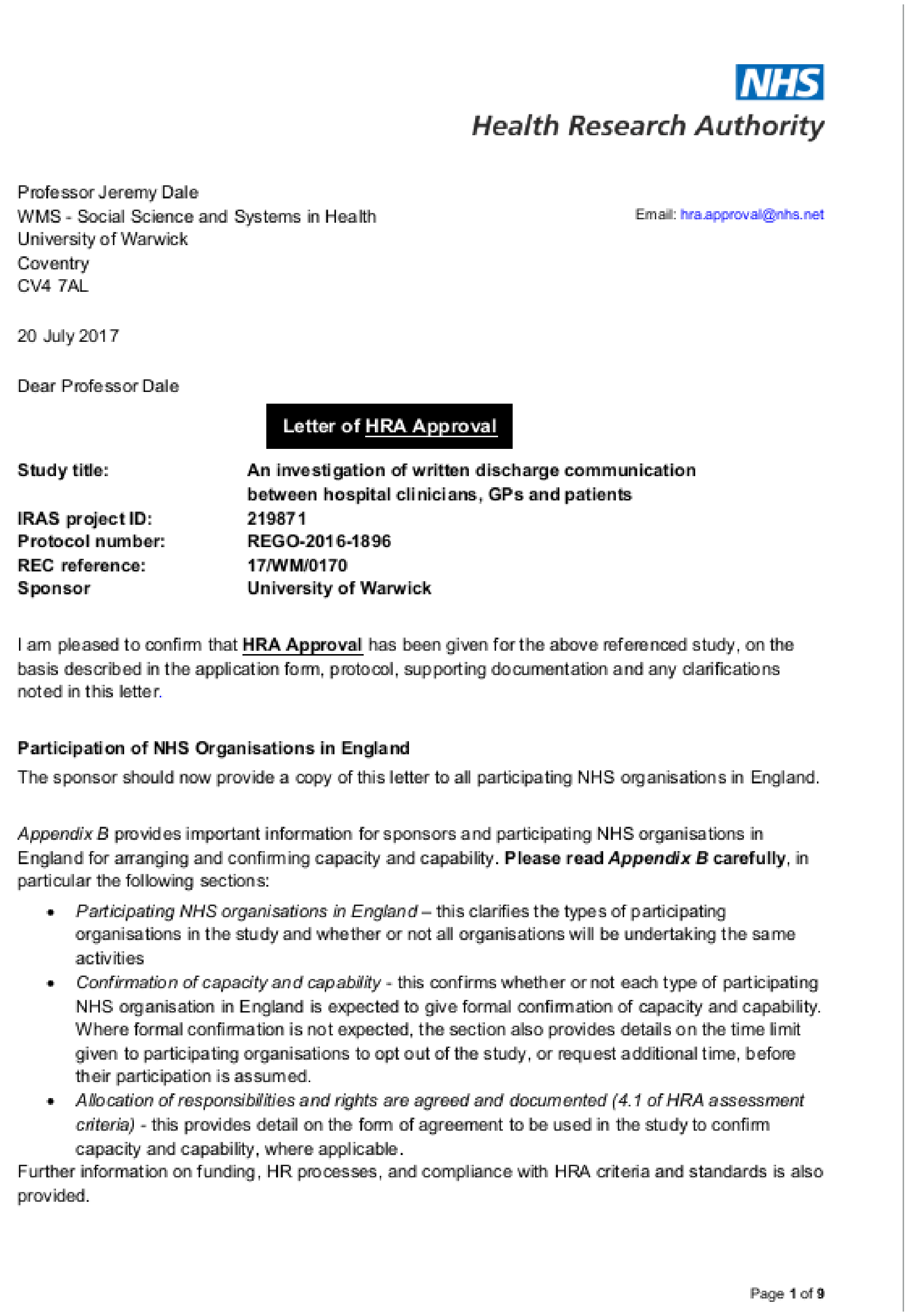
Study title:	**An investigation of written discharge communication between hospital clinicians, GPs and patients**
REC reference:	**17/WM/0170**
Protocol number:	**REGO-2016-1896**
IRAS project ID:	**219871**

Thank you for your letter responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact hra.studyregistration@nhs.net outlining the reasons for your request.

Confirmation of ethical opinion



NHS
Health Research Authority

Professor Jeremy Dale
WMS - Social Science and Systems in Health
University of Warwick
Coventry
CV4 7AL

Email: hra.approval@nhs.net

20 July 2017

Dear Professor Dale

Letter of HRA Approval

Study title:	**An investigation of written discharge communication between hospital clinicians, GPs and patients**
IRAS project ID:	**219871**
Protocol number:	**REGO-2016-1896**
REC reference:	**17/WM/0170**
Sponsor	**University of Warwick**

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

F Ethical issues

Identified Risk/ethical issue	Comment/details/response to reduce risk
Financial risk of participating and inequity of access	As a project focussed on communication, patient autonomy was important and so the patient will decide details such as time duration, location and whether they would like an advocate friend/family member present for support. Allowing patients to select the venue and location will reduce the risk of financial burden and reduce the need for patients to travel a long way which should support patients with difficulty travelling or mobility issues. Patient participants will be given a generic high street £20 thank you voucher for participating. These was discussed during PPI activity and thought to be a suitable sum. The figure of £20 is also based on the Warwick University PPI service UNTRAP* guidelines. Funding money will be available on request to reimburse any costs incurred associated with participating e.g. travel. GP practices will be compensated for their time and participation in accordance with CRN guidelines. Within the time and resource limitations of the project it is only possible to conduct interviews, focus groups and devise surveys in English. This raises potential inequity in access to the study. However, due to the small sample size and locality of the study, it is anticipated most participants will speak English.
Participant upset or distress	Patients will be allowed as much time as they wish to discuss their problems and can ask questions at any time. If patients wish to report or discuss their problems with the practice, they will be referred to the correct complaint and administrative services. Where necessary, it may be suggested to the patient to discuss their concerns with their doctor. If the discharge letter is reviewed for the first time between researcher and patient [according to protocol where this is possible] the patient may become confused or upset by the discharge letter content. Although the patient should be aware of their discharge care plan and information, the letter may contain information they have not heard/seen before or forgot. In such instances, the patient will be encouraged to see their GP to answer any questions and these interviews will be encouraged to take place at the GP practice. The GPs will be aware of which patients may view their letter and available for contact/support. No medical advice was provided at interviews. Queries will be referred to the relevant team. Participants can pause, stop or reschedule activities and may withdraw at any time without reason. Breaks may be taken at any point and timing of interviews will be flexible to accommodate patient needs and potential upset.
Patients do not individually consent to have their letter anonymously included in the sample. Patients	As discharge letters are being selected by GPs without direct patient consent, "opt out" posters will be displayed at participating GP practices so that patients wishing not to be involved in the study at all, even anonymously, do not have to be if they do not wish to. Information concerning "opting out" is also provided on the study invitation pack which will be sent to all patients whose letters are included in the anonymous 700 discharge letter sample. The patient's GP practice will redact the discharge letter sample before transferral to Katie Weetman.

Identified Risk/ethical issue	**Comment/details/response to reduce risk**
should always have a choice to take part.	
Intruding on participant time	This will be minimised by using a very short survey template and adapting the focus groups and interviews to the time/location and any other needs of the participants.
Safety risk to researcher during home visits	The researcher will use a "buddy system"; KW will report all travel plans and timings to a member of the supervisory team by text message upon departure and return. If the researcher does not complete data collection on time, the supervisory team will be aware and be able to follow up and escalate as necessary. The *NHS* lone worker policy has been consulted to increase researcher safety during this process and identify potential risks.
Data storage	KW will handle data in line with *NHS* and Warwick University procedures. Data will be labelled with study ID codes to protect participant identities. The consent forms will be the only documents outside GP practices containing ID and other identifiable information and these will be stored separately to all other data. Any electronic files will be stored on a password protected Warwick Medical School device or computer. Hard copies of data will be stored in a data locker or locked cabinet at Warwick Medical School.
Confidentiality	All data will be treated as confidential within the research team (KW and supervisors). Any outputs will be anonymised. As detailed in the information sheets, quotes from participants may be used in outputs. Confidentiality will only be breached in the unlikely event that a participant reveals a safety or legal issue which may result in harm.
Obtaining informed consent	Verbal and written consent will be received from all participants taking part in focus groups or interview and witnessed by researcher KW. Survey participants have a choice whether or not to complete the survey and it will be made clear that completing and returning the survey means they consent to the research. Participants will be reminded during data collection that consent is voluntary and they may withdraw. Participants have the right to withdraw at any stage or decline without having to give a reason. The researcher will go through relevant phase information and ensure the participant understands what is required of them prior to commencing any and all focus groups and interviews. Any participant who indicates they lack capacity to consent will be excluded or anyone who does not demonstrate informed participation. GPs will be responsible for screening potential patient participants and therefore only selecting participants with capacity to consent. This excludes patients such as those with dementia, mental health needs and children. GPs may exclude any other patients for whom they feel participation may be particularly distressing or inappropriate e.g. end of life care. GPs should also exclude patients who have expressed a general wish not to participate in research.

G Corpus outputs and concordance lines (section 7.4)

Sample of 10 random concordance lines for lemma "[APPOINTMENT]"

discharge letter and they will make an	**appointment**	with the GP to go through the discharge
and say this says I should get an	**appointment**	and I haven't so that is quite useful from
And it does say outpatient (.)	**appointment**	in two weeks please to the discharge
they are expecting two follow up	**appointments**	one in the respiratory clinic and one in
then feel that they have to book an	**appointment**	with the GP to clarify things so we don't
receive a letter for the outpatient	**appointment**	that was sent to the GP it just said please
might have said suggested to book	**appointment**	with GP to understand cause of fall or you
scan and therefore cancelled their	**appointment**	that was already pending you know they
by the hospital to go and make an	**appointment**	with your GP so I don't know whether they
is expected to proactively make their	**appointment**	after an invitation letter (.) for example if
understand enough English to get the	**appointment**	they will probably be fine (.) face to face

Sample of 10 random concordance lines for lemma "[RESULT]"

this ideal I would want blood test	**results**	and a full ultrasound scan report on there
scans that have been done and test	**results**	and especially if they are asking us to
system and look at all of the blood	**results**	and hospital reports on the system but
was happening about his blood	**results**	Yeah (.) Lets have a look (.) uh (.) um so
I contact the hospital and get the	**results**	sent over the system (.) so there was
because she has several blood test	**results**	so I can click on creatinine if I want to see
with a whole load of investigation	**results**	So the HbA1c would always be on there (.)
does it [LOCATION] those blood	**results**	there are not on our system which is a
rely on that we can see all of their	**results**	Yeah (.) because they know GPs are going
they have given a few of the blood	**results**	there um and his sodium level was

10 Random concordance lines for "patient" collocating with "copy"

the other practical way that giving a	**patient**	a copy of the discharge summary are helpful
not sure in this situation whether the	**patient**	also had a copy of the um (.) referral to
to be a risk (.) if the GP and the	**patient**	always got a copy of the same letter there
for somebody to sit down with the	**patient**	and a copy of their discharge summary
three lines and then copies to the	**patient**	and copy to the GP and then someone from
there would be a way of producing a	**patient**	friendly copy and a doctor copy of the same
in medical speak so the fact that the	**patient**	gets a copy of that letter can sometimes be
the default position could be that the	**patient**	has a copy unless there is information on
very helpful it would be good if the	**patient**	is getting a copy of this to say renal
yeah I think that is quite handy for the	**patient**	to have a copy of (.) there is nothing in

10 Random concordance lines for "patient" collocating with "letter(s)"

I think discharge letters are useful for	**patients**	to see particularly with things
not just that it's always things like out	**patient**	letters of course sometimes patients will get
or you know kind of a simple letter to the	**patient**	I know it's all about time and getting the
I don't think it is inappropriate for the	**patient**	to have this letter I don't think it shows too
sometimes (.) so for example I just had a	**patient**	who had a letter today not one of the
if they do give a copy of the letter to the	**patient**	it is in an envelope that is sealed with
summary as well as a letter to their	**patient**	literally within days of discharge which
um there is always your um professional	**patient**	who reads every letter and every detail of
6 weeks' time and also notifying that the	**patient**	will receive a letter for the outpatient
waste more resources re-explaining out	**patient**	letters than we do discharge letters and as a

10 Random concordance lines for "patient" collocating with "friendly"

don't know if that is a bit more	**patient**	**friendly** because very occasionally you get this
it needs to be and then it pulls the	**patient**	**friendly** bits out of the main discharge summary
it would have to be made very	**patient**	**friendly** but then that becomes difficult because
would be a way of producing a	**patient**	**friendly** copy and a doctor copy of the same
better isn't it (.) that is much more	**patient**	**friendly** (.) everyone knows what an outpatient
I think that would probably be more	**patient**	**friendly** for most people but obviously you
to make it in a slightly more	**patient**	**friendly** form but yeah (.) absolutely I am in
but I think it would need to be in	**patient**	**friendly** language and everything in kind of
a read code that may not be very	**patient**	**friendly** so you know it may have a medical
that is actually written in quite a	**patient**	**friendly** way then also written medication and

10 Random concordance lines for "patient" collocating with "information"

we don't need much information but if a	**patient**	has had a 4 month admission
shouldn't be the only stream of information to the	**patient**	the other information to the patient
a box at the bottom that says information for the	**patient**	and then a line with a
page that is specifically information for the	**patient**	um that is just that one
I mean this letter has got some information that	**patients**	can understand shortness of breath
so perhaps um (.) websites stated on it where the	**patient**	can get more information if they
some choosing to share information with	**patients**	patients and others not so there
be in the context of other information to the	**patient**	not the only source of information
and that sort of thing what information it is that	**patients**	want to take home and
clinician and it's an additional information to the	**patient**	but it shouldn't be the

All concordance lines for [LAYMAN]

patient what was happening to them in	**laymans**	terms and carefully considered so that it
actually maybe they should have it in	**laymans**	terms to not be worried about it and then
and to have to explain all of that in	**laymans**	language or you know kind of a simple letter
medical term was then qualified with	**laymans**	terms on a discharge letter to be able to go
for the patient and then a line with a	**laymans**	explanation about it might be quite a useful
they have undergone if it can be in	**laymans**	terms you have fractured your pelvis (.) you
language and everything in kind of	**laymans**	terms but yeah but no I think outpatients
that means you need that explained in	**laymans**	terms and that is the same with all discharge
list of their medications and a brief	**laymans**	interpretation it would take forever (.) um
they then might want to have that in	**laymans**	explanation of what has happened because
day 5 you could have a very quick	**layman**	interpretation at the bottom I suppose in the

Sample of 10 random concordance lines for "copy" [NOUN]

I think it could be useful for them to have a	**copy**	from the medication point of view but then it
other practical way that giving a patient a	**copy**	of the discharge summary are helpful in that
know whether they found it useful to have a	**copy**	of their letter or not of their discharge letter
clearer copy not necessarily the same as the	**copy**	that the GP gets but a more abbreviated form
and bear in mind that if you misplace your	**copy**	then someone else out there will have that
doctor or whoever then they have got a	**copy**	there I think the problems with the discharge
but otherwise that would be fine for a	**copy**	to go to the patient I think it would be quite
often if I see a patient I will print them out a	**copy**	to keep with them you know so if they get the
look on CRSS to dig out the original scanned	**copy**	to look at the green biro on every discharge
summary or think they have got to give a	**copy**	to us and they don't know that we have

Sample of 10 random concordance lines for "copy" [VERB]

probably a good thing that they do get	**copied**	into them or get given them on discharge to
clinic to primary care (.) um not	**copied**	to the patient so I have not arranged to see
not obvious (.) if the patient has been	**copied**	in sometimes I am not quite sure no (.) and
to this phone call it could have been (.)	**copied**	to the patient which would have made it even
letter because it doesn't say it's been	**copied**	whereas with the outpatient letters you will
directing it to the GP but if you are	**copying**	the patient in then taking out those forms of
at the moment whether it has been	**copied**	to anybody (.) well I wouldn't know
the endocrine clinic to your care and	**copied**	to the eye surgeon and the patient did not
nature but I notice the consultant hasn't	**copied**	it to the patient in addition he took an extra
it would have been good for it to be	**copied**	to the patient but otherwise I think it is quite

Sample of 10 random concordance lines for lemmatised form of "GP"

and then later on in the letter there is a	**GP**	action box which is a good part of the
Yeah (.) because they know	**GPs**	are going to look them up but then if
and day five so you might have actions for	**GP**	I suppose you could put a little box at the
will handwrite them for speed and what the	**GP**	needs to know urgently and then the typed
there were also some clear notes for the	**GP**	not necessarily in terms of stuff that we had
as I say I have written here that as the	**GP**	reader it wasn't clear which of the two had
By that (.) Because it says actions to	**GP**	then yes or would the GP do it or- it is not
you have a very quick bullet point for the	**GP**	(.) um further up (.) how feasible that would
a little bit overwhelming for us as the	**GP**	we would rather have something a bit more
taking on the wards and sometimes as a	**GP**	you find that they just say do a blood test go

H Concordance line samples (section 8.4)

Sample of 10 random concordance lines for lemma "[DISCHARGE]"

so not very positive experience of that	**discharge**	either (.) I read the information when I got
take the hospital visit as I was being	**discharged**	I was handed a letter in an envelope
they going to be ready where is the	**discharge**	letter because we didn't know what the
I really didn't understand what the first	**discharge**	letter to me was useful for I can
in and out a few times so (.) received	**discharge**	papers for them (.) um I was taken in
and it says each hospital has its own	**discharge**	policy I am just wondering why (.) why
a letter from the hospital when I was	**discharged**	um which basically said which medication
it wasn't ideal but the discharge the	**discharge**	was a bit hit and miss really and
that was given (.) and the way I was	**discharged**	was very poorly done (.) the first time I
uh usually as a rule when you get	**discharged**	you don't get a lot of information (.)

All lines for "medical" with the Q5 sub-corpus

judgement on that (.) so I think in the	**medical**	case um the technical stuff Is there to give to the
the full names of them It's sort of	**medical**	jargon isn't it (.) every profession has its own list
Yeah probably because I have got	**medical**	knowledge so I would understand it and I would
with me they didn't tell me what the	**medical**	name of it was and I could obviously feel that I
so (.) because I don't there is a lot of	**medical**	stuff in there that I don't (.) I wouldn't
be difficult because it would be	**medical**	terms and they wouldn't have a clue what it was
but I have taken a lot of interest in	**medical**	things some people might find it a bit daunting I

Sample of lines where patients articulate they cannot "think" of anything" else to add for Q8

I don't think so no I cant	**think**	**of anything** else
So I think I'm alright really (.) Um I cant	**think**	**of anything** really
I think we have covered it I mean if I	**think**	**of anything** I will give you a bell
No I cant	**think**	**of anything** (.) to do with this current sort of
I cant	**think**	**of anything** (.) no nothing (.) can't think of
had that long off before um (.) but I cant	**think**	**of anything** else I actually thought at the time or

Illustrative sample of 10 lines for lemmas "[TEST]" and "[RESULT]"

comprehensive um (.) they even gave	**results**	and treatment and management *gestures to
a very detailed letter about all the	**tests**	they did and what they found (.) I went into
(.) no she had to wait for same for the	**results**	of the tests for lots of the stuff that they took out
was more you know they have all the	**tests**	and everything but I've not gotten anything (.) I
(.) that I needed a kidney function	**test**	which I knew from a discharge in [DATE] and I've
was there including the blood	**results**	as well so yeah (.)
to wait a few weeks to find out the	**result**	was not a stroke which I was on the edge like this
with discharge if you have had any	**tests**	you need the results of those tests if they found
with what you went in for what they	**tested**	you for (.) what the prognosis is and what the
what was it for and what was the	**results**	I didn't know (.) so I was ignored most of the time

I Hospital professional survey

Katharine Weetman
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Tel: 02476 151077

Hospital Clinician Survey Version 1.0 11.04.18

Study Title: An Investigation of Written Discharge Communication between Hospital Clinicians, GPs and Patients

We are interested in hearing your views about current practices of discharge communication, what you currently do and how you think the process could be improved.

GPs from across Coventry, Rugby, South & North Warwickshire and Herefordshire have selected a variety of discharge letters for this study and **you were the named writer of one of these letters.**

We have enclosed a redacted copy of this letter for your reference and reflection.

Please take a few minutes to fill out this survey on discharge communication for hospital clinicians. This survey is not anticipated to take up more than 5-15 minutes of your time.

If you complete and return this survey you are consenting to take part and for **your data to be used** for this discharge communication research study. If you would like further information, a hospital clinician (HP) participation information sheet is enclosed.

Electronic versions of the survey are available please email K.Weetman@warwick.ac.uk.

If you receive more than one survey invitation about different discharge letters/summaries you wrote or signed, please complete no more than 2 surveys in total.

Research ID: HP [NUMBER]

Site (hospital):

Please state your current professional grade/role ________________________________

Which specialty/ward were you working on when you wrote the attached letter?
____

Please state the year you clinically qualified
____

Please state in which country you completed your medical training
____

Please note there is space at the end of this survey (Question 15) for you to comment and provide reasons for any of your answers.

1. Please rate, in your opinion, the quality of the attached discharge letter you wrote:

Low Quality 1 2 3 4 5 6 7 8 9 High Quality

2. How does this letter quality compare to other letters you write?

☐ better ☐ worse ☐ same

If answered 'better' or 'worse', please explain:

____

3. Please rate, in your opinion, how **clear** you think the attached discharge letter is to a GP:

Unclear 1 2 3 4 5 6 7 8 9 Very clear

4. Please rate how informative you think the **diagnosis** in the attached discharge letter is to a GP:

Uninformative 1 2 3 4 5 6 7 8 9 Informative

5. Please rate how informative you think the **medication plan** in the attached discharge letter is to a GP:

Uninformative 1 2 3 4 5 6 7 8 9 Informative

6. Please rate how informative you think the **care management plan (including any required follow up)** in the attached discharge letter is to a GP:

Uninformative 1 2 3 4 5 6 7 8 9 Informative

7. Please rate, in your opinion, how clear **(comprehensible)** you think the attached discharge letter is to a **PATIENT**:

Unclear 1 2 3 4 5 6 7 8 9 Very clear

8. How often do you copy patients into discharge letters?

☐ Never ☐ Occasionally ☐ Most of the time ☐ Always

9. How often do you think patients should be copied into/given/sent hospital discharge letters/summaries?

☐ Never ☐ Occasionally ☐ Most of the time ☐ Always

10. Do you feel all patients should be offered a choice of whether or not they receive/are given a hospital discharge letter?

☐ Yes ☐ No

11. Do you think patients should receive a direct copy of the discharge letter sent to the GP or a personalised patient discharge letter?
☐ GP copy ☐ Personalised letter ☐ Neither ☐ Both

12. What is your preferred discharge summary/letter form?
☐ dictated/free text letters ☐ structured letters ☐ No preference ☐ other

13. Should patients receiving hospital discharge letters/summaries be an opt-in or opt-out system?
☐ opt-in ☐ opt-out ☐ Neither ☐ No preference

14. How often do you think your discharge letter writing is in line with the Department of Health "Copying letters to patients: good practice guidelines"?
☐ Never ☐ Occasionally ☐ Most of the time ☐ Always ☐ Unfamiliar with guidelines

15. Please use this space to provide reasons for any of your answers or share any additional comments about discharge communication or how the process may be improved:

Thank you for taking the time to fill out our survey. We rely on your feedback to help us further communication research.

Please return your survey by:

EMAIL: K.Weetman@warwick.ac.uk OR POST TO:

Katharine Weetman, Primary Care, Warwick Medical School, University of Warwick, Coventry, CV4 7AL

Surveys may also be returned to your Research and Development department via internal post for transfer to the research team. The research team can also collect the survey(s), please email K.Weetman@warwick.ac.uk to request this.

If you are interested in hearing about the results of our research or further opportunities to get involved please complete the below (optional):

A. I agree to my contact details being kept for the researcher to contact me for any further research activities for this project.

☐ Yes ☐ No

B. I would like the research team to share the research results with me.

☐ Yes ☐ No

If yes to A or B above, please provide your preferred contact details:

____

At Warwick University, we strive for equal research opportunities for all. Where possible, we monitor patients and staff recruited for research to assess the sample diversity. If you are happy to provide any personal information about yourself, please complete below. **Please note: providing this information is not required for you to participate in this research.**

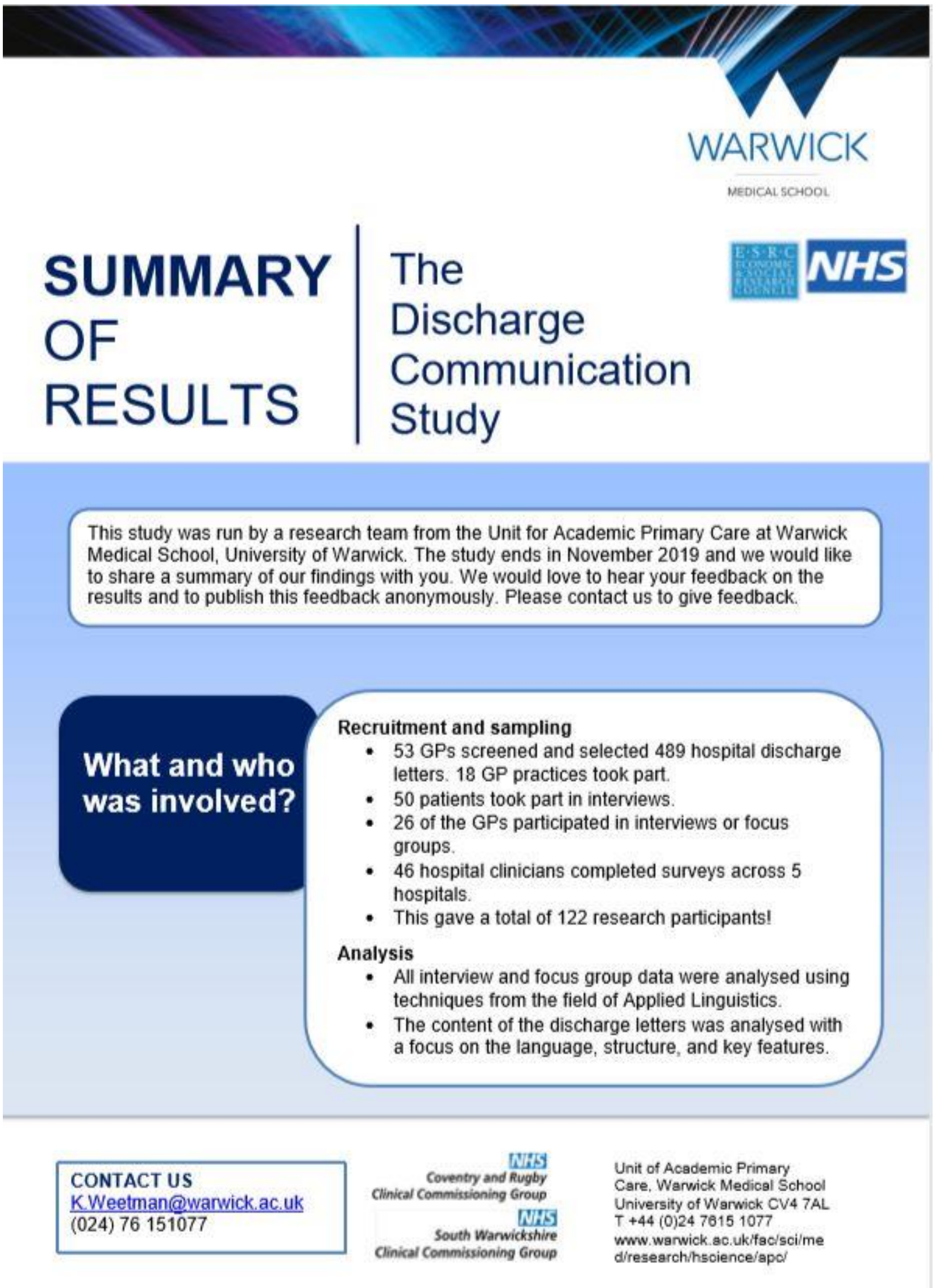
Hospital professional role:………………

Age: ……………. Gender: ……………………………………………

Ethnicity: ………………………………………….

Religion: ……………………………………………

J Results summary for dissemination work



WARWICK
MEDICAL SCHOOL

SUMMARY OF RESULTS

The Discharge Communication Study

This study was run by a research team from the Unit for Academic Primary Care at Warwick Medical School, University of Warwick. The study ends in November 2019 and we would like to share a summary of our findings with you. We would love to hear your feedback on the results and to publish this feedback anonymously. Please contact us to give feedback.

What and who was involved?

Recruitment and sampling

- 53 GPs screened and selected 489 hospital discharge letters. 18 GP practices took part.
- 50 patients took part in interviews.
- 26 of the GPs participated in interviews or focus groups.
- 46 hospital clinicians completed surveys across 5 hospitals.
- This gave a total of 122 research participants!

Analysis

- All interview and focus group data were analysed using techniques from the field of Applied Linguistics.
- The content of the discharge letters was analysed with a focus on the language, structure, and key features.

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Summary of what we found

Patients

- Many wanted to receive discharge letters and several described benefits from patients receiving letters (e.g. medication reminder).
- Not all wanted letters and so *choice* is important.
- Some highlighted that letter preferences should be part of electronic health records so that patients are not burdened with asking for letters when they are in hospital or feeling poorly.
- Most expressed preference for "opt out" systems of letter receipt.
- Patients identified that being given discharge letters can increase knowledge, reduce uncertainty, and improve wellbeing.
- Providing discharge letters can allow patients to correct errors.

Letters

- Patients should be given letters *with* verbal information, *not* instead of information.
- Findings indicated that patients are still receiving letters inconsistently.
- "Blank" boxes on letters can be confusing and need to be avoided.
- Emailing letters could speed up communications and save paper.

Clinicians

- Some thought a single discharge letter could be useful for *both* GPs and patients with a few adaptions (e.g. no unexplained acronyms).
- GPs found it helpful when summaries clearly indicated any medication changes (or not) and reasons for these.
- Some hospital clinicians suggested increased training and support for junior doctors in this area could improve confidence and quality of letters.

What we recommend based on results

- Patients being copied into discharge letters requires standardisation and auditing.
- Letters should be in plain English with minimal or no acronyms. Any medical terms or jargon should be explained in simple lay terms.
- Letters should contain a simple interpretation of results (e.g. all blood tests normal), and clear patient actions and recommendations.
- Future policies need to prioritise content features that are associated with "successful" letters (e.g. clear appropriate GP actions).
- Training and support in letter writing should be provided as part of medical training to improve the content of discharge letters and patient outcomes.

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