

Investigating the implementation and sustainability of the Healthy Living Pharmacy project

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Abstract

Aim: To investigate the barriers and facilitators identified within the various stages of implementing the Healthy Living Pharmacy (HLP) project and the limitations to its sustainment within community pharmacy.

Scope: The HLP project is a Department of Health commissioned initiative to enhance the potential contribution of community pharmacy towards improving the health of their local communities.

The research was conducted between November 2011 and January 2017 in Portsmouth - the HLP project pilot site. A literature review on the development of community pharmacy activities and implementation of services provided a contextual basis.

Semi-structured interviews with community pharmacy staff and subsequent framework analysis informed by *implementation* theory was employed to investigate the study aims. A sustainability strategy in the form of an online networking platform aiming to support the role of the Healthy Living Champions (HLCs) was designed and implemented. Its evaluation, including social network analysis revealed the effectiveness of this intervention.

Results: The findings identified the Healthy Living Champions' (HLCs') contribution and an emerging community of practice (CoP) as critical factors in the apparent successful implementation of the project. Despite the introduction of a HLC Facebook group, which demonstrated potential to serve as a virtual community of practice (VCoP), the sustainability of the HLP proved challenging. Ultimately, poor integration of community pharmacy into the wider NHS as well as contractual issues and commissioning constraints, resulted in the HLP project demonstrating poor potential for long-term sustainability.

Conclusions and contribution to the knowledge of the subject: This study is one of the first to successfully employ and report on the use of implementation theory to investigate the adoption and sustainability of innovation within UK community pharmacy. The findings elaborate on those of a recent NHS publication reporting on the challenges of providing clinical services in community pharmacy; and provide important lessons for consideration in planning and developing future community pharmacy innovations.

Table of Contents

Abstract	2
Table of Contents	2
Declaration.....	7
List of tables	8
List of figures	9
Abbreviations and acronyms.....	10
Acknowledgements.....	11
Credits.....	11
External outputs.....	12
Chapter 1 Introduction to the thesis	13
1.1 Origins and development of the thesis	13
1.1.1 The United Kingdom community pharmacy market.....	13
1.1.2 The state of community pharmacy in United Kingdom	14
1.1.3 Change within UK community pharmacy.....	15
1.2 Aim and objectives.....	15
1.3 Structure of the thesis	17
Chapter 2 : Review of the literature	18
2.1 Community pharmacy.....	18
2.2 The development of the public health role in community pharmacy	19
2.3 Defining the public health role of community pharmacy.....	20
2.4 Recognition of the potential for community pharmacy to improve public health and the community pharmacy contract.	25
2.5 Is community pharmacy the right setting for public health initiatives?.....	28
2.6 Community pharmacy support staff.....	33
2.7 The HLP project	36
2.8 Demography of Portsmouth	38
2.9 Evaluation of the HLP project.....	41
Chapter 3 : The implementation of the HLP project in Portsmouth’s community pharmacies	42
3.1 Introduction	42
3.1.1 The need to evaluate the HLP project.....	42
3.1.2 The implementation of the HLP project.....	43
3.1.3 Defining professional services in community pharmacy	44
3.1.4 Innovation in healthcare	45
3.1.5 Models and frameworks for change.....	46
3.1.6 Rationale for the use of the Generic Implementation Framework (GIF)	48
3.1.6.1 The Generic Implementation Framework (GIF) processes of implementation and domains .	49

3.1.6.2	The Generic Implementation Framework (GIF) factors	53
3.1.6.3	The Generic Implementation Framework (GIF) strategies	55
3.1.6.4	The Generic Implementation Framework (GIF) evaluations.....	57
3.1.7	Summary of models to be used within the GIF in evaluating the implementation of HLP	58
3.1.8	Aim and objectives.....	58
3.2	Methods	59
3.2.1	Overview of the study methodology.....	59
3.2.2	Rationale for adopting qualitative design	60
3.2.3	Rationale for the choice of data collection method.....	61
3.2.4	Rationale for use of framework analysis	62
3.2.5	Literature review	63
3.2.6	Data collection	63
3.2.6.1	Sampling and recruitment.....	63
3.2.6.2	Interview design	64
3.2.6.3	Interview pilot	66
3.2.6.4	Interviews.....	66
3.2.6.5	Audio recording and transcription	67
3.2.7	Data analysis.....	69
3.2.7.1	Overview of data analysis	69
3.2.8	Ethical approval	70
3.3	Results.....	71
3.3.1	Process of implementation	72
3.3.2	Implementation influences/domains.....	81
3.3.3	Secondary analysis: factors, strategies and evaluations.....	84
3.4	Discussion.....	85
3.5	Conclusion	90
Chapter 4 : The Health Living Champions' Network.....		92
4.1	Introduction:	92
4.1.1	The 'Champion' concept.....	93
4.1.2	The concept of a 'community of practice'	96
4.1.3	Community of practice in healthcare	98
4.1.4	Virtual Community of Practice (VCoP)	101
4.1.5	Aim and objectives.....	102
4.2	Methodology.....	102
4.2.1	Qualitative methods.....	103
4.2.1.1	Focus groups.....	103
4.2.3	Description of methods employed.....	104
4.2.3.1	Methodology of the focus groups	105

4.2.3.2 Data analysis.....	106
4.2.4 Ethical approval.....	107
4.3 Results.....	108
4.3.1 Focus groups.....	108
4.3.1.1 Focus group analysis – derived themes.....	111
4.4 Discussion.....	116
4.5 Conclusion.....	119
Chapter 5 : Supporting the HLCs’ community of practice.....	120
5.1 Introduction.....	120
5.1.1 Supporting CoPs.....	120
5.1.2 Virtual Community of Practice (VCoP).....	121
5.1.3 VCoPs in healthcare.....	122
5.1.4 The use of social media amongst healthcare professionals.....	123
5.1.5 VCoP design and the factors influencing user involvement.....	124
5.1.6 Evaluation of VCoPs.....	128
5.1.7 Social Network Analysis (SNA).....	133
5.1.8 Realist evaluation.....	134
5.1.9 Aim and objectives.....	135
5.2 Methodology.....	135
5.2.1 Designing and implementing the VCoP.....	135
5.2.2 Evaluating the VCoP using a realist evaluation.....	137
5.2.2.1 Stage 1: Theory.....	139
5.2.2.2 Stage 2: Hypothesis generation.....	142
5.2.2.3 Stage 3: Observation.....	142
5.2.2.4 Programme specification.....	144
5.2.3 Ethics approval.....	144
5.3 Results and discussion.....	144
5.3.1 Stage 1 results: Developing theory - HLC Semi-structured interviews.....	144
5.3.2 Stage 2 results: hypothesis generation.....	151
5.3.3 Stage 3 results: Observation (Online survey and Social Network Analysis of Facebook activity)	152
5.3.4 Stage 4 results: Programme specification.....	156
5.3.5 Summary.....	157
5.4 Conclusion.....	158
Chapter 6 : Investigating the sustainability of the HLP project in Portsmouth’s community pharmacies.....	159
6.1 Introduction.....	159
6.1.1 What does sustainability mean in the context of HLPs?.....	159

6.1.3 The sustainability of interventions in healthcare settings	161
6.1.4 Sustainability capacity of the HLP project	163
6.1.5 Aim and objectives.....	164
6.2 Methods	164
6.2.1 Overview of the study methodology.....	165
6.2.2 Data collection	166
6.2.3 Data analysis.....	167
6.2.4 Ethical approval	168
6.3 Results.....	168
6.3.1 PSAT domain scores.....	169
6.4 Discussion.....	177
6.5 Conclusions	180
Chapter 7 : Overall discussion	181
7.1 Focus of the study	181
7.2 Summary of results	181
7.3 Existing research and importance of the findings.....	182
7.4 Application to current practice.....	184
7.5 Implications and recommendations for further work	185
7.6 Limitations of the study	186
7.7 Overall conclusions	186
References.....	188
Annex 1 Letter for Ethics Committee confirming favourable opinion	214
Annex 2 UPR16 Form.....	215
Appendices	217
Appendix 2.1 The factors affecting service delivery in community pharmacy	217
Appendix 3.1 Databases searched and key terms used	223
Appendix 3.2 Study information sheet and consent form	224
Appendix 3.3 Final interview schedule.....	226
Appendix 3.4 Interview check list.....	227
Appendix 3.5 Analysis of influencing factors according to the CFIR across the stages of implementing the HLP project	228
Appendix 3.6 Implementation strategies.....	229
Appendix 4.1 Study information sheet and consent form	231
Appendix 4.2 Interview schedule and topic guide.....	233
Appendix 4.3 Illustrated guide provided to HLCs to aid with the use of Facebook	234
Appendix 6.1 The Programme Sustainability Assessment Tool administered to assess HLP sustainability capacity	243

Appendix 6.2 Study information sheet and consent form252
Appendix 7 HLP literature review254

Declaration

Whilst registered as a candidate for the above degree, the author has not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.



Zachariah Nazar

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List of tables

Table 2.1 UK National Service Framework hierarchy	22
Table 2.2 Overview of the quality of studies included in the reviews identified.....	23
Table 2.3 The roles of pharmacy support staff defined in literature	34
Table 2.4 Supporting research employed to inform the design of the HLP model	37
Table 2.5 Accreditation criteria Level 1 HLP	38
Table 3.1 The frameworks and models to be considered in evaluating the implementation of the HLP project.....	49
Table 3.2 Stages and activities of the implementation process as articulated by Moulin et al.	51
Table 3.3 The Consolidated Framework for Implement Research (CFIR) factors identified to influence the successful implementation of an intervention.	54
Table 3.4 RPS reported barriers to implementing innovation in community pharmacy.....	55
Table 3.5 Facilitators of change in community pharmacy.....	56
Table 3.6 The conceptual models selected to use within the GIF for guiding the evaluation of the HLP implementation.	58
Table 3.7 The five stages of the framework analysis method for data management.....	62
Table 3.8 The type of pharmacy at which interviewed staff were employed.....	71
Table 3.9 Details of the job role of the staff interviewed	71
Table 3.10 Resulting stages and activities of the implementation process of the HLP project in Portsmouth’s community pharmacies.....	73
Table 3.11 Outline of the specific GIF implementation concepts recognised to apply to the HLP project.....	86
Table 4.1 Characteristics of the focus group participants	108
Table 5.1 Factors that influence healthcare professionals’ online interaction in a VCoP	127
Table 5.2 Examples of determinants and measure of success of online communities.....	130
Table 5.3 Factors recognised to influence VCoP user satisfaction.....	131
Table 5.4 The rationales for the steps taken in designing and implementing the platform to support the HLC CoP.	136
Table 5.5 Four-stage approach to the realist evaluation employed in evaluating the HLC Facebook group.....	139
Table 5.6 Brief summary of the literature findings of the characteristics of VCoPs, factors recognised to influence user involvement and outcomes achieved.....	140
Table 5.7 Preliminary list of CMOs that potentially play a role in the HLC Facebook group supporting HLC practice.....	151
Table 5.8 CMO configuration statements tested as part of an online survey exploring users’ experience of participating in the HLC Facebook group.	152
Table 5.9 Items and activities posted on the HLC Facebook group by the HLCs	155
Table 6.1 Example of one of the 40 items included in the Programme Sustainability Assessment Tool.....	163

List of figures

Figure 1.1 The structure of the thesis	17
Figure 3.1 Generic Implementation Framework (GIF)	47
Figure 3.2 Conceptual model for considering the determinants of diffusion, dissemination, and implementation of innovations in health service delivery and organisation, based on a systematic review of empirical research studies	50
Figure 3.3 Overview of study methodology to investigate the implementation and early perceived outcomes of the HLP project.	60
Figure 3.4 Framework for the implementation of HLP in community pharmacy.....	86
Figure 4.1 The three inter-related key elements of a community of practice (COP)	98
Figure 4.2 Analytical model of the issues relating to HLC meetings discussed in the focus groups ..	110
Figure 5.1 The key components and factors of the online community framework	129
Figure 5.2 Theoretical model of factors influencing VCoP user satisfaction	131
Figure 5.3 Realist evaluation theory	135
Figure 5.4 The realist evaluation cycle.....	138
Figure 5.5 HLC Facebook activity generated from a NodeXL spreadsheet.....	154
Figure 6.1 Graphic framework for sustainability of public health programmes/interventions	162
Figure 6.2 Overview of study methodology to investigate the sustainability of the HLP project	166
Figure 6.3 The Mean PSAT Sustainability Capacity scores by domain, as attributed by the pharmacy staff employed in Portsmouth’s community pharmacies (n=12).	170

Abbreviations and acronyms

ACT	Accuracy Checking Technicians
CCG	Clinical Commissioning Group
CFIR	Consolidated Framework for Implementation Research
CMO	Context, Mechanism, Outcome
CO	Communications Officer
CoP	Community of Practice
DA	Dispensing Assistant
DoH	Department of Health
FG	Focus Group
GIF	Generic Implementation Framework
GP	General Practitioner
HLC	Healthy Living Champion
HLP	Healthy Living Pharmacy
LEPs	Leading Edge Practitioners
MCA	Medicines Counter Assistant
MUR	Medicines Usage Review
NHS	National Health Service
OTC	Over-the-counter
PA	Pharmaceutical Advisor
PCT	Primary Care Trust
PSAT	Programme Sustainability Assessment Tool
PT	Pharmacy Technician
RET	Realist Evaluation Technique
RCT	Randomised Controlled Trial
RPS	Royal Pharmaceutical Society (formerly the RPSGB)
SD	Standard Deviation
SNA	Social Network Analysis
VCoP	Virtual Community of Practice

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Credits

Cheryl Morgan: Portsmouth City Council Marketing and Communications Officer, whose role includes leading on behaviour change marketing for public health within Portsmouth City Council; and contributed to this study in delivering Facebook training and providing a user guide for the HLCs.

External outputs

Results of research described within this thesis have been disseminated through the following outputs:

Reports:

Bowhill J, Bowhill S, Evans D, Holden M, Nazar Z, Portlock J. An Interim Report on the Outcomes from the Portsmouth Health Living Pharmacy Initiative. Portsmouth: NHS Portsmouth; 2010

Invited speaker

The Healthy Living Pharmacy Model: An opportunity for Australia? Community Pharmacy Expo Conference, July 2015, Sydney, Australia.

Publications:

Nazar Z, Brown D, Portlock J (2013) Qualitative analysis of stakeholders' perspectives on the impact of the Healthy Living Pharmacy project in Portsmouth. *International Journal of Pharmacy Practice*. 21(S2), 79-80.

Brown D, Portlock J, Rutter P, Nazar Z (2014) From community pharmacy to healthy living pharmacy: positive early experiences from Portsmouth. *Research in Social and Administrative Pharmacy*, 10:72-78.

Nazar Z, Brown D, Portlock J, Rutter P (2016) A survey of Portsmouth Health Champions' contribution to sustained participation in the Healthy Living Pharmacy project. *International Journal of Pharmacy Practice*. 24 (S1) 32-33.

Nazar N, Portlock J, Rutter P, Brown D (2016) Portsmouth Healthy Living Pharmacy Health Champions: An opportunity for sustained participation in public health activities. *Research in Social and Administrative Pharmacy* pii: S1551-7411(15)00284-3.

Nazar Z, Brown D, Portlock J, Rutter P (2017). Can a Facebook networking group support and encourage Health Champions to continue their involvement in Healthy Living Pharmacy activities? *International Journal of Pharmacy Practice*. 25 (S1) 54-55

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Chapter 1 Introduction to the thesis

1.1 Origins and development of the thesis

This chapter provides an introduction to the research study, including the origins and development of the PhD.

Each of the themes introduced will be briefly described and then further discussed with reference to the literature in Chapter 2.

Despite a number of opportunities that have been made available to community pharmacy, it was described by the Conservative party spokesman in 2009, as the country's "most under-utilised national resource in the delivery of services to National Health Service (NHS) patients"¹.

Studies have been carried out to investigate the success of delivering specific public health services from community pharmacy and factors affecting service delivery and health outcomes^{2, 3}. Despite these studies, the extended role of the community pharmacy team has not been developed, delivered and embraced by the profession as rapidly as one might expect⁴.

The Government's expectations of the profession and the evidence base for community pharmacy's potential contribution to improving the health of the public have been key drivers for the development of the Healthy Living Pharmacy (HLP) project⁵.

The HLP project was created to build upon the roles conducted from community pharmacies and attempts to utilise the potential of community pharmacy teams to establish additional key services for the local community⁶.

This research aims to explore the success or failure of the HLP initiative as a sustainable model for the delivery of public health services within community pharmacies.

1.1.1 The United Kingdom community pharmacy market

Community pharmacies in the United Kingdom (UK) are operated and run as private businesses independent of the NHS. They are able to sell products and services directly to their patients/customers⁷. Community pharmacies are able to supply Prescription Only Medicines and advice to customers based on a contract with the NHS, where the bulk of their remuneration is largely

based on the volume of prescriptions dispensed, rather than services provided⁸. Within the UK, the community pharmacy market is made up of a number of multiples (greater than 200 outlets), large chains (more than 20 outlets but less than 200), small chain of pharmacies (20 outlets or less but more than 5) and independent contractors (5 outlets or less), with multiples and large chains accounting for approximately 50% of the market⁹.

Community pharmacies are located in a variety of settings ranging from health centres, high street locations, edge of town shopping centres, and rural communities⁵. Each of these pharmacies is required to employ a pharmacist to legally operate. Community pharmacists are employed directly by a pharmacy company, work independently on a non-contractual basis, or own and operate an independent pharmacy themselves.

In England there are over 10,500 community pharmacies¹⁰. These community pharmacies are open at convenient times, including evenings and weekends, allowing access for people who work a wide range of hours. It has been shown that 89% of the population in England can access a pharmacy from home within a 20-minute walk. Importantly, in areas of highest deprivation, this value increases to almost 100%¹¹.

1.1.2 The state of community pharmacy in United Kingdom

The UK Government (2010 - current) has committed to providing a health service that is based around the needs of the people¹². It has focused on prevention programmes that help to keep people healthy, making general healthcare more accessible and introducing programmes that reduce health inequalities. The Government has recognised that health and social care will need to work together, along with new providers from the public and private sector, to deliver its vision for health outlined in 'The NHS Plan'¹³.

A number of opportunities are available for community pharmacists to become more involved in delivering NHS commissioned public health services, which promote self-care and improve the management of long-term conditions. Such services include Medicines Use Reviews (MUR)¹⁴ and the New Medicines Service¹⁵. Legislative changes have occurred to help community pharmacists extend their role, such as the legislative ability of pharmacist prescribing¹⁶ and supervision requirements¹⁷. The new community pharmacy contract¹⁸, introduced in 2005, included a change in the way in which community pharmacists are remunerated; funds traditionally earmarked for the dispensing role of community pharmacists were reallocated to patient facing roles.

These changes in health policy have provided community pharmacists the opportunity to develop and deliver a wider range of public health services¹⁹.

1.1.3 Change within UK community pharmacy

Despite changes in health policy, and the opportunities this has presented for community pharmacy, the implementation and delivery of new services **in England** has been slower than expected⁴. The structure of community pharmacy **within England, may** help to explain some of the issues around the slow development of public health services on behalf of the NHS⁴.

Problems with the implementation and delivery of services within community pharmacy have been experienced not **only in England**, but also at an international level. A number of studies have identified some of the barriers, facilitators and motivators affecting service delivery within community pharmacy^{4, 20-30}. These included: public demand and attitudes, pharmacist characteristics and attitudes, training, operational aspects of service delivery, remuneration, pharmacy environment and healthcare professional relationships. These factors, amongst others, are explored in Chapter 2.

The HLP concept originally described a commissioning framework. It was created by NHS Portsmouth Primary Care Trust (PCT) in 2009, to build upon the role of community pharmacies and establish them as a key provider of public health services for their local community³¹. It aspires to do this through a consistently high standard of delivery for locally required public health services that include: advice and interventions as well as regular health promotion activities².

The project's accreditation criteria were designed to support community pharmacies in developing three 'enablers' that have been identified to underpin the delivery of services³². These are:

- Workforce development, which requires a staff member to become a Health Living Champions (HLCs) (members of the pharmacy team who have undertaken specific additional training);
- On site premises fit for delivery of the service;
- Engagement with other stakeholders (e.g. General Practitioners, social care and public health professionals).

1.2 Aim and objectives

Aim

The overall aim of this study was to investigate the potential for the HLP project to provide a platform for community pharmacy's sustained involvement in public health initiatives.

Objectives

Following a review of the literature regarding the development and implementation of community pharmacy services, the following objectives explored the implementation and sustainability of the HLP project through the opinions and experiences of members of the community pharmacy team.

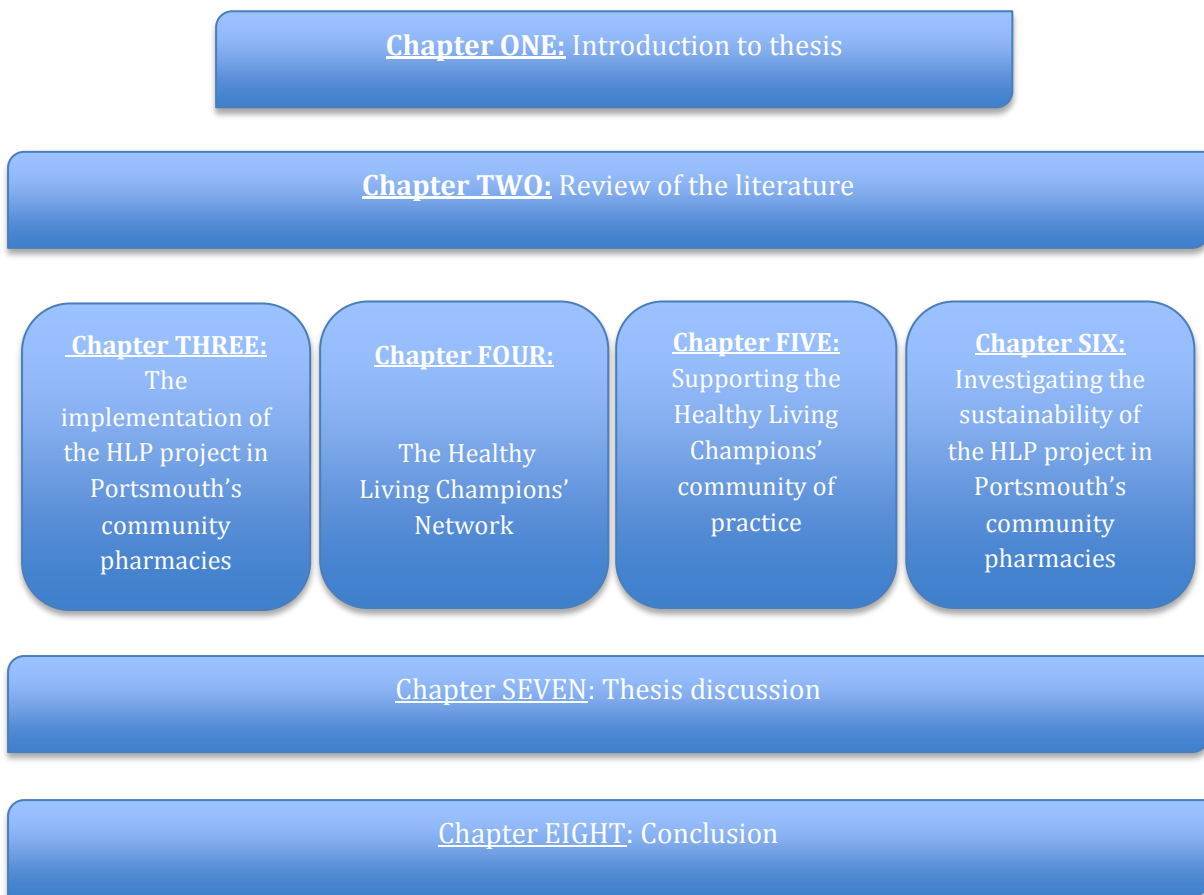
1. To investigate the implementation of the HLP project within the community pharmacies within Portsmouth.
2. To design, implement and evaluate an evidence-based strategy to enhance the implementation process and support the sustainability of the HLP project within the community pharmacies in Portsmouth.
3. To investigate the sustainability of the HLP project in community pharmacies within Portsmouth.

1.3 Structure of the thesis

The results from the study are presented over a series of chapters, describing the research activities. Results and discussion sections for each chapter are included, as findings from early chapters have informed the direction of further research.

Figure 1.1 offers a diagrammatical representation of the structure the thesis will follow. The contents page provides a more detailed content and the location of each of the chapters.

Figure 1.1 The structure of the thesis



Chapter 2 : Review of the literature

This chapter of the thesis reviews the literature relevant to this study. It explores the Government's health services strategy and its impact on community pharmacy activities, and analyses the success of public health initiatives within community pharmacy. The chapter further reviews the role of the pharmacy team in the provision of health services and recognises the potential for enhanced responsibilities.

This review demonstrates the impact of the changing political environment on community pharmacy, and the increasing number of opportunities available for community pharmacy to contribute towards the improving the health of the public.

2.1 Community pharmacy

In the UK, community pharmacies are a resource within primary care³³, used by customers in different ways and at different points in care pathways³⁴. It has been known for many years that the majority of illness episodes are not presented to general medical practitioners (GPs)³⁵. As alternatives to seeking medical advice for the management of symptoms or minor illness, members of the public may do nothing, they may seek advice from a pharmacy or elsewhere, they may self-treat with medicines or they may use a non-pharmacological approach³⁶.

In brief, the major health-related activities performed in community pharmacies are the dispensing of prescribed medicines, providing advice alongside sales on non-prescription medicines, providing advice on action to take regarding the treatment of minor ailments and the provision of services that improve the health of individuals³⁷.

Community pharmacy presents an unusual healthcare environment that provides a number of benefits as a setting for these activities³⁸. Venues such as walk-in centres and GP surgeries are clearly established as non-retail spaces, thereby patients are obliged to obtain a recommended medicine from a second venue following an appointment e.g. community pharmacy or retail outlet. Whereas the pharmacy represents a different type of space; one in which there is a combination of commercial retail elements with health products and advice. The organisation of space within community pharmacies reflects this mixed retail/healthcare role. The front part resembles a shop where customers can select goods that are both health and non-health related, while the dispensary and

shelves holding the medicines which can only legally be obtained from a pharmacy (Pharmacy-medicines), are located behind the pharmacy counter. Although the front area is primarily a retail environment, there is also a significant healthcare dimension to this space because patients collect prescribed medicines, and pharmacists, dispensing assistants and medicines counter assistants (MCAs) give advice on medicine use.³⁸

With extended opening hours and no appointment needed for advice, community pharmacy can be more accessible than other settings. In England, an estimated 1.6 million people visit a community pharmacy each day and, an average person will visit a community pharmacy 14 times over the course of a year³⁹. Importantly, community pharmacies often occupy a geographic position in the heart of communities⁴⁰. This gives community pharmacies access to a range of individuals in both good and poor health, and to those that may not have contact with any other healthcare professionals. Research has recognised that the public is trusting of advice received from community pharmacies⁴¹. Furthermore, a review of the evidence has confirmed the potential of pharmacy in the area of delivering public health initiatives, and suggests that pharmacy teams can indeed make a positive contribution to public health³. This is discussed in the following sections of this chapter.

2.2 The development of the public health role in community pharmacy

A recognised role in health promotion was one of the first ways community pharmacy contributed to public health⁴². Health promotion includes the provision of services or advice that improve the health of individuals and communities, and empower people to have increased control over and to improve, their health⁴¹.

As early as 1981, pilot schemes have been introduced to explore the potential of community pharmacy as sites for the provision of healthcare information and advice⁴³. Increasing health inequalities and the realisation that the existing health and welfare provision was not delivering a service to meet demand nor expectation were key drivers to initiating these pilots⁴⁴. In November 1987, the Government published its programme for improving primary healthcare, *Promoting better health*⁴⁵. This document recognised the potential role for community pharmacy in delivering health promotion and consequently included a recommendation that pharmacies be used to display health education and health promotion material.

As this public health role came to be more prominent within UK community pharmacies, the area became more researched. The initial published studies often reported very positive conclusions about a future role in health promotion⁴⁶⁻⁴⁹. However, these findings were derived from small studies,

involving few pharmacies in specific geographical areas. An example of which included a qualitative evaluation of a cholesterol screening programme delivered within four community pharmacies in an area of Birmingham⁵⁰.

A significant initiative in the development of the pharmacist's health promotion role was the Barnet High Street Health Scheme, introduced in 1991⁵¹. For the first time, pharmacists were provided training and ongoing support for their health promotion role. This included seven days of accredited training in health promotion knowledge and communication skills together with ongoing support for the health promotion role^{51, 52}. The scheme received publicity in both the pharmaceutical press⁵³ and the national media, and as a result, similar schemes were introduced elsewhere⁵⁴. A later survey in 1994 found that nearly 60 per cent of family health services authorities had some sort of health promotion activity in their pharmacies, and that most had been influenced by the Barnet scheme⁵². More specifically it was reported that the scheme prompted pharmacists to make more appropriate use of health promotion materials and spend less time dispensing medicines and more time talking and advising patients.⁵²

However, it should be noted that the project targeted developing the health promotion role of the pharmacist and was not inclusive of the whole pharmacy team. In addition the analysis revealed, that since pharmacists were not paid to undertake the health promotion activities, a number of pharmacists were not motivated to participate.^{55,56}

In the 1990s the emphasis on health promotion turned to a role in harm reduction; focusing on smoking cessation services⁵⁷, promotion of sensible attitudes to drinking and drug misuse services⁵⁸.

2.3 Defining the public health role of community pharmacy

Anderson *et al.* conducted a comprehensive review of the peer-reviewed and non-peer-reviewed UK research relating to the contribution of community pharmacists to improving the public's health during the period 1990-2002³.

The report demonstrated that community pharmacists can make an important contribution to health improvement in the areas of smoking cessation⁵⁹⁻⁶¹ and emergency contraception and provided the clearest evidence of the effectiveness and cost-effectiveness of services provided by community pharmacists⁶². The non-peer reviewed literature further identified evidence of community pharmacists' public health role in relation to the primary healthcare team and on user perspectives of sensitive health topics such as head lice management⁶³ and drug misuse services^{64, 65}. Further to this,

the authors made recommendations for the widespread implementation in pharmacies of these public health services.

The review also reported that despite studies identifying community pharmacists' involvement in other areas of health improvement, the authors were unable to determine the efficacy of these interventions, primarily because the evidence base was limited or the methodological quality was poor. Furthermore, the authors concluded from the published evidence that pharmacists tended to take a reactive rather than proactive approach to health improvement initiatives.

This review in its context of developing evidence of the public health contribution of community pharmacists, was later challenged in a critical review of public health in pharmacy by Jesson and Bissell⁴². The report re-analysed the evidence and identified that few of the 43 published UK papers in the 2002 review were based on any theoretical framework or models of behaviour change. Jesson and Bissell noted that in many studies, the determining factor for positive service outcomes was the training provided to pharmacists to deliver health promotion and argued that these interventions were as much about pharmacy development as public health. It was also recognised that the public health agenda, where health inequalities or neighbourhood regeneration and renewal were the context, were not reported on, suggesting that this was almost certainly because of the absence of such studies.

The authors also concluded that although pharmacists' attitudes towards health promotion/education were largely positive, most successful interventions were linked to medicinal merchandise in some way, such as smoking-cessation products, emergency contraception supply or provision of drug misuse services.

Further reviews of community pharmacy public health interventions were conducted by: Anderson *et al.* (2006)⁶⁶, Dent *et al.* (2007)⁶⁷, Sinclair *et al.* (2008)⁶⁸, Anderson *et al.* (2009)⁶⁹, Watson *et al.* (2009)⁷⁰, Strang *et al.* (2010)⁷¹, Gordon *et al.* (2011)⁷², Agomo (2012)⁷³, Brown *et al.* (2012)² and Watson *et al.* (2012)⁷⁴. These reviews reported on community pharmacy's contribution to improving public health or the contribution to improving specific public health issues.

The authors of the majority of these reviews employed the UK National Service Framework hierarchy of evidence to rank the individual studies included⁷⁵. (See Table 2.1)

Table 2.1 UK National Service Framework hierarchy

Evidence from research and other professional literature	
A1	Systematic reviews which include at least one randomised controlled trial (RCT) e.g. systematic reviews from Cochrane or NHS Centre for Reviews and Dissemination
A2	Other systematic and high quality reviews which synthesise references
B1	Individual RCTs
B2	Individual non-randomised, experimental/intervention studies
B3	Individual well-designed non-experimental studies, controlled statistically if appropriate. Includes studies using case control, longitudinal, cohort, matched pairs or cross-sectional random sample methodologies, and well-designed qualitative studies, well-designed analytical studies including secondary analysis
C1	Descriptive and other research or evaluation not in B (e.g. convenience samples)
C2	Case studies and examples of good practice
D	Summary review articles and discussions of relevant literature and conference proceedings not otherwise classified

The identified review articles relate to studies conducted during the period from August 2002 until August 2012 and include both international and UK studies. An overview of the quality of the studies included in the reviews is shown in Table 2.2.

Table 2.2 Overview of the quality of studies included in the reviews identified

Theme	Number of reviews identified	References	Quality of studies included in the reviews
Smoking cessation services	5	Dent <i>et al.</i> 2007 Sinclair <i>et al.</i> 2008 Anderson <i>et al.</i> 2009 Agomo 2012 Brown <i>et al.</i> 2012	B1, B2, B3, C1, C2, D B1 B1 B1 B1, B3, C2, D
Emergency Hormonal Contraception	4	Anderson <i>et al.</i> 2006 Anderson <i>et al.</i> 2009 Agomo 2012 Brown <i>et al.</i> 2012	B1 B3 B1 A2, B1
Prevention and management of drug abuse, misuse and addiction	6	Watson <i>et al.</i> 2009 Anderson <i>et al.</i> 2009 Strang <i>et al.</i> 2010 Agomo 2012 Brown <i>et al.</i> 2012 Watson <i>et al.</i> 2012	C1 B3 C1 A2, B3 B3, C1 C1, D
Healthy eating and lifestyle advice	4	Anderson <i>et al.</i> 2009 Agomo 2012 Gordon 2011 Brown <i>et al.</i> 2012	B3 B1, B2, B3, C1, C2, D B1, B2, B3, C1, C2, D B2
Chronic disease management	1	Brown <i>et al.</i> 2012	A1, A2, B1, B2
Infection control and prevention	3	Anderson <i>et al.</i> 2009 Agomo 2012 Brown <i>et al.</i> 2012	C1, B3 B2, D B2
Minor Ailment Scheme	1	Brown <i>et al.</i> 2012	B2, B3, C2

The review articles revealed that community pharmacists were involved in a wide range of roles in public health. The seven dominant themes were smoking cessation services (5 reviews), provision of emergency hormonal contraceptives (4 reviews), prevention and management of drug abuse, misuse and addiction (6 reviews), healthy eating and lifestyle advice (4 reviews), chronic disease management (1 review), infection control (3 reviews) and minor ailment scheme (1 review).

The review papers reporting on community pharmacy contribution to smoking cessation indicated that community pharmacy-based stop smoking services run by trained pharmacy staff were effective and cost-effective in helping individuals to quit smoking. The studies included in the reviews were of high levels of evidence (RCTs).

Three of the four reviews reporting on the provision of emergency hormonal contraceptives indicated good evidence that community pharmacy Emergency Hormonal Contraception services provided timely access to therapy and were highly rated by women who used them.

Six review papers detailing the community pharmacy role in the prevention and management of drug abuse, misuse and addiction included studies of varying quality. Watson and Blenkinsopp⁷⁰ reporting on studies of moderate quality, identified the involvement of community pharmacy in the management of alcohol misuse. The review concluded that there was little empirical evidence of effectiveness of community pharmacy-based services for alcohol misuse.

Moderate quality evidence on community pharmacy-based supervised methadone administration services showed that high attendance was achieved and it was acceptable to users. There is evidence from one review⁷¹, that the introduction of supervised methadone dosing resulted in substantial declines in death from overdoses of methadone in Scotland and England. However, the data used were not community pharmacy specific.

Pharmacy-based needle exchange schemes have been found to achieve high rates of returned injecting equipment and were cost effective. It should be noted that this evidence was based on descriptive studies^{2, 74} rather than a cost-analysis evaluation.

Four review papers included studies of moderate to good quality relating to the involvement of community in healthy eating and lifestyle advice^{2, 69, 72, 73}. All the identified reviews pointed to the fact that although community pharmacy-based weight reduction programmes appear to show promise, there is insufficient evidence to indicate the effectiveness of community pharmacy contribution.

Brown *et al.*'s report included six reviews in the area of chronic disease management and prevention. There was good quality evidence to support community pharmacy input into chronic disease management. This included a report indicating strong evidence of improvements in lipid levels that were sustained for at least one year in both primary and secondary prevention of coronary heart disease⁷⁶. A cardiovascular pharmacy service evaluation revealed strong evidence of significant reduction in systolic blood pressure but a limitation of this service was that the patients recruited into the service required regular reviews in order for a reduced systolic blood pressure to be maintained⁷⁷. There was also good quality evidence that enhanced medicines management in patients with heart failure recently discharged from hospital led to reduction in hospitalisation; however this did not lead to a reduced rate of mortality².

Evidence that community pharmacists can make an important contribution to the management of diabetes in terms of screening, improved concordance with medication and reduced blood glucose or

HbA1c was strong. Interestingly, community pharmacists were also effective in contributing to diabetic patients achieving weight reduction².

Brown *et al.*² found good evidence that community pharmacy interventions can improve respiratory function and medication adherence in patients with asthma. This was in contrast to the weak evidence for community pharmacy services targeting sufferers of chronic obstruction pulmonary disorder and osteoporosis screening services.

Two of three reviews identified moderate evidence from the United States of America (USA) for community pharmacy-based provision of a range of vaccinations^{2, 73}. Although this exercise did not identify UK papers on immunisation and vaccination, there has since been published reports evidencing UK community pharmacists contribution to increasing the season influenza vaccination uptake^{78, 79}. There is also evidence that community pharmacy-based chlamydia testing and treatment services increased customer access and detected positives for referral; however uptake of a UK nationally funded Chlamydia screening programme by community pharmacies was poor with implications for the prospects of disease control^{2, 69}.

Brown *et al.*² suggested that there is good evidence that minor ailment services have facilitated the transfer of an appreciable amount of the minor ailment care burden from GPs to community pharmacies but strong evidence for beneficial effect on patient health seem to be lacking.

2.4 Recognition of the potential for community pharmacy to improve public health and the community pharmacy contract.

The potential contribution of community pharmacy to public health has been increasingly acknowledged through Department of Health (DoH) publications and Government papers; these are reported below.

The DoH publication, *Primary care delivering the future (1996)*⁸⁰ recognised community pharmacy's public health activities as an area where innovative local practices existed, and called for national development of these initiatives. It proposed that pharmacists should be the first port of call for both advice and over-the-counter (OTC) medicines for treatment and that this would increase pharmacists' contribution to improving public health. The report also stated that pharmacists should be actively promoting the health of people, contributing to the local achievement of health targets, and encouraging the principle of self-care and individual responsibility for health.

Further to this, the White Paper, *The New NHS: Modern, Dependable* (DoH 1997)⁸¹ emphasised the need for local collaborative working in the NHS to reduce inequalities in health and to improve health as well as reinforcing the need for health promotion. The need for local collaboration was emphasised in the 1998 White Paper, *Our Healthier Nation*⁸². This report focused on improving the health of the population as a whole by increasing the longevity and the number of years people spend free from illness. The paper called for local areas to develop health improvement plans and services to effectively deliver appropriate healthcare with explicit mention of pharmacies as important settings for health promotion.

Reports of the Government's considerable focus on public health became primarily directed at developing capacity within the public health workforce and reducing inequalities in health^{83, 84}. A number of key policy documents outlined the areas in which the public health role of pharmacists should be developed further. For example, the Health Committee Inquiry into Public Health recommended that '*the Government takes steps for community pharmacists to play a more active role in public health*'⁸⁵. The Government strategy document for outlining the future direction of pharmacy, *Pharmacy in the Future*⁸⁶, recognised that the skills and expertise of the pharmacist could be further utilised. According to the strategy, this could be achieved through community pharmacy becoming more integrated within the NHS, through working more flexibly as part of a multidisciplinary healthcare team and through playing a greater role in supporting self-care.

Tackling Health Inequalities: A programme for Action (2003)⁸⁷ highlighted the importance of community pharmacy settings and services in addressing health inequalities. The report went on to state that community pharmacists have a vital role to play in improving the public's health by giving advice, specifically on how to quit smoking, offering exercise on prescription, identifying patients at risk of heart disease and providing services for substance users. *A Vision for Pharmacy in the New NHS* (2003)³⁷, recognised the untapped contribution that pharmacists can make to the public health agenda. The 'vision' made a commitment to develop a pharmaceutical public health strategy by 2005, integrating pharmacy and the wider public health agenda and workforce.

In 2005, the statutory provisions governing pharmaceutical services supplied to the NHS were restructured and a new pharmacy contract was introduced which incorporated a range of new services⁸⁸. The new community pharmacy contractual framework identified three levels of service: nationally agreed essential services, to be provided by all community pharmacy contractors; nationally specified advanced services, requiring pharmacists and their premises to be accredited for the purpose; and enhanced services to be commissioned and funded by primary care trusts⁸⁹. The inclusion of public health in the essential service element through promotion of healthy lifestyles and

involvement in national and local health campaigns recognised the importance of public health and the contribution that can be made by community pharmacy⁴⁰.

In January 2005, the DoH published two key documents^{90, 91}. The first provided information on developing policy on support for self-care, to empower people to treat themselves appropriately and avoid unnecessary taking of medicines⁹⁰. Community pharmacists were recognised as a source of advice for self-care, and innovative pharmacy schemes for minor ailments were quoted as examples of good practice within the report. The second document focused on providing support for people with long-term conditions⁹¹, in which pharmacists were also recognised as playing an important role in helping people to manage their conditions better. In March 2005, the DoH released their delivery plan for *'Choosing Health'*⁹², and shortly following this, *'Choosing health through pharmacy'*⁹³ was published. This resource was developed to maximise the contribution of community pharmacists, their staff, and the premises in which they worked, to improve health and reduce inequalities.

"We want to build on pharmacy's strengths, to develop and further extend health improvement services, working closely with the wider public health team and expanding their role as advocates for health."

Melanie Johnson MP, Parliamentary Under Secretary of State for Public Health⁹³

*'Choosing health through pharmacy'*⁹³ set out the contribution that pharmacy could make to delivering *'Choosing health'*⁹². This included: signposting, 'stop smoking' services, sexual health services, drug misuse schemes, obesity programmes, identifying individuals with risk factors for disease, and helping people to manage long term conditions.

In January 2006, the white paper *'Our health, our care, our say'* was released⁹⁴. Prior to publication, the DoH conducted a consultation exercise with over 40,000 people to understand what local people wanted out of their NHS service. The consultation showed the public wanted to see a wider range of professionals (particularly practice nurses and pharmacists) involved in health improvement, disease prevention and the promotion of independence⁹⁵. They also wanted pharmacists to have an increased role in providing support, information and care. This white paper outlined four main goals for the NHS: better prevention services with earlier intervention, more patient choice, more on tackling inequalities and access to community services, and more support for people with long-term conditions. A number of opportunities were mentioned for pharmacy involvement, including a desire to encourage innovative providers from the independent and voluntary sectors to work together. A number of innovative pharmacy services were mentioned within the paper, including community pharmacy screening services. In response to this consultation, the DoH published a document in February 2006

to support people with long-term conditions to self-care⁹¹. This document was a self-help guide to help organisations deliver local strategies to empower people with long-term conditions to manage their own care, with the support of doctors, nurses and pharmacists.

From the above documents, it is clear that the Government recognised the need for health and social care to work together alongside new healthcare providers, to reduce inequalities in health and to improve health. Furthermore, it is evident that the Government recognised the potential for community pharmacy to become more involved in delivering NHS services that promote self-care and improve the management of long-term conditions. The new pharmacy contract was intended to help establish this role for community pharmacy and provide a vehicle for funding and remuneration for the delivery of services.

Despite the Government legislation and policy changes within the health service environment, the extended role of the community pharmacist has not been developed, delivered and embraced by the profession as rapidly as one might expect⁴. The following section of this chapter reviews the literature to help identify factors that may be responsible for this.

2.5 Is community pharmacy the right setting for public health initiatives?

A number of factors are thought to affect the delivery of services in community pharmacy, and these have been reported in the literature. Appendix 2.1 outlines details of the studies reporting on the barriers and facilitators of delivering services within community pharmacy. The summary provided also identifies the methodologies employed and the limitations identified in each of the studies.

It should be noted that the results presented in Appendix 2.1 are limited to studies conducted within the UK. Although the barriers and facilitators identified from similar studies conducted outside the UK tend to be similar in nature, each country has different community pharmacy systems, staffing structures, remuneration and funding systems, health systems, level of support and pharmacist roles.

Ten studies have been identified that looked at factors affecting service delivery within the UK. The first of these was reported in 1995 by Mottram *et al.*²² who conducted a mail survey with a sample of community pharmacists in Liverpool to try to identify activities that represented the extended role, the extent to which they had been implemented and any constraints that had been experienced. The authors found that pharmacists had adopted activities such as health promotion and pregnancy testing that could be administered with minimal inconvenience to the traditional role, and that required little financial commitment. It was recognised that many aspects of the extended roles (such

as diagnostic testing) required considerable expense and time to set up and run; for which funding was not provided by the Government. Patients themselves were unwilling to pay for extended services from the community pharmacy, especially when they received them elsewhere at no cost.

In 1996 Tann *et al.*²¹ explored the hypothesis that the successful implementation of the wider role of the pharmacist was related to enablers in the work environment, as well as characteristics particular to 'Leading Edge Practitioners' (LEPs). Within the study LEPs were found to initiate more actions, to be more patient centred, be effective networkers, more focused on staff development, and more effective influencers. Barriers to implementation identified by the LEPs included lack of finance, time and space within the pharmacy. The authors suggested the gap between policy and practice, as well as the time lag in implementation of services could be reduced by focusing on LEPs to pilot and implement changes to pharmacy practice.

In 1998, Bell *et al.*²⁴ conducted interviews with a sample of community pharmacists in Northern Ireland to ascertain their attitudes and opinions towards the concept of pharmaceutical care and its implementation. The degree of implementation of pharmaceutical care was restricted, and although all of the pharmacists questioned believed that they were involved with pharmaceutical care, this was primarily focused on patient education about their medicines. None of the pharmacists interviewed were involved in diagnostic or monitoring services. The authors found that the pharmacists were keen to develop their role, but identified a number of barriers, which impeded this. This included lack of time, remuneration, private counselling area, access to patient medication records, low public expectation of the pharmacy profession, and lack of inter-professional relationships. Proprietors of independent pharmacies displayed a higher degree of business orientation and were particularly concerned about lack of remuneration. The facilitators identified were the opposites of the barriers, and included having a private consultation area, developing professional relationships, increasing general public perception of the pharmacy, and having access to patients' medication records. The location of the pharmacy was also considered important in developing a loyal customer base, with those pharmacists working near GP practices having particularly good relationships with GPs. In 1999, Bell *et al.*²³ investigated whether lack of time to implement pharmaceutical care was a barrier to the routine provision of extended patient care services. A self-reported work sampling study was conducted with a sample of community pharmacists in Northern Ireland to investigate how they used their time. Staffing levels with the pharmacy were found to significantly influence the pharmacists' involvement in a number of activities. The authors also found that pharmacists working in environments with a high prescription turnover devoted significantly less time to counselling patients. Almost a quarter of the pharmacists' time was dedicated to non-professional activities that could have

been performed by other members of staff. The authors concluded that improved time management and better use of trained support staff could improve the ability of pharmacists to integrate pharmaceutical care services into their routine practice.

Following a systematic review to develop questionnaire statements, Tully *et al.*²⁵ assessed the motivators and barriers to the implementation of a prescription monitoring and review service led by community pharmacists that was delivered with either the pharmacy or GP practice. The authors used a two-part Delphi survey and measured the attainment of consensus as to whether the statements represented motivators or barriers. There were high levels of agreement that providing a prescription monitoring and review service would improve both public and GP perceptions of pharmacists, help develop relationships with patients, and give pharmacists professional fulfilment. Other motivators included improving patients' clinical parameters and adherence. Key barriers to the implementation of these services included their time consuming nature, locum difficulties, the prohibitive cost of providing the service, and the unwillingness of pharmacy owners or GPs to fund services. It was also noted that services would be hindered by not having access to the patients' medical record, and if pharmacists did not have a cooperative working relationship with their local GP. The authors also discovered within the free text comments that internal rivalries, and the structure and culture of the profession may also represent barriers to the implementation of these services. They concluded that community pharmacists were motivated to participate in prescription monitoring and review schemes by a complex set of personal, professional and altruistic reasons. The authors recommend that for these services to be successful, adequate remuneration structures, internal rivalries, and the structure and culture of the profession itself would need to be considered.

In 2000, Rutter *et al.*²⁶ reported on their study to investigate community pharmacy managers' perceptions of their role in providing healthcare. Interviews were conducted with pharmacy managers within one area of a UK national pharmacy chain. Although participants shared the vision of wanting to play a more integral role in the healthcare of patients, a number of barriers and obstacles were identified. These included a lack of awareness amongst healthcare professionals and the general public regarding pharmacists' skills and attributes, the legislative restriction on pharmacists remaining on the premises, and the current remuneration structure. There was a call for professional bodies to intervene and campaign to improve the perceived role of the pharmacist. It was also recognised that empowering staff through the skill mix initiative would help to free up the pharmacists' time and provide them with more opportunities to interact with patients.

In 2001, Ruston²⁷ conducted a study to identify the characteristics of community pharmacists that influenced the adoption of an extended role in order to inform ways in which they could organise the

pharmacy business to achieve successful re-professionalisation. Ruston found that involvement was low in extended activities, which required skills not traditionally associated with community pharmacy (such as specialist screening services), whereas activities such as health promotion and advice giving were well established. The barriers identified within the study included shortage of time, insufficient remuneration, shortage of staff, and lack of contact with other healthcare professionals. Fostering levels of autonomy, promoting uptake of post-registration activities to increase knowledge, skills and confidence, establishing formal links with other healthcare professionals, and identifying ways for the pharmacist to delegate pharmacy supervision while absent from the pharmacy were some of the facilitators identified within the study. Although Ruston looked at the percentage turnover of NHS prescriptions, type of pharmacy, and provision of private consultation area, she concluded that pharmacist involvement in the extended role was more to do with the professional orientation than the settings in which they worked,

In 2001, Krska and Veitch²⁸ interviewed potential policy makers and innovative practising pharmacists in Scotland to obtain their views on a systematic approach to pharmaceutical care and the factors important in its development. Many of the participants expressed views on the need for remuneration, training, physical resources, relationships with GPs, repeat dispensing systems, and improvement to existing computer systems to facilitate pharmaceutical care. The perceptions of patients as well as other healthcare professionals were also viewed as important, and the majority considered that there was a need to educate patients on the role of the pharmacist.

Further to this, studies have examined the factors affecting service delivery in community pharmacy from the perspective of commissioners in more detail^{29, 96}. In 2003, Blenkinsopp and Celino²⁹ conducted a postal survey with pharmaceutical advisors and chief pharmacists from the Primary Care Trusts (PCTs who were the local commissioners of pharmacy services), to establish current and planned community pharmacy services, and to identify barriers for development. The majority of the PCTs were found to be commissioning additional NHS services within community pharmacies, although there was variability in the number of services commissioned. Those PCTs with less than three services were found to be less likely to employ someone to develop community pharmacy, and tended to take a fairly opportunistic approach to development with limited planning. In contrast, those commissioning more than seven services, tended to employ someone to develop community pharmacy, and took a planned approach to development. Local relationships and leadership issues tended to be the main drivers and barriers to service development. In 2006, Bradley *et al.*⁹⁶ conducted a survey to identify factors which PCTs considered to be barriers and drivers to the commissioning of services from community pharmacies. Access to funding, lack of staff capacity at the PCT and

impending reconfiguration were found to be the major barriers, whilst the new pharmacy contract and local relationships with the PCTs were found to be the main drivers. The majority of PCTs questioned were engaged with local pharmaceutical committees and local pharmacists to consider service opportunities for community pharmacy.

UK literature reviews^{4, 20} have reported challenges for developing the role of the community pharmacist, and have provided recommendations for future practice. A report commissioned by the Royal Pharmaceutical Society of Great Britain (now the Royal Pharmaceutical Society)⁴ to investigate how service delivery and organisation of community pharmacy were developing in the new environment, concluded that the challenges facing pharmacy were not unique to the profession, and mirrored those that had confronted organisations and professionals operating in the legal and banking sectors. The systematic literature review identified 324 papers of relevance, from which a number of common threads were recognised as essential to the future shape of community pharmacy. These included the need for community pharmacists to work in partnership with other healthcare professionals, the development of the skills of community pharmacy staff, changes to the process of remuneration, and the reconfiguration of the pharmacist's role to enhance professional satisfaction. In 2004, Tann and Blenkinsopp²⁰ conducted a review of policy and research findings to recommend actions that PCTs could take to increase the likelihood of success when implementing innovation in community pharmacy. The recommendations included establishing a local team to review existing pharmacy services against local needs, identifying funding for new services, identifying innovator and early adopter pharmacists, engaging and supporting local pharmacists, and recognising the need to negotiate with pharmacy chains regarding decisions about innovation as well as local pharmacists.

Further to the aforementioned papers focusing mainly on the views of pharmacists and pharmaceutical advisors, Eades *et al.*⁹⁷ conducted a systematic review of articles reporting the views of customers, as well as pharmacists, on the provision of public health activities. Customer attitudes towards community pharmacy's public health role were largely positive. It was reported that customers found the pharmacy a convenient setting and felt it appropriate for pharmacists to provide public health services. Customers viewed pharmacists as appropriate providers of public health advice but there were mixed views on the pharmacist's ability to do this; some customers perceiving pharmacists as drug experts and unsure of their expertise in providing general health advice.

However, it was also recognised that most pharmacy customers included in these studies reported that they had never been offered public health services by their pharmacist and did not expect them

to be offered. Despite this, it was revealed that satisfaction was found to be high in those who had experienced public health services⁹⁷.

The report identified that most pharmacists viewed public health services as important and part of their role. This suggests that the changing role of community pharmacy from traditional dispensing activities to greater involvement in health improvement is largely accepted, and the importance of providing these services is understood. However, the review indicates that the public health role is still considered secondary to medicine related roles, such as dispensing. Pharmacists viewed public health activities as less important than traditional roles and were less confident in providing these. Less positive views were also held by some pharmacists in relation to certain public health services; particularly services for drug misusers. These findings are consistent with those of previous systematic reviews on this topic^{3,66}.

This review recommended further pharmacist training in a number of public health services. This finding is consistent with those from previous reviews where training was found to have a positive effect on pharmacists' attitudes to participate and level of participation in public health activities^{3,98}.

A significant weakness of the studies included in the Eades *et al.* review, however, was that the majority of the research focussed on the views of the pharmacist's role; the inclusion of the views of other community pharmacy staff were either not considered or not reported on. Often the first point of contact for pharmacy customers is not the pharmacist; other pharmacy staff can play a vital role in offering public health services and carrying out initial screening⁹⁹.

2.6 Community pharmacy support staff

In the last 20 years, pharmacy has witnessed a shift in role from traditional dispensing activity to more patient-focused 'pharmaceutical care'^{100, 101}. Policy makers have sought to broaden the role of community pharmacy so that it becomes a point of primary healthcare for the local community¹⁰² and reduces the general practice workload^{86, 103, 104}. More recently, community pharmacy has been increasingly targeted as a resource for widening access and choice to primary care¹⁰⁵. Consequently, pharmacists now offer increasing levels and ranges of clinical, diagnostic and public health services. For this range of services to be sustainable and developed further, the need for pharmacists to work effectively with and delegate to, other members of the pharmacy team (often referred to collectively as 'pharmacy support staff') has been identified^{106, 107}.

These developments have prompted growing interest in optimising skill-mix within community pharmacies. Skill-mix refers to the mix of staff and the balance of different levels of responsibility¹⁰⁸. The community pharmacy team is complex and diverse¹⁰⁹ and there are no set requirements for the composition of pharmacy support staff.

Pharmacy support staff comprise of pharmacy technicians (PTs), accuracy checking technicians (ACTs), dispensing assistants (DAs) and medicines counter assistants (MCAs).

The roles of dispensary support staff have been defined in the literature and are summarised in Table 2.3.

Table 2.3 The roles of pharmacy support staff defined in literature¹⁰⁸

Staff type	Training	Role
Medicines counter assistant (MCA)	A person who has satisfactorily completed or is undertaking an accredited programme of training for work in support of the sale of non-prescription medicines, the receipt of prescriptions, the handing out of completed dispensed items and the provision of advice on health matters.	Involved in the sale of over the counter medicines, working under the supervision of a pharmacist in community pharmacy
Dispensing assistant (DA) (other common terms: dispenser, pharmacy assistant)	A person involved in a range of pharmacy support activities covered by the 2005 minimum competence requirements	Involved in a range of duties, working under the supervision of a pharmacist. Assists the pharmacist and PT with the dispensing process
Pharmacy technician (PT)	A person who holds a Pharmacy Services Scottish/National Vocational Qualification (S/NVQ) level 3 qualification or a qualification that has been previously recognised by employers as a valid qualification for pharmacy technicians.	Working under the supervision of a pharmacist. Involved in the preparation and supply of medicines and other healthcare products and the provision of guidance on taking medicines to patients
Accredited/accuracy checking technician (ACT)	Accredited/accuracy checking qualification.	Check the accuracy of dispensed items (e.g. right medication has been selected, the dosage is as prescribed)

The Government⁸⁹ and the professional body¹¹⁰ believe that effective use of pharmacy support staff and role expansion will enable pharmacists to take on extended role activities to support patients with their medicines and general health.

Pharmacy support staff have been recognised to play an integral role in the delivery of primary care, and are often the first (and commonly the only) contact community pharmacy customers make when

collecting prescriptions, seeking advice or purchasing OTC medicines⁹⁹. They also play an important role in supporting the pharmacist in their dispensing and checking roles, thus freeing up time for pharmacists to spend on clinical tasks.^{111, 112}

A small body of work has been published aimed at understanding the role and contributions of support staff in community pharmacies in the UK. Existing research is relatively small scale and much of it has focused on the role of MCAs in providing advice to patients about the purchase of appropriate OTC medicines¹⁰⁸. Other studies have explored the impact of pharmacy technicians (PTs) on pharmacists' workload¹¹³.

Early research (pre-contract change) conducted by Mullen *et al.*¹¹⁴ explored the role of support staff within community pharmacies. They found a series of distinct working patterns to be present in the community pharmacies included in the study. While some of these working patterns were efficient, they found cases where staff worked beyond their qualification level or in contrast, felt disempowered because more senior staff were reluctant to delegate work. The authors made recommendations to seek to utilise the skills of pharmacy technicians more appropriately. A more recent study, however has reported a willingness of pharmacists to delegate work to support staff¹¹⁵.

In 2008 Schafheutle *et al.*¹⁰⁸ reported on DoH commissioned research. They aimed to collect information on pharmacy support staff, develop a demographic profile of the group and their roles, obtain data on their background, education and qualifications, and explore their training aspirations and career ambitions.

The study revealed that the vast majority of support staff employed within the community pharmacies surveyed, were female and approximately one-third of them worked part-time. The authors identified two distinct groups of support staff. The first comprised mature women with few formal qualifications and no background in science. They did not necessarily plan a career in community pharmacy and were less likely to have obtained a dispensary qualification or, indeed, did not want to undertake further training. The second group were younger support staff, often with some background in science, such as GCSEs or A-Levels in scientific subjects. This group had often obtained a dispensary qualification (DA or PT) and were attracted by the opportunities for further training, formal qualifications and career progression.

The study also reported that many of the respondents were long-standing members of staff who were satisfied with their jobs and generally intended to remain with their current employers. This finding is of significant importance since it has been reported that staff attitude and ethos are known to affect both success of treatment¹¹⁶ and user's choice of where to access healthcare services¹¹⁷. Furthermore

in the author's opinion, poorly-informed staff or those with negative attitudes may limit the uptake of pharmacy services by customers, negating one of the most beneficial features of community pharmacies – that of accessibility.

There are a small number of studies reporting on pharmacy support staff's attitudes and involvement in service provision. Sheridan and Cronin, reported that support staff have a generally positive attitude towards being involved in service provision and many who are currently providing services are happy to do so¹¹⁸. A later study examined the involvement and attitudes of 1975 UK community pharmacy support staff in the delivery of services to drug misusers. The study revealed positive attitudes of support staff towards the provision of services for drug misusers, and a willingness to undertake service specific training¹¹⁹. However, of the pharmacy support staff providing services to drug misusers, less than one-quarter had undertaken training. The research did not report on the reasons for this but earlier studies have identified the following barriers to pharmacy staff training^{114,120}; insufficient time in the staff working day, no relevant courses available locally, training held during staff's free time, too far to training venue, insufficient staff level in the workplace, financial cost to employer/pharmacy department, and staff undertaking training felt isolated and unsupported, particularly when completing distance-learning training.

Significantly, research exploring the attitudes of pharmacists towards support staff has identified that pharmacists have problems delegating to appropriate members of staff¹⁴. Despite being willing to delegate parts of the dispensing process¹²¹, it has been reported that pharmacists continue to carry out tasks, which could be performed by technicians or ACTs^{19, 121-125}. Bradley *et al.*¹¹³ provide possible explanations for this in their study exploring pharmacist opinion for greater utilisation of pharmacy support staff including community pharmacists' reluctance to relinquish control and concerns about knowing and trusting the competencies of support staff.

Recommendations to policy makers and professional bodies have surfaced from various related studies; factors such as staffing levels, skill-mix and the culture of the pharmacy should be taken into consideration when extending the role and services in community pharmacy^{126, 127}.

2.7 The HLP project

The White Paper: *Pharmacy in England: building on strengths, delivering the future*⁵, described the role community pharmacy could play in supporting public health through becoming healthy living centres. Recommendations were made to increase pharmacy's contribution to promoting better health, prevention and early detection of disease and managing patients with long-term conditions.

The development of the concept of the “healthy living centres” was commissioned by the DoH to Portsmouth PCT. The project was named ‘The Healthy Living Pharmacy project’. Table 2.4 outlines the aspects considered in the project’s design¹²⁸.

Table 2.4 Supporting research employed to inform the design of the HLP model¹²⁸

Review of the national evidence for the effectiveness of community pharmacy interventions
Development of specifications, performance measures and accreditation options for the delivery of services and components included in the model
Identification of indicators that may be employed to differentiate progress within the model
Identification of outcome criteria that may be employed to evaluate the effectiveness of the model
Exploration of the needs, expectations and perceptions of the profession, other healthcare professionals and the public have of community pharmacy
Understanding the barriers to change and appropriate facilitators
Identifying appropriate specifications for premises and a comprehensive accreditation framework

The HLP model is based on a tiered framework that is designed to quality assure the delivery of specific services to meet the local public health demands². It consists of three levels of advancing service provision, each level underpinned by several key principles. Firstly, the services are tailored to local health needs with the aim of reducing health inequalities by improving health and wellbeing outcomes in their communities. Secondly, a HLP builds on existing core pharmacy services (Essential and Advanced) with a series of Enhanced Services. Finally, the delivery of services is supported by three enablers: workforce development, with the introduction of health living champions (HLCs); premises fit for purpose, with a dedicated health promotion area; and local stakeholder engagement, including local GPs and members of the public.

NHS Portsmouth arranged a stakeholder engagement event in August 2009 designed to involve all the community pharmacy teams across the city in the development of the HLP initiative. Attendees were encouraged to contribute their ideas of ‘What a HLP would look like’ and which health and well-being services would be accessible to the customers using these pharmacies. An informed model for HLP was launched in December 2009, through publication of a local HLP prospectus³².

Community pharmacies were invited to apply to be Level 1 HLPs, which required participation in the following services: wellbeing and self-care including active health promotion campaigns, optimising medicines including delivering targeted respiratory Medicines Usage Reviews (MURs) and providing enhanced services including smoking cessation and at least one other enhanced service.

The full accreditation criteria are detailed in Table 2.5.

Table 2.5 Accreditation criteria Level 1 HLP¹²⁹

Criteria: A HLP
<ul style="list-style-type: none"> Consistently delivers a range of health and well-being services to a high quality. Every interaction in the pharmacy should be seen as an opportunity for a health promoting intervention, ‘making every contact count’.
<ul style="list-style-type: none"> Has achieved defined quality criteria requirements and met productivity targets linked to local health needs e.g. the number of successful Stop Smoking quits at 4 weeks
<ul style="list-style-type: none"> Has a team that proactively promotes health and well-being and proactively offers brief advice in a range of health issues such as smoking, physical activity, sexual health, healthy eating and alcohol.
<ul style="list-style-type: none"> Has a minimum of one Health Champion (also known as Healthy Living Champion), who has achieved the Understanding Health Improvement Level 2 Royal Society of Public Health award. The HLC is proactive in promoting health and wellbeing messages, signposts the public to appropriate services and enables and supports the team in demonstrating the ‘ethos’ of an HLP.
<ul style="list-style-type: none"> Has premises that are fit for purpose for promoting health and wellbeing messages as well as delivering commissioned services. The consultation room should be equipped appropriately depending on the services offered.
<ul style="list-style-type: none"> Engages with the local community and other health and social care professionals
<ul style="list-style-type: none"> Is recognisable to the public through the display of the HLP logo
<ul style="list-style-type: none"> Leadership training undertaken by an individual involved in a leadership or management position so that they can support the development of the pharmacy team and change from providing reactive to proactive health interventions.

Comprising the ‘workforce development’ enabler, a non-pharmacist member of the pharmacy team, must become a qualified Healthy Living Champion (HLC). This is an individual with an interest in the area of public health and a commitment to the HLP concept; they are required to undertake an attendance-based qualification in understanding health improvement, as accredited by the Royal Society for Public Health¹³⁰. The HLC has a role in cascading information about health and wellbeing onto the rest of the pharmacy team and signposting individuals to appropriate services and resources¹³¹.

Further to this a minimum of one member of the pharmacy team is required to attend a leadership training course provided by the PCT, which involves elements of effective time management, and development of delegation and consultation skills.

2.8 Demography of Portsmouth

Portsmouth is a port city on the south coast of England. It holds a population of approximately 207,000 people. This equates to 5,100 people living in every square kilometre, which is eleven times more than the regional average. The city is predominantly white in terms of ethnicity, with 84% of the population belonging to this ethnic group.¹³²

The following data were extracted from the 2012 Health Profile of Portsmouth¹³³,

- The health of people is generally worse than the England average. Deprivation is higher than average and about 9,200 children live in poverty.
- Life expectancy for men is lower than the England average. Life expectancy for men is 10.8 years lower and 6.1 years lower for women in the most deprived areas of Portsmouth than in the least deprived areas. Approximately 45% of this difference is due to vascular disease- a major priority in the city.
- Levels of teenage pregnancy and smoking in pregnancy are worse than the England average.
- More than 1,300 people are problem drug users.
- Estimated levels of adult 'healthy eating' and smoking are worse than the England average.
- Rates of sexually transmitted infections, smoking related deaths and hospital stays for alcohol related harm are worse than the England average.
- Priorities in Portsmouth include reducing harm caused by alcohol, reducing smoking, teenage pregnancy, substance misuse and tackling health inequalities.

Faced with these significant public health challenges, health commissioners in Portsmouth saw that community pharmacists could play a larger role in promoting healthy living and improving delivery of related services³².

At the time of introducing the HLP project, there were 32 community pharmacies in Portsmouth¹³⁴. The breakdown of these pharmacies include 19 multiples (greater than 200 outlets), 1 large chain (more than 20 outlets but less than 200), 6 belonging to a small chain of pharmacies (20 outlets or less but more than 5) and 6 independent contractors (5 outlets or less). These figures reflect the community pharmacy market makeup within Great Britain¹³⁵.

Pharmacy contractors are required to provide the essential services set in the NHS Pharmaceutical and Local Pharmaceutical Regulation 2013, and may choose to provide one or more of the advanced services set out in the Pharmaceutical Services Advanced and Enhanced Services Directions 2013. The 2013 directions also set out the enhanced services, which may be commissioned from pharmacy contractors¹⁸.

Before 1st April 2013, Primary Care Trusts (PCTs) commissioned enhanced services from pharmacy contractors in line with the needs of their population. From 1st April 2013, those public health enhanced services previously commissioned by PCTs transferred to local authorities. The remaining enhanced services may be commissioned by the NHS Commissioning Board, also known as NHS England.

In 2009, at the time of the HLP pilot, the commissioning of pharmacy services was managed by Portsmouth PCT. Services were commissioned from community pharmacies depending on the health need within the local area; and the capability and reliability of the pharmacy to deliver the services. Portsmouth PCT agreed to support the HLP pilot, committing to the following³² :

- Support (with the provision of back-fill and co-facilitating) members of the pharmacy to become HLCs
- Providing training for the delivery of the smoking cessation scheme
- Providing leadership training for pharmacy managers and pharmacists on developing the workforce and primary care management
- Providing training on delivering medicines reviews specific to patients with respiratory disease
- Delivering regular communication through HLP newsletters
- Recognising community pharmacy's achievements through the HLP project; including accreditation awards and sharing case studies of good practice
- Engaging the public and other healthcare professionals in promoting the project.

2.9 Evaluation of the HLP project

In order to explore the success or failure of the HLP initiative as a sustainable model for the delivery of public health services within community pharmacies, this project investigated the following broad research questions:

- What were the experiences and views of community pharmacy staff on the implementation process of the HLP project within the community pharmacies in Portsmouth?
- As perceived by the community pharmacy staff, what were the major influences and specific factors associated with implementing the HLP project within the community pharmacies in Portsmouth?
- As perceived by the community pharmacy staff, can an evidence-based intervention contribute to the sustained involvement of community pharmacies in the HLP project?
- As perceived by the community pharmacy staff, can the HLP project facilitate the sustained involvement of community pharmacies in activities to promote the health of their local communities?

Chapter 3 : The implementation of the HLP project in Portsmouth's community pharmacies

3.1 Introduction

This chapter begins by describing the reasons for the need to evaluate the HLP project. The literature discussing the implementation of health innovations in various settings is then explored and contextualised in relation to the implementation of the HLP project. Through the use of semi-structured interviews, the implementation of the HLP project is investigated from the perspective of various pharmacy staff. These data are then analysed with reference to the theoretical models of implementing innovation in healthcare settings.

The process of evaluation is guided by the Generic Implementation Framework (GIF)¹³⁶, an overarching framework that collates and illustrates the core implementation concepts. Specific models or theories are employed to tailor the GIF to evaluate each concept. This chapter provides further details of the GIF and outlines the models or theories selected to evaluate each concept.

3.1.1 The need to evaluate the HLP project

The shift in community pharmacy services has resulted because of factors such as increased prevalence of drug-related morbidity and mortality¹³⁷, escalating costs of healthcare delivery due to demographic changes and technological advancements and increased customers' demands, preferences and expectations¹³⁸, as well as the subsequent healthcare policy to address these issues. The new roles for pharmacists have evolved in parallel with evidence-based medicine¹³⁹; further to this there is a significant body of evidence that demonstrates that medicine use in practice is less than optimal to the detriment of patient outcomes¹⁴⁰⁻¹⁴². As new professional services and practices evolve, there is a need to demonstrate evidence of their benefit and to identify strategies to promote their embedding in every day practice^{138, 139, 143}.

Often what is needed is local evidence that demonstrates the need for a new service or different method of service delivery^{138, 144, 145}. Such evidence is provided through pharmacy practice research which can inform policy through demonstrating the value or feasibility of the potential new roles and services^{144, 146-148}. This places pharmacy practice research as a driver for establishing new pharmacy services and innovative delivery approaches by justifying the need, effectiveness and the value of these innovative practices^{138, 144, 148}. Therefore, pharmacy practice research is essential to the

advancement of the pharmacy profession and provides the evidence of benefit for new and existing practice^{143, 144, 147}.

The 2013 Royal Pharmaceutical Society (RPS) report, *Now or never: Shaping pharmacy for the future*³⁹, concluded that pharmacy faced a significant challenge in making a case (and hence being commissioned and funded) for the provision of a greater degree of patient services aimed at improving the use of medicines and helping address wide NHS-wide service problems. The report went on to state, that it was vital that pharmacy as a profession found clear and accessible ways of expressing what it can and should be giving by way of additional patient services.

In line with this, recent figures from the Health and Social Care Information Centre show that the number of local enhanced services provided by community pharmacies has been falling since the start of 2010, sharply reversing an earlier upward trend¹⁴⁹. This may suggest that community pharmacy is not fully capitalising on its highly-trained professional workforce, local and accessible premises, and understanding of local communities in offering commissioners a range of pharmaceutical services that can contribute to the solution for the wider NHS concerns. Alternatively, it has also been proposed that since the change in the commissioning structure of local enhanced services from Primary Care Trust (PCT) to Clinical Commissioning Groups (CCG) and Local Authorities (LA), the complexity of commissioning has been more complex and can act as a barrier for the integration of community pharmacy services alongside general practice¹⁵⁰.

The HLP project offers an innovative framework for the delivery of additional services, including disease prevention services and the promotion of healthy living. An evaluation of this framework is necessary to identify its ability to move the profession forward towards a future focused on care delivery, and influencing care commissioners, as recommended by the aforementioned RPS report³⁹.

3.1.2 The implementation of the HLP project

The HLP project was developed in Portsmouth in 2009 with support from the DoH, the Director of Public Health for Portsmouth and the Local Portsmouth Pharmaceutical Committee. A research team, based at Portsmouth University, conducted a systematic analysis of international published research on the potential for and impact of delivery of HLP services, which informed the initial Portsmouth HLP framework. This work allowed research evidence to inform the services to be offered in the framework and how these services could be delivered².

The implementation of the HLP project included appropriately up-skilling members of the pharmacy workforce and promoting the initiative to both the public and other health providers. An overview of the Portsmouth HLP implementation strategy was published in a Portsmouth HLP prospectus³².

3.1.3 Defining professional services in community pharmacy

The transition of community pharmacy practice from a focus on dispensing to one that embraces professional pharmacy service delivery is complex¹⁵¹. The area of implementing innovative health services has been researched to identify optimal implementation strategies that may be considered to inform future design and commissioning of professional pharmacy services.

Moullin *et al.* argued that in order to fully appreciate the factors which contribute to the successful implementation of a pharmacy service, a broader definition of what constitutes a professional pharmacy service is needed, that acknowledges the wider role that community pharmacies play in healthcare¹⁵². The following definition was proposed:

A professional pharmacy service has been defined as an action or a set of actions undertaken in or organised by a pharmacy, delivered by a pharmacist or other health practitioner, who applies their specialised health knowledge personally or via an intermediary, with a patient/client, population or other health professional, to optimise the process of care, with the aim to improve health outcomes and the value of healthcare¹⁵².

This definition contributes to a holistic understanding of the role and value of community pharmacies within a healthcare system, both working as an independent entity and as a collective network. Furthermore, applying this definition facilitates the recognition of community pharmacy professional services as being diverse in their design and complex in their implementation. Significantly, this definition acknowledges that a professional pharmacy service is not restricted to being *delivered by a pharmacist*, but also may be performed by *other health practitioners*, thereby recognising the role of non-pharmacist members of the pharmacy team. Moreover, a pharmacy service must involve the application of *specialised health knowledge*, which appreciates the requirement for appropriate training and education^{153, 154}. Finally, the definition asserts that an interaction takes place either *personally or via an intermediary*; in either case this highlights the necessity to be able to communicate effectively with a wide spectrum of people in order to deliver community pharmacy services.

Since the activities included in the HLP project require specialist health knowledge, interaction with customers and are delivered by any member of the pharmacy team, it can be concluded that those

services delivered through the HLP project, can be classified as pharmacy services. Thus, in the pursuing sections of this chapter, the HLP project will be discussed in the context of an innovation within a healthcare setting.

3.1.4 Innovation in healthcare

Innovation is defined as the intentional introduction and application of ideas, processes, technologies, medicines, and services¹⁵⁵ that are perceived to be 'new' to the relevant unit of adoption¹⁵⁶. Adoption here is defined as the decision to make use of an innovation by individuals, groups or organisations¹⁵⁶. Implementation relates to putting innovations into routine practice^{156, 157}. It has been argued that adoption of innovation requires changes in behaviours and characteristics, on the part of the individual or organisation, should external changes (either individual or organisational) be responsible for driving the process¹⁵⁸.

Innovation research has three key elements: context, content and process^{159, 160}. Context is further categorised into elements which are internal and those which are external. Internal context relates to organisational conditions 'external' to the individual¹⁶⁰, for example, motivation for change and availability of resources. Conditions outside the organisation are referred to as 'external contexts'^{155, 160}; these may include public demand and Government policies. Content refers to identifying features of innovations that are likely to be associated with the innovation adoption decision by the adopting unit, for example the cost of introducing the innovation and the potential training required¹⁶⁰. The phases through which a system or individual adopts an innovation and the key players involved, relates to the 'process'^{160, 161}.

It has been proposed that an understanding and appropriate management of these key elements is critical to the successful implementation of an innovation¹⁶². Further to this, it has been reported that healthcare practitioners' failure to successfully adopt innovation is commonly linked to poor consideration of contextual and process dimensions of practice change^{155, 163}. The use of theoretical models can be used as implementation frameworks to identify the key elements of innovation adoption that should be considered.

3.1.5 Models and frameworks for change

It is widely recognised that resistance to change is a common phenomenon¹⁶⁴. Numerous interventions found to be viable in health services research studies fail to translate into meaningful patient care outcomes. In fact, it has been reported that two-thirds of organisations' efforts to implement change fail¹⁶⁵. Barriers to implementation may arise at multiple levels of healthcare delivery; the patient level, the provider team or group level, the organisational level, or the market/policy level¹⁶⁶. Health services researchers are increasingly recognising that as well as evaluating the summative end point health outcomes, research into the formative evaluation to assess the extent to which implementation is effective in a specific context has a critical role¹⁶⁷. In recognising the factors contributing to successful implementation, it has been argued that intervention benefits can be optimised, sustainability of the intervention can be prolonged, and dissemination of findings into other context can be enhanced¹⁶⁸.

Many implementation theories to promote effective implementation have been described in the literature. The application of these theoretical models in innovation adoption research allows researchers to systematically collect, analyse and/or interpret appropriate data in evaluating the adoption of innovation¹⁶¹.

A comparison of the published models exposes similarity, however there is not one single model that encompasses all of the core concepts of the implementation process. Moullin *et al.*'s systematic review of implementation frameworks of innovations in healthcare¹³⁶ identified that numerous and potentially disparate implementation and knowledge translation frameworks are being developed and used. The differences in the frameworks included disparate terminology and classification concepts. With this, it was realised that implementation frameworks vary in their orientation and that it is plausible, by design or otherwise, that not all frameworks targeting a particular innovation cover all implementation concepts. However, it was recognised that consistent elements may be distinguished. Moullin *et al.*¹³⁶ concluded that implementation may be summarised as involving: (1) an innovation, and (2) a process, influenced across (3) contextual domains/levels by (4) factors (5) strategies (6) evaluations. These concepts were defined as the following:

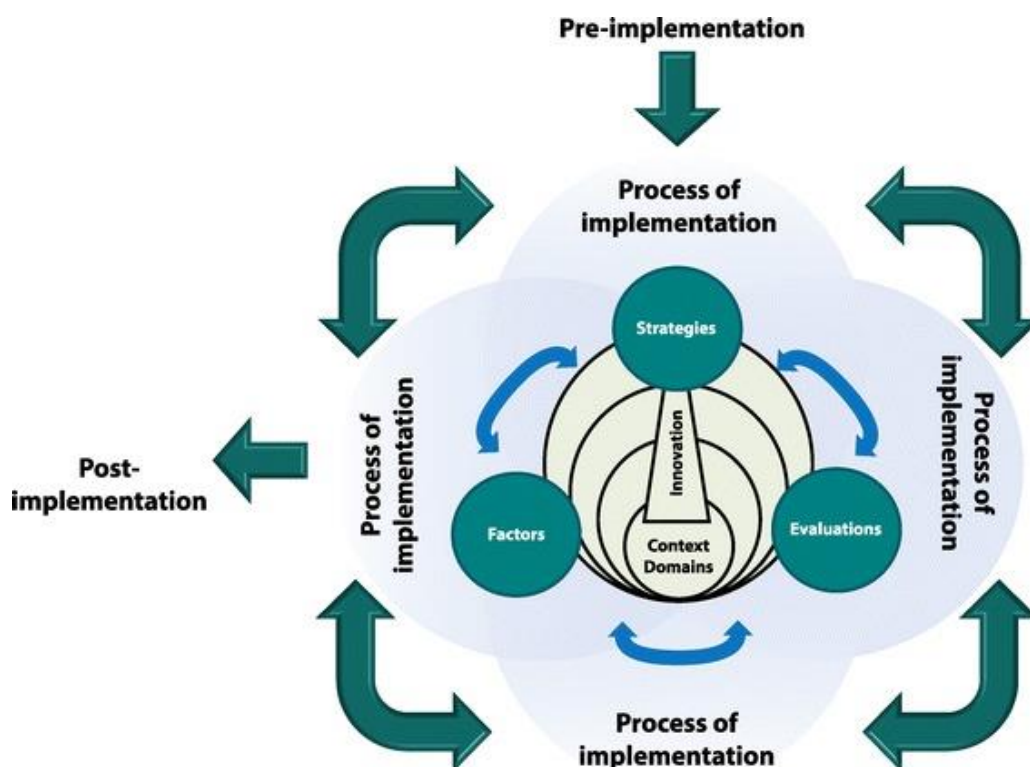
- *Process of implementation* – This was recognised to be a process divided into a series of stages or steps (e.g. exploration, preparation, operation, sustainability)
- *Contextual domains* – Defined as groups or levels of influence and identified as the constituents within the factors, strategies and evaluations. This means that there are sets of factors that have an influence at various levels of the implementation process; and

specific strategies and evaluations can be applied to each level accordingly. (e.g. intervention characteristics, outer setting, inner setting, characteristics of the individuals involved)

- *Three elements* – Throughout each stage of the implementation process, three fundamental elements were considered:
 1. *Factors*: Variable that may affect the implementation process. Also termed facilitators and barriers or determinants of practice.
 2. *Strategies*: Targeted efforts (method, technique or activity) designed to enhance the use and integration of an innovation into routine practice.
 3. *Evaluations*: Measures of the effects of implementation including process evaluation of course and factors; formative evaluation of strategies, and summative evaluation of implementation and innovation outcomes.

Moullin et al.¹³⁶ proposed a Generic Implementation Framework (GIF) to depict the core concepts of implementation. (Figure 3.1)

Figure 3.1 Generic Implementation Framework (GIF)¹³⁶



The GIF endeavours to serve as a general, overarching framework that groups and delineates the principal implementation concepts, so that it may be applied across disciplines. Illustrated through the use of double arrows and overlapping circles, the authors point out the non-linear and recursive nature of the implementation process. Further, the model recognises that the implementation process can be split up into various stages and/or steps. The focal point of the model is the innovation to be implemented and encompassing the innovation are the contextual domains, which can affect the process of implementation. At each stage and for each domain of the implementation process, there are factors, strategies and evaluations that need to be considered due to their potential impact on the course of implementation.

The authors point out that the GIF is not a new framework, yet rather a composite of what is represented in most, if not all, other frameworks and that employing the GIF acts as checklist to guarantee that the specific implementation framework(s) selected encompass the core implementation concepts.

3.1.6 Rational for use of the Generic Implementation Framework (GIF)

The GIF has been employed in this study since its skeletal structure permits the adoption of multiple theories to facilitate and cater for the investigation of each implementation element¹³⁶. Considering that the pharmacy practice literature is yet to report on the specific *factors, strategies* and *evaluations* encountered during the various stages of the implementation process of an innovation, the GIF serves as a model to capture and map this data in an articulate format.

To tailor the GIF to evaluate the implementation of the HLP project, it is therefore necessary to identify implementation theory that is aligned with research in pharmacy practice.

In the following sections, the implementation of the HLP project is discussed with reference to the GIF. The *processes of implementation, domains, factors, strategies* and *evaluations* cited in the literature that are most relevant to innovation within pharmacy practice, will be explored. Specific detail of findings from studies investigating the implementation of interventions within community pharmacy will be included to add further context.

Table 3.1 outlines the frameworks and models relating to the various concepts included in the GIF that will be described in the following sections.

Table 3.1 The frameworks and models to be considered in evaluating the implementation of the HLP project

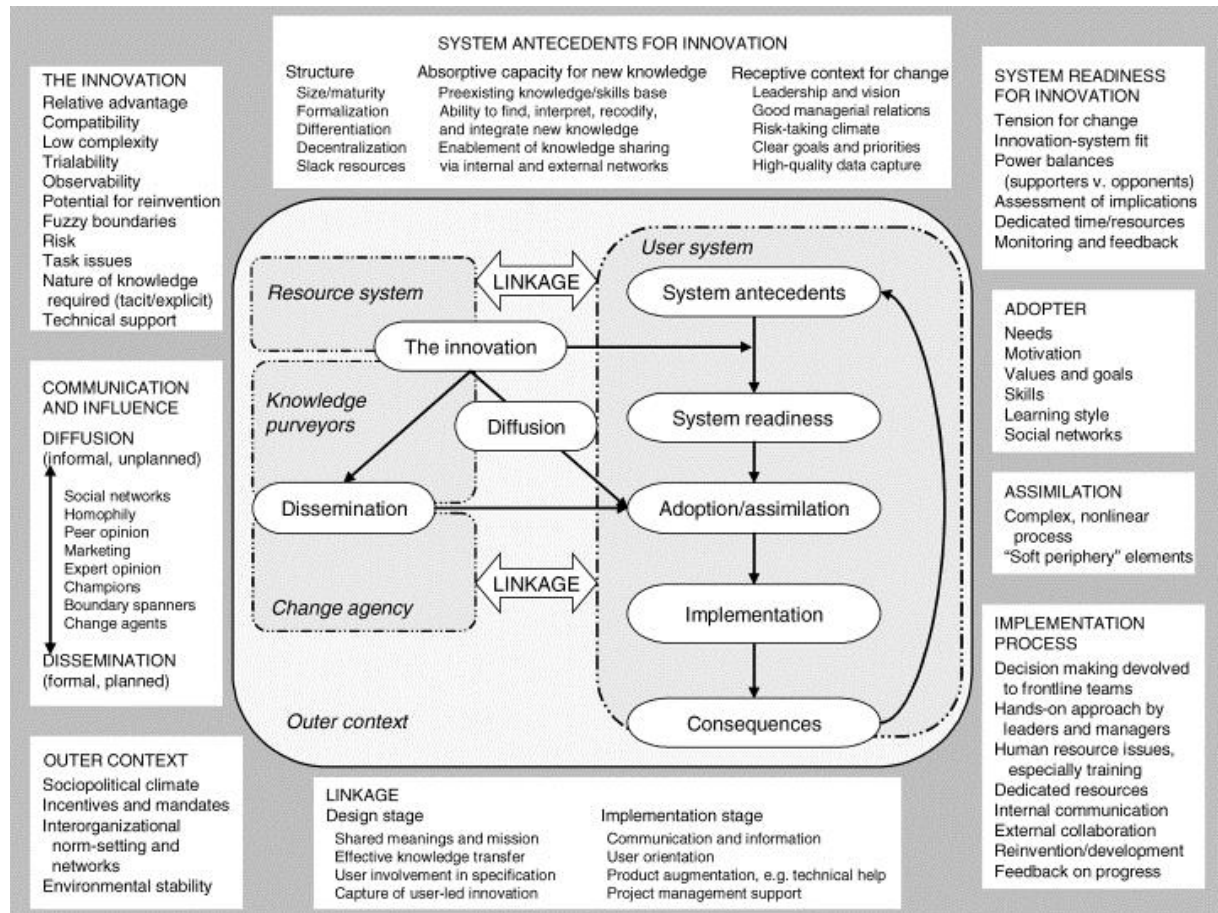
GIF concept	Framework to be considered for evaluating the implementation of the HLP project
Process of implementation (i.e. stages in the implementation process)	Greenhalgh <i>et al.</i> ¹⁶⁹ , Moullin <i>et al.</i> ¹³⁶
Contextual domains	Damshroder <i>et al.</i> ¹⁷⁰
Factors	Damshroder <i>et al.</i> ¹⁷⁰ , Royal Pharmaceutical Society ³⁹
Strategies	Powell <i>et al.</i> ¹⁷¹ , Roberts <i>et al.</i> ¹⁷²
Evaluations	Procter <i>et al.</i> ¹⁷³

3.1.6.1 The Generic Implementation Framework (GIF) processes of implementation and domains

The process of implementation and domains has been discussed by Greenhalgh *et al.*'s systematic review of innovations in service organisations¹⁶⁹. In this report, Greenhalgh *et al.* proposed and articulated an evidence-based model for considering the diffusion of innovations in health service organisations (Figure 3.2)

The model recognised many of the cited themes in the literature such as the detailed description of innovation attributes that may contribute in identifying whether successful implementation is likely; the significant role of social influence and the networks through which it operates; the complexity and unpredictability of the process of implementation; organisational attributes that promote or discourage innovation; and the challenging-to-research process of assimilation and implementation as routine.

Figure 3.2 Conceptual model for considering the determinants of diffusion, dissemination, and implementation of innovations in health service delivery and organisation, based on a systematic review of empirical research studies¹⁶⁹



Greenhalgh *et al.*¹⁶⁹ included the implementation stages within their conceptual framework (*diffusion and dissemination, adoption/assimilation, and implementation*) and detailed the implementation activities which take place at each stage. However, there are stages identified in further studies which are not alluded to in the Greenhalgh *et al.* model. The pre-implementation stage of 'development', (which includes innovation creation, refinement and impact evaluation)¹⁷⁴; and post-implementation stage of 'sustainability'¹⁷⁵. Moreover, based on a systematic review of implementation frameworks of innovations in healthcare¹³⁶, Moullin *et al.*¹³⁶ proposed that *diffusion* and *dissemination* be combined under the heading of 'communication' and described this stage as the process by which people share information about a new innovation to increase awareness. They also suggested that the *adoption/assimilation* phase be divided into two sub-stages of 'exploration', which details the innovation-decision process, whereby the end-user(s) appraise the innovation to decide whether to adopt; and 'preparation' which describes the course of preparation prior to use. *Implementation* or *operation* refers to the stage whereby the innovation is in use and is in the process of being integrated into routine practice through active and planned approaches.

The implementation stages that were considered in evaluating the implementation of HLP are those initially proposed by Greenhalgh *et al.* and since adapted by Moullin *et al.* for use within a healthcare context (Table 3.2).

Table 3.2 Stages and activities of the implementation process as articulated by Moulin et al.¹³⁶

Stages of implementation	
Development	This stage comprises of identification or creation, synthesis, refinement of an innovation through knowledge transfer.
Communication	The process by which people learn and share information about a new innovation to increase awareness. This may occur through diffusion, a passive untargeted and unplanned means or through dissemination using planned strategies via determined channels.
Exploration	The innovation-decision process whereby the end-user(s) appraise the innovation concluding with a decision to either accept/adopt or reject. Involves progression through awareness, knowledge, persuasion, opinion and decision regarding the innovation. Activities include assessment of relative advantage, compatibility, community, complexity, risk, augmentation/support, task issues and knowledge. A decision whether or not to adopt is then made.
Preparation	The course of preparation (this may apply to the innovation, individuals, organisation, local environment and external system) prior to innovation use. Activities include: planning procedures, organising supporting conditions, training, community awareness and recruitment, team communication, staff arrangements, rearrange workflow, research requirements, assign leader.
Operation	Innovation is in use and is in the process of being integrated into routine practice through active and planned approaches. Activities include: improvement, adaptation, monitoring, goal setting, ongoing training, integration tactics, teamwork, staffing, maintain customer demand, modification of plans and procedures.
Sustainability	Process of maintaining the innovation through continued use, integrated as routine practice and yielding persistent benefits. Activities include: obtaining feedback adaptation/reinvention, seeking diverse funding streams, communication, and improvement.

Since the publication of Greenhalgh *et al.*'s conceptual model, it has been cited in multiple implementation science studies. Damschroder *et al.*¹⁷⁰, attempted to establish a Consolidated Framework for Implementation Research (CFIR). The CFIR specifies a list of factors within general domains that are believed to influence implementation based on the strength of their support in the literature. Damschroder *et al.*'s CFIR provided further theoretical and practical support for the conceptual model proposed by Greenhalgh *et al.* Further, through their findings, Damschroder *et al.*

were able to categorise and refine the content of the Greenhalgh *et al.*'s conceptual model to emphasise the domains and factors that reflect a professional consensus within healthcare settings.

The CFIR is composed of five major domains: *intervention characteristics, outer setting, inner setting, characteristics of the individuals involved in implementation, and the process by which implementation is accomplished*. The authors point out that these domains interact in complex ways to influence the effectiveness of the implementation process within healthcare settings.

The first major domain relates to the characteristics of the intervention. Damschroder *et al.* recognised that when interventions are introduced to a setting, they require adaptation in order to promote acceptance by individuals who will be affected and a strategy to engage individuals is needed to enhance their implementation. The authors noted that interventions within healthcare are often complex and multi-faceted, with many interacting components, such is the case of the HLP project, which comprises of a diverse accreditation criteria (service delivery, workforce development and engagement with local stakeholders).

The CFIR distinguishes between *inner and outer settings*. The outer settings are those features of the external environment that might influence implementation. This could include the economic, political, and social context within which an organisation resides. Since the HLP project is a Department of Health commissioned programme, the national and local commissioning setup and local health inequalities pose significant external influences. The inner setting includes features of the implementing organisation that might influence implementation, including the structural, political and cultural contexts through which the implementation process will proceed. The inner contexts therefore, represents many of the organisational structures, cultures, inputs and resources, and processes and practices that characterise everyday practice and influence implementation, these may vary from one pharmacy to the next.

Importantly, it was noted that it can often be challenging to differentiate between inner and outer settings and this will be dependent upon the context of the implementation.

The fourth major domain is the individuals involved with the intervention and/or implementation process. The CFIR acknowledges the influence of individuals' contribution, recognising that they are carriers of cultural, organisational, professional and individual mind-sets, norms, interests and affiliations. In this study, the influence of the community pharmacy staff with regards to implementation of the HLP project will be investigated.

The implementation process is the final domain whereby it has been recognised that successful implementation usually requires an active change process to achieve individual and organisational

level use of the intervention as designed. This domain therefore includes strategies or tactics that might influence implementation of the HLP project (e.g. engaging appropriate individuals in the implementation process and use of the project)

The CFIR has since been utilised in pharmacy practice research to map implementation factors over the various stages of implementation^{176, 177}. In investigating the implementation of the HLP project, the CFIR five domains were used *within the GIF* to provide a pragmatic structure that unifies key factors from published implementation theories.

3.1.6.2 The Generic Implementation Framework (GIF) factors

From published implementation theories, Damschroder *et al.* identified a series of significant factors that may be encountered during various levels of implementation; these were proposed to be essential in supporting the five domains. Many of these factors were described in Greenhalgh *et al.*'s conceptual model; however the CFIR organises the factors into the five domains and also includes factors supported in related research.

These factors have been cited in recent work examining the implementation of complex health interventions within community pharmacy^{177, 178} and will be utilised within the GIF to provide a theoretical framework in understanding the factors that may influence the process of implementation of the HLP project. Table 3.3 details the CFIR factors¹⁷⁰.

Table 3.3 The Consolidated Framework for Implement Research (CFIR) factors identified to influence the successful implementation of an intervention¹⁷⁰.

Domain 1: Intervention – characteristics of the intervention itself
<ul style="list-style-type: none"> • Intervention source: Perception about whether intervention is externally or internally developed • Evidence Strength & Quality: Perception of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes • Relative Advantage: Perception of the advantage of implementing the intervention versus an alternative solution • Adaptability: Degree to which an intervention can be tailored to meet the needs of an organisation • Trialability: Ability to test the intervention on a small scale, and to reverse course if warranted • Complexity: Perceived difficulty of implementation • Design Quality & Packaging: Perceived excellence in how the intervention is bundled and presented • Cost: Cost of the intervention and costs associated with implementing the intervention
Domain 2: Outer Setting – factors external to the organisation
<ul style="list-style-type: none"> • Patient Needs & Resources: Extent to which patient needs are accurately known and prioritised by the organisation • Cosmopolitanism: Level of connectedness and networks with other organisations • Peer Pressure: Competitive pressure to implement an intervention • External Policy & Incentives: external strategies to spread interventions, including policy and regulations, mandates, recommendations and guidelines, etc.
Domain 3: Inner Setting - characteristics of the organisation implementing the intervention
<ul style="list-style-type: none"> • Structural characteristics: Age, maturity, or size of the organisation • Networks & Communication: Nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organisation • Culture: Norms, values, and basic assumptions of a given organisation • Implementation climate: Relative priority of implementing the current intervention versus other competing priorities • Readiness for Implementation: Access to resources, knowledge, and information about the intervention
Domain 4: Individuals - characteristics of the individuals involved in implementation
<ul style="list-style-type: none"> • Knowledge and Beliefs about Intervention: Individual staff knowledge and attitude towards the intervention • Self-efficacy: An individual's belief in their capabilities to execute the implementation • Individual State of Change: Phase an individual is in as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention • Individual Identification with Organisation: Individuals' perception of the organisation and their relationship and degree of commitment to the organisation • Other Personal Attributes: Personal traits such as tolerance of ambiguity, intellectual ability, motivation, etc.
Domain 5: Process – processes of implementation
<ul style="list-style-type: none"> • Planning: Planning for the implementation • Engaging: Engaging individuals in implementation processes • Executing: Executing the implementation plan • Reflecting & Evaluating: Reflecting and evaluating the progress of implementation

Importantly, there is similarity between those factors discussed in the CFIR and the factors identified to affect the implementation of innovation in community pharmacy. These factors have been well documented and were summarised in the 2013 RPS report of the Commission On Future Models Of

Care Delivered Through Pharmacy³⁹. The report discussed the reported barriers to implementing innovation and new models of care involving pharmacy (Table 3.4); pharmacy being marginalised within the NHS affects can be seen as their level of connectedness and networks with other organisations (cosmopolitanism); poor public understanding, lack of leadership and inadequate commissioning are linked to the external policy and incentives responsible for developing strategies to increase awareness of interventions and the failure of the profession to influence such policies. The lack of a structured development pathway and profession isolation may be linked to inner and outer settings as well as individual characteristics such as the individual state of change, the implementation climate and external incentives.

Table 3.4 RPS reported barriers to implementing innovation in community pharmacy³⁹

Reported barrier
Pharmacy is marginalised within the NHS
Poor public understanding of the role of pharmacists
Pharmacy lacks leaderships and consistent vision
Pharmacy needs a more structured development pathway
Community pharmacists are often professionally isolated
Pharmacy services are not well commissioned

3.1.6.3 The Generic Implementation Framework (GIF) strategies

To overcome recognised barriers to the implementation process, researchers have proposed theorised facilitators as well as reporting on tested strategies employed to enhance implementation. In the area of community pharmacy, the concept of developing strategies to facilitate change is a less well-developed area. Roberts *et al.* conducted a review of the literature to investigate the specific facilitators of change in the implementation of community pharmacy services¹⁷².

The identified facilitators were split into two categories: individual and organisations. (Table 3.5)

Table 3.5 Facilitators of change in community pharmacy¹⁷²

Individual facilitators	
<ul style="list-style-type: none"> • Pharmacist competence • Education and training for pharmacy assistants • Education and training for pharmacists • Communication skills • Motivation • Leadership skills 	<ul style="list-style-type: none"> • Professional satisfaction • Pharmacists' knowledge of community pharmacy services • Pharmacists' attitudes towards services • Pharmacists' confidence in ability to provide services • Autonomy • Attitude of pharmacy staff
Organisational facilitators	
<ul style="list-style-type: none"> • Physical environment e.g. adequate space/privacy and workflow • Culture of the pharmacy • Remuneration/incentives • Sufficient and qualified staff/manpower • Use of pharmacy technicians • Delegation of tasks • Innovative practice orientation • Customer demands/expectations • Relationships with doctors • Equipment and technology e.g. computers • Access to patient information/records • Documentation system • Profile within local community • Attention for special patient groups • Use of protocols 	<ul style="list-style-type: none"> • Interaction with other pharmacists • Support for management • Access to reference literature • Pharmacist-customer relationship • Marketing • Support from professional organisations and/or Government • Low script volume • Legislation requiring or supporting provision of services • Attitude/perception of doctors • Attitude/perception of customers • Examples from leading practitioners • External advisors or mentors • Evidence of benefits of services

Further to this, Powell *et al.*¹⁷⁹ presented a list of implementation enabling strategies based on a review of the healthcare literature which has since been refined following expert recommendations¹⁷¹. The compilation is grouped into six key implementation processes: planning, educating, financing, restructuring, managing quality, and attending to the policy context. The authors suggest that their findings can serve as a reference to stakeholders who wish to implement clinical innovations in healthcare. The facilitators identified by Roberts *et al.* resonate strongly with Powell *et al.*'s findings, however they were not mapped to the specific phases of the implementation process, as articulated by Powell *et al.*

Roberts *et al.* also identified that despite recognition of these facilitators, researchers and commissioners have continued to focus on remuneration as the single most important factor in introducing innovation in community pharmacy with little consideration to other factors. Furthermore, the authors highlight that a large majority of studies reporting on the implementation process of community pharmacy services have involved 'leading edge' practitioners (also termed

‘early adopters’), giving rise to the concept that these innovative pharmacists may themselves be facilitators.

The literature which discusses designing strategies to achieve these facilitators acknowledges that implementing pharmaceutical care programmes that attempt to address individual factors in isolation will not be successful¹⁸⁰. Change management research supports this notion in recognising that an understanding of social trends and forces affecting an organisation is essential in facilitating effective change management¹⁸¹.

Powell *et al.*¹⁷⁹ list of implementation enabling strategies was used to aid in recognising and understanding the strategies employed to overcome barriers encountered during the implementation process of the HLP project.

3.1.6.4 The Generic Implementation Framework (GIF) evaluations

The topic of how to conceptualise and evaluate successful implementation is one that has been discussed in the literature^{182, 183}. It has been reported that studies of implementation use widely varying approaches to measure how well an innovation is implemented. Some infer implementation success by measuring clinical outcomes at the customer or patient level, while others measure the actual targets of implementation, quantifying for example the desired provider behaviours associated with delivering the innovation. Proctor *et al.*¹⁷³ distinguished the concept of implementation outcomes from service system outcomes and clinical treatment outcomes. The authors argue that in making this distinction, it is possible to assess that if an innovation fails, whether the failure occurred because the intervention was ineffective in the new setting, or if a good intervention was deployed incorrectly. In reviewing and discussing the literature, the authors formed a working taxonomy of implementation outcomes: acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, penetration and sustainability. Using these implementation outcomes, it is proposed that the success of implementation may be modelled and tested thus facilitating the design of informed strategies to increase provider acceptance, improve penetration, reduce implementation costs, and achieve sustainability of the innovation being implemented.

3.1.7 Summary of models to be used within the GIF in evaluating the implementation of HLP

Sections 3.1.6.1 to 3.1.6.4 have discussed conceptual models that may be used to tailor the GIF for the evaluating the implementation of the HLP project.

The conceptual models selected for guiding the evaluation the various elements of the GIF in this study are summarised in Table 3.6.

Table 3.6 The conceptual models selected to use within the GIF for guiding the evaluation of the HLP implementation.

GIF concept	Framework to be considered for evaluating the implementation of the HLP project
Process of implementation	Greenhalgh et al., Moullin et al. (<i>Exploration, preparation, operation, sustainability</i>)
Contextual domains (influences)	Damschroder et al.'s Consolidated Framework for Implementation Research (CFIR) (<i>Intervention characteristics, outer setting, inner setting, characteristics of the individuals involved, process by which implementation is accomplished.</i>)
Factors	Those listed under the domains within Damschroder et al.'s Consolidated Framework for Implementation Research (CFIR)
Strategies	Powell et al. list of implementation enabling strategies
Evaluation	Proctor et al. working taxonomy of implementation outcomes

3.1.8 Aim and objectives

The work undertaken in this chapter aimed to explore the implementation process of the HLP within Portsmouth's community pharmacies. The concepts of the Generic Implementation Framework (GIF) were used in order to tailor a set of frameworks for the implementation process.

The research had the following objectives:

- To identify the extent was the HLP project implemented in Portsmouth's community pharmacies.
- To investigate the reported implementation activities undertaken within the pharmacies.
- To identify the reported challenges encountered in the implementation of the project and how do these compare to those included in Damschroder et al.'s CFIR.
- To identify the strategies were employed to enhance the implementation process.
- To identify the influences associated with the implementation of the project.

3.2 Methodology

The research aims signal the endeavour to explore experiences and views, which stem from an observable, objective reality, this study is situated within the critical realist paradigm. Critical realism highlights how, similarly to positivism, critical realism acknowledges an objective and intransitive reality which occurs independently of our knowledge. Forming part of this reality are the people, structures, norms, events and mechanisms within society which have independent and causal powers¹⁸⁴.

Critical realism is appropriate for this study as it views reality as complex and multiple rational; it recognises the significant role of agency and structural factors that influence human behaviour, which can be explained through the use of qualitative research methods. Critical realism postulates that there is an *intransitive* world that is real, and a *transitive* take on the world through the perceptions and theories that individuals develop about it. The transitive 'reality' is a human construction-influenced by factors such as individual values and ideas, interactions, experiences and contexts, which inevitably influence what is perceived and understood of 'reality'¹⁸⁵. The focus of a critical realist approach therefore involves investigating the mechanisms and structure underlying perceived events and identifying significant relationships or tendencies between phenomena. Adopting a critical realist approach acknowledges that causal mechanisms are facilitated or hindered by human agency, and the time and social context in which they operate; therefore in order to determine "what works best, for who and under what circumstances?" it is essential to view an individual's experience within those facilitating and constraining contexts in which they exist. Examination of data collected by various qualitative methods such as semi-structured interviews or questionnaires can be used to facilitate this approach¹⁸⁶.

This following sections review the methodology and methods that were applied throughout the research reported in this chapter of the thesis. A summary of the approaches to data collection and generation, analysis and interpretation of findings are presented along with reasons for the selection of such approaches as well as their shortcomings, where appropriate.

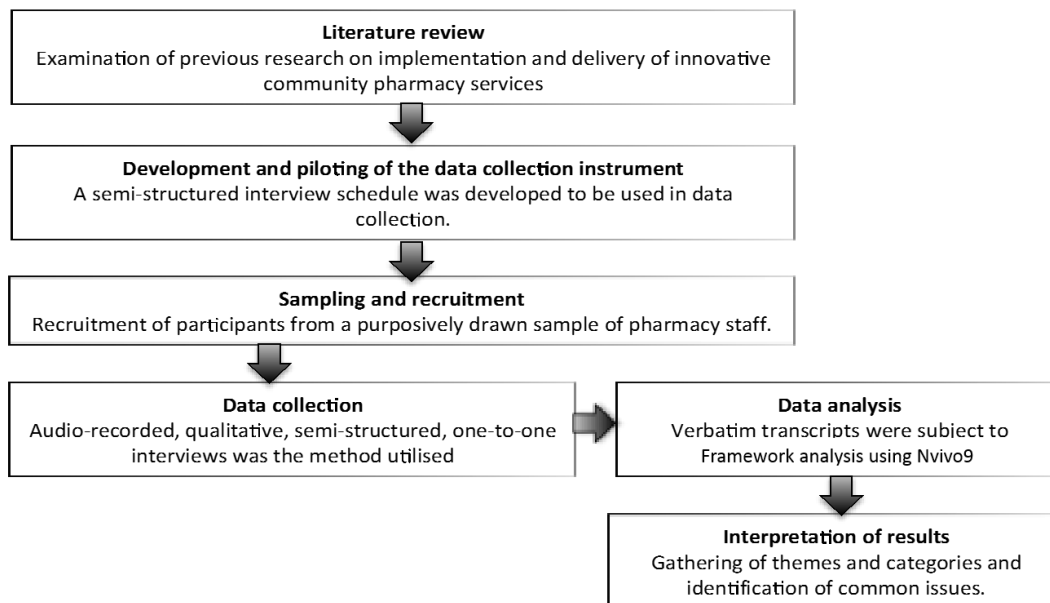
3.2.1 Methods overview

This study gathered the views of various community pharmacy staff working from Portsmouth's community pharmacies in order to evaluate the research questions in Section 3.1.7. These pharmacy staff included pharmacy owners, pharmacy managers, employee pharmacists, pharmacy technicians, dispensers and medicines counter assistants.

The study followed a qualitative evaluation research approach, where data were collected from one-to-one semi-structured interviews. These interviews were transcribed verbatim and subject to framework analysis; a pragmatic approach for considering practice related questions and providing an intuitive means of organising qualitative data. Evaluation research is action orientated and conducted to determine value or impact, with a view to making recommendations for improvement¹⁸⁴, and as such is conducted within the political and organisational context of the appropriate setting^{185, 186}. The research method aims to represent the range of perspectives of those who are directly involved in the implementation and delivery of the HLP project and places emphasis on ascertaining relationships between activities and outcomes¹⁸⁵.

In the following sections, the methodologies selected to carry out this study are discussed including their rationale and associated practicalities. Figure 3.3 illustrates an overview of the study methodology.

Figure 3.3 Overview of study methodology to investigate the implementation and early perceived outcomes of the HLP project.



3.2.2 Rationale for adopting qualitative design

On assessing the problem under investigation, it was deemed that a methodology of qualitative design was the most suited to this study. Qualitative methods have been identified to be especially useful in establishing relationships between events and how study subjects perceive them to be¹⁸⁷. This can be

applied to the work conducted in this chapter, whereby an innovation was the focus of the research, about which very little is known. Individuals were interviewed to explore their experiences and perceptions regarding the implementation of the HLP within community pharmacy. The literature suggests that in order to optimise opportunities for exploring views of individuals and to describe and analyse the culture and behaviour of groups that qualitative designs should be employed¹⁸⁸⁻¹⁹². It can be argued that programme implementation involves a social element, making it necessary to investigate the social context in which it occurs to understand patterns and outcomes. Furthermore, due to qualitative methods considering the full account of the many interaction effects that take place in a dynamic setting, they are particularly appropriate for evaluating healthcare service delivery, where the methods chosen must be capable of dealing with complexities^{193, 194}.

Extensive healthcare research utilises qualitative designs and its use in successfully addressing specific problems within pharmacy practice have been reported¹⁹⁵⁻¹⁹⁷. Qualitative methods have enabled the evaluation of education and training initiatives based on the views of different stakeholders and to gather information on perceived relevance, improvements in the knowledge and skills base, changes in practice, overall value and acceptability¹⁹⁸⁻²⁰².

There are critics of qualitative methodology, who have labelled it as 'unscientific' or 'anecdotal', as findings may be based on subjective accounts^{203, 204} and that they may provide context to what people say as opposed to what they do²⁰⁴. However, in order to allow for the qualitative research to be undertaken in a transparent way, so that findings are valid and reliable, a number of strategies can be deployed. Such measures have been adopted throughout the stages involving qualitative methodology in this research²⁰⁴.

3.2.3 Rationale for the choice of data collection method

One-to-one interviews^{199, 205-207} have been used widely in healthcare and pharmacy practice research in order to provide rich insights into people perspectives. They usually use an 'in-depth' approach which allows participants enough time to develop their own accounts of the issues important to them²⁰⁴. In semi-structured approaches, the researcher uses a pre-determined agenda, based around the research questions, and allows the participant to determine the kind of information produced as per the importance to them²⁰⁴.

The rationale behind employing one-to-one, semi-structured interviews was that the participants were either in full-time or part-time employment at various locations across the city of Portsmouth and therefore group interviews would have been very difficult to arrange. It was found that

interviewing participants at their place of work was the only practical way to make participation possible. The use of one-to-one, semi-structured interviews enabled a focused and in-depth exploration of single ideas^{24, 208}. In addition, data collected through one-to one had the potential to overcome group polarisation expected in group discussions and group dynamics which have silenced individual voices^{24, 209}.

3.2.4 Rationale for use of framework analysis

Framework analysis has been applied to similar qualitative research in the field of pharmacy practice research where the experiences of healthcare professionals are being investigated^{176, 210-212}. It has been argued that using a framework technique facilitates a more structured method of data collection and analysis whereby a deductive approach can be taken initially (based on pre-set aims and objectives) and then a more inductive approach (through interpretation of original accounts and observations)¹⁹⁵. Also, framework analysis promotes the identification of relationships between various thematic sections to help organise emerging patterns and form explanations.

A significant benefit framework analysis offers this particular study, where there was a large volume of data collected, is that it helps to organise the data through summarising narratives within charts and condensing discourses, whilst maintaining a link to the original data. (References were made to the original data using NVivo software²¹³.)

The analysis encompasses five key stages: *familiarisation of data; identification of a thematic framework; indexing; charting; and mapping and interpretation* (Table 3.7).

Table 3.7 The five stages of the framework analysis method for data management

Stage	Descriptions
1. <i>Familiarisation of data</i>	Reading and re-reading transcripts
2. <i>Identification of a thematic framework</i>	Generating codes, concepts and themes based on research aims
3. <i>Indexing</i>	Systematic application of the coding framework
4. <i>Charting</i>	Creating charts with participants across rows and themes down columns to provide a picture of the data to be viewed by others
5. <i>Mapping and interpretation</i>	Filling in the corresponding cells for row x column with quotes, interpretation and/or summaries

Data from transcripts are labelled, sorted and compared once the researcher is thoroughly 'familiar' with it. Themes emerge during this familiarisation process and then are 'indexed'. The indexed material is then synthesised to define the framework.

3.2.5 Literature review

Prior to carrying out the study, a review of research and policy literature was conducted to investigate previous studies reporting on the implementation and delivery of community pharmacy services (Chapter 2). The literature was accessed through the University of Portsmouth library resources and facilities. Additional literature was obtained via inter-library loans. A search of online resources was supplemented by a manual search and following references in material accessed, which included key pharmacy and healthcare databases and web pages. The literature review comprised of three parts: firstly, literature relating to the implementation of change and innovation in pharmacy practice, secondly to the delivery of services in community pharmacy, and thirdly to specific published literature and grey literature around the contextual background of the HLP project. Initially, there was an attempt to limit the literature review to material from the last ten years, however, the fact that some texts of historical interest proved useful in the understanding of contextualising recent policy changes – led to an extension of this timeframe to the last 15 years. This was particularly the case for articles and documents that described the evolution and development of community pharmacy services. A list of databases searched and key terms used can be found in Appendix 3.1.

Learning derived from the literature was used in establishing a background for this study and identifying important issues for the topic under investigation. This informed the design of the research questions, interview guide and analysis of the data obtained.

3.2.6 Data collection

3.2.6.1 Sampling and recruitment

In order to identify study subjects, purposive sampling was used, where recruitment is context based²⁰⁸, and sampling allows participants to be chosen from sampling based on participant demographics or other characteristics. This strategy is supported in qualitative studies²¹⁴ as it enables selection of a wide range of participants who have the potential to provide rich, relevant and diverse data pertinent to the research question¹⁹⁵.

The sample population were those staff employed within Portsmouth's community pharmacies. These staff fell into one of two groups; there were staff who were either, aware and actively involved in the HLP project through undertaking or planning the activities as set out in the HLP criteria; or there were staff who had consciously decided not to participate in the project. This included both pharmacist and non-pharmacist members of the community pharmacy team. No limits were placed on the number of potential participants since it was recognised that the process of implementation has its specific challenges to individual pharmacies and has the potential to impact pharmacy staff in different ways; thereby it was deemed that additional data may generate new information.

The rationale for including non-pharmacist staff was to not exclude those community pharmacies which did not have a regular employed pharmacist, since at the time of the study, national statistics indicated that 24% of the community pharmacy workforce was locums²¹⁵.

Furthermore, the literature had indicated a significant contribution of non-pharmacist staff in the implementation of innovation within community pharmacy¹⁰⁸.

A list of the community pharmacies, which fell within the Portsmouth City commissioned area was obtained from the commissioner's office (Portsmouth Primary Care Trust now Portsmouth CCG) Participants were recruited through telephone contact made by the author to each community pharmacy. Potential study participants were invited to participate verbally; whereby the author explained that the study sample included both pharmacist and non-pharmacist staff and was not limited in the number of participants. A date for the researcher to conduct the interviews at the pharmacy was arranged. A study information sheet and consent form, which included details about the project, was sent by mail prior to visiting the pharmacy, once an appointment had been made. A copy of this information sheet and consent form are shown in Appendix 3.2.

3.2.6.2 Interview design

A semi-structured interview schedule was developed to guide the interview process since the main purpose of employing qualitative interviewing is to reduce the potential for predetermined responses and to explore emerging ideas²¹⁶. This type of schedule does not constrain the interview process as it permits the use of alternative wording and the use of prompts in order to aid understanding and obtain full responses^{216, 217}. If used appropriately, this method can also contribute towards respondent validation²¹⁸, in that the moderator may request to clarify meaning to reduce the potential for misinterpretation²¹⁹. The interview schedule was designed to be non-directive with the inclusion of informal open-ended questions to explore the views and experiences of the participants within the

HLP project. Funnelling²²⁰ was used to sequence the questions, whereby interviewees were initially asked broad questions to elicit general views, this was then followed by prompts in order to generate discussion, establish more specific concerns or determine a context for participants to express their views²²¹. Consistent with the qualitative methodologies, the interview guide was developed to follow an iterative process rather than a linear one, in which questions were used in a flexible way, and refocused in light of participants' responses, with the interviewer investigating significant and noteworthy communication which changed or developed. Consequently, the interviews conducted were focused and systematic, whereby flexibility was combined with structure²¹⁸ and thereby facilitating the robust analysis of the data and enhanced validity²²².

Four topic areas were included in the interview schedule. The literature discusses that between four and nine topic areas may be considered in the design of an interview of one-hour duration²²³. However it was deemed that breadth and depth of topic exploration was of greater significance to investigate and therefore the decision was made to limit the interview guide to four topic areas. A maximum one-hour interview was deemed most appropriate because participants would likely be put off by an interview longer than this and the interviews were scheduled to take place during operating hours and in some pharmacies multiple participants were scheduled for interviews. Secondly, the researcher was mindful that with longer interviews the ability to obtain a complete set of data from each participant is put at risk by interviewer and participant fatigue²²⁴.

The initial design of the interview schedule was set around four key elements of the implementation process. A question to provide participants the opportunity to add anything to what had been covered in the interview was also included. This initial version of the schedule underwent a pilot and was amended to emphasise the focus on areas of particular importance and to remove questions that did not contribute towards achieving the aims of the study. More details about the pilot interview can be found in Section 3.2.6.3. The questions included in the interview schedule are provided below and the final version of the interview schedule is shown in Appendix 3.3.

Interview schedule:

Section 1: Addresses the *exploration* stage of the implementation process

1. Can you tell me how and why you decided to engage/not engage in the HLP project..

Section 2: Addresses the *preparation* stage of the implementation process

2. After deciding, what were your next steps?

Section 3: Addresses the *operation* stage of the implementation process

3. What challenges have you faced to get to where you are with HLP and how have you overcome these challenges?
4. What qualities or attributes do you think are present in this pharmacy that have enabled it to progress with HLP and how have these been supported?
5. What does it feel like to work here? What has changed to accommodate the HLP project?
6. What skills have you developed in order to be able to successfully deliver the HLP role?
7. What sort of benefits do you get from being an HLP and how have you recognised this?

Section 4: Address the *sustainability* stage of the implementation process

8. Would you describe HLP as routine day-to-day practice in your pharmacy? What barriers do you face to sustain HLP activities or increase the range of services you offer here?
9. Any other comments.

3.2.6.3 Interview pilot

The pilot interview involved a community pharmacist, working in a pharmacy working towards HLP accreditation. The purpose of conducting the pilot was to observe whether the questions elicited the desired breadth and depth of response²²⁴.

The length of the pilot interview was 48 minutes; during this time the participant appeared motivated and provided thorough responses to the questions posed. Moreover, this was found to be an adequate amount of time for exploration of the key topics areas included in the schedule. Therefore the interview schedule was kept largely unchanged with only minor amendments made to a number of the prompts to provide further clarity, consequently it was deemed appropriate to include these data in the analysis.

3.2.6.4 Interviews

No incentive was provided for participation in this study. Prior to each visit to a community pharmacy, a telephone call was made to check whether participants were present and able to undertake the interview. The interview schedule was employed to conduct one-to-one face-to-face interviews in a suitable quiet place in the pharmacy, where interruptions would be avoided; predominantly in the pharmacy consultation room or staff room. To ensure confidentiality and allow the interviewee to speak freely about their views, a request was made to the other pharmacy staff not to enter the consultation room or staff room whilst the interview was taking place.

The interviews began with a short introduction and explanation about the study and its purpose, and an opportunity for study participants to ask questions about the research. Even though an information sheet was sent to each participant prior to the interview, the researcher began each interview with reiterating the nature and purpose of the research, reaffirming confidentiality and then sought the participant's permission to record the interview. The participant was then requested to sign a consent form agreeing to participate. Interviewees were requested to speak honestly in providing their opinions. It was made clear that there were no correct answers and that participants could withdraw their involvement at any point. Before each interview, participants were requested to complete a short questionnaire to obtain information of their demographics and place of work; this information would be used in the analysis of the data. Once the participant had completed the questionnaire and handed it to the researcher, the audio recorder was switched on and the interview commenced.

Following the interviews, the researcher thanked the participants for their involvement and briefly described the next phase of the research. To ensure consistency, an interview checklist was used; this is provided in Appendix 3.4.

After each interview, field notes were made summarising the researcher's overall impression of the interview and any initial thoughts in apparent key themes. These notes were used to aid analysis of the audio recording transcripts.

3.2.6.5 Audio recording and transcription

Participants were informed that they would not be identified in any of the study's output; thereafter written consent was obtained prior to conducting each interview. The form used to obtain consent can be found in Appendix 3.2. A digital audio recording device (OLYMPUS DS-80) was used to ensure high sound quality. It has been argued that such recording devices may be perceived as intrusive and act as a barrier in participants feeling relaxed to respond honestly²²⁵. However in the context of this study where multiple interviews were conducted, such a recording device was deemed indispensable.

In this study, the researcher perceived through observing the participant's behaviour that the presence of the recording device was largely ignored and therefore its effects on their responses were believed to be minimal. The audio files from the digital recorder was downloaded to a password protected laptop and labelled with an appropriate reference code. Later the audio file was transcribed verbatim by the author using NVivo QSR 9 software. A second member of the research team checked the transcriptions for accuracy. Care was taken to include all verbal communication and non-verbal gestures in the transcriptions. To ensure anonymity, identifiable information within the transcript was removed and a relevant participant reference number was assigned to each of the participants.

3.2.7 Data analysis

3.2.7.1 Overview of data analysis

The data set was subject to framework analysis in a way consistent with previous qualitative studies^{176, 226-229}. The process of Framework Analysis was iterative, rather than comprising five sequential stages, and involved successive analyses over several months. The five stages and associated practical details, are summarised in Table 3.6.

The first phase of the framework methodology was familiarisation of the raw data by listening to the audio, to confirm accuracy of the transcripts, and to note key ideas and recurrent themes. Secondly, the stages of the implementation process were used as the overarching themes (according to the definitions provided in Table 3.2) and were input into a framework matrix. The data were then coded under the appropriate theme. For example, often, during the implementation process, innovation champions are appointed within a leadership role; the literature recognises this as an implementation activity¹⁷⁰ that takes place during the *preparation* phase of implementation. Thus in a process referred to as *indexing*, this activity may be categorised as such, [activity: *assign leader*], under the overarching *preparation* theme within the framework matrix.

Within the framework matrix, each column is a theme (in this study, the stages of implementation shall be used as themes) and each row a case (study participant)²³⁰. For the purpose of simplifying the data in this study, each case represented a single community pharmacy, rather than a single respondent. To facilitate this, the data from interviews of staff employed at the same pharmacy were combined.

Thematic analysis was performed on the data under each stage of implementation to identify the steps/activities and influences on the process of implementation^{230, 231}. This analysis was performed by open coding the transcript line-by-line, using a constant comparison approach of the interviews, until each interview's data were coded across all applicable implementation stages and the key activities and influences in the implementation process emerged.

Additional codes were added as the data extraction continued, allowing the framework to be developed further²³¹. The interpretation of the chart was used to confirm the implementation process, the influences and their relationships^{230, 231}.

A secondary analysis was performed to examine the discussed *factors, strategies* and *evaluations*-implementation concepts included in the Generic Implementation Framework. Established implementation frameworks, as cited in section 3.1.6, were referred to support this analysis.

Factors were assessed at each stage of implementation using the CFIR¹⁷⁰.

The reported strategies utilised to overcome implementation challenges were considered using the Powell *et al.*'s list of implementation strategies¹⁷¹.

3.2.8 Ethical approval

This research received a favourable opinion from the Portsmouth NHS Local Research Ethics Committee (ref 10/H0501/6) 22/01/10 (Annexe 1).

3.3 Results

The purposive sampling meant that the participants of the study included both pharmacist and non-pharmacist staff in all of the community pharmacies in Portsmouth. This strategy resulted in good representation of the various types of pharmacies located in the city (Tablet 3.8). Staff from 32 of 36 community pharmacies in Portsmouth consented to be interviewed; those pharmacies in which staff declined to participate in the study had shown no engagement with the HLP project. The number of community pharmacy staff interviewed was determined by convenience and availability, since many community pharmacy staff are employed on a part-time basis; additionally the demands on pharmacy staff time vary according to customer needs which often do not follow distinct trends. In total, 38 interviews were conducted with pharmacy staff between November 2011 and February 2012, as detailed in Tables 3.8 and 3.9. In some pharmacies, both the pharmacist and the HLC or another member of pharmacy-support staff were interviewed. Two HLCs were employed by pharmacies that were working towards achieving their HLP-accreditation by demonstrating adequate service provision and staff training (this is defined as ‘aspiring to HLP-status’ in the identifier to following quotations). The interviews ranged in length from 20 to 35 minutes.

Table 3.8 The type of pharmacy at which interviewed staff were employed

<u>Pharmacies</u>	Totals	HLP accredited (HLP)	Non-HLP accredited
Independents	11	7	4
Multiples	21	10	11
Total	32	17	15

Table 3.9 Details of the job role of the staff interviewed

<u>Staff</u>	HLP accredited pharmacy (HLP)	Non-HLP accredited pharmacy (nHLP)	Total
Pharmacist (P)	14	11	25
HLC	9 ^a	2 ^b	11
Non-HLC support staff	0	2 ^c	2
Total	23	15	38

^a Consisting of three medicines counter assistants and six dispensing assistants

^b Consisting of one medicines counter assistant and one dispensing assistant

^c Consisting of two medicines counter assistants

The findings indicated that all of the pharmacies had undertaken activities to indicate that the process of implementing the HLP project had been initiated. As indicated in Table 3.8, 17 of the 32 pharmacies had achieved HLP accreditation, with other pharmacies working towards achieving the accreditation criteria. However, the findings reveal that those pharmacies in which a greater number and more diverse implementation activities were reported, had not all achieved HLP-accreditation (i.e. the number and diversity of implementation activities reported did not always correlate to HLP-accreditation). For example within particular pharmacies, it was reported that specific activities had been undertaken that are recognised within the literature to take place within the *operation* phase of the implementation process, such as goal setting and modifying procedures but not all pharmacies reporting these activities had achieved HLP accreditation. Whereas, other pharmacies in which respondents did not report any implementation activities that would indicate that the *operation* phase has been reached, may have achieved HLP-accreditation. To explain this observation, one must be familiar with the specific HLP-accreditation criteria (see Table 2.5, Chapter 2). For example, HLP-accreditation required the pharmacy to have a minimum of one trained HLC; this posed a challenge to some pharmacies. Respondents from community pharmacies that employed pre-dominantly part-time staff, or who relied on a small team of full-time staff, discussed their difficulty in releasing staff to attend the training, due to the consequent staff shortage this would result in. Therefore, there were pharmacies who had achieved the majority of the criteria and were offering HLP services routinely but were not able to achieve the HLP-accreditation.

The individuals interviewed spoke predominantly about the pharmacy services affiliated to the HLP criteria³², but mention was made to other areas of the HLP criteria including engagement with the local community through setting up health promotion activities and introducing a designated area in the pharmacy to promote HLP services.

It was also evident that pharmacies with a highly motivated HLC appeared to be at an advantage compared to those who had not yet appointed a HLC or where the HLC was not conducting the ascribed role, either due to work demands or personal factors such as lack of buy-in. Generally such pharmacies emerged more knowledgeable of the HLP project and were more aware of newly introduced HLP services.

3.3.1 Process of implementation

Four implementation stages emerged from the data, *exploration, preparation, operation and sustainability*. This was made evident through interviewee's discussion of the range of activities they

had undertaken since the introduction of the HLP project. These activities were categorised and are summarised in Table 3.10.

Table 3.10 Resulting stages and activities of the implementation process of the HLP project in Portsmouth's community pharmacies.

Exploration
<ul style="list-style-type: none"> • Organisation fit assessment (implementation climate) • Value assessment (relative advantage) • Intervention assessment (complexity) • Organisational capacity assessment (supporting conditions and staff capacity) • Community fit assessment • Decision
Preparation
<ul style="list-style-type: none"> • Assign leader (HLC) • Research requirements • Rearrange workflow • Staff arrangements • Team communication (buy-in and foster climate) • Community awareness and recruitment • Training • Organise supporting conditions • Plan service procedures
Operation
<ul style="list-style-type: none"> • Modification of plans and procedures • Maintain patient demand • Staffing • Teamwork, team input and internal communication • Integration tactics • Ongoing training • Goal setting • Monitoring • Adaptation • Improvement
Sustainability
<ul style="list-style-type: none"> • Monitoring^a • Adaptation^a • Improvement^a

^aFew pharmacies had reached sustainability, these activities appeared only in a few pharmacies who had a culture of community pharmacy service engagement prior to adopting the HLP project.

Analysis across the cases of the framework matrix revealed a pattern, whereby those pharmacies where a greater number of implementation activities were considered and discussed seemed to demonstrate an apparent greater integration of the HLP project.

The interpretation of the framework matrix also identified that there was movement back and forth between stages and differences in the order of performing implementation activities. Examples to demonstrate this was at one particular pharmacy in which a member of staff was put forward for the HLC role and attended the HLC training in order to gather more information about the project; following this the pharmacy team made a decision to adopt the HLP project. Secondly, there were respondents who had reported activities indicating that the pharmacy had reached the *operation* phase of the implementation process yet would also be undertaking *preparation* implementation activities simultaneously, particularly in the case where a new HLP-service was launched or a member of staff left the pharmacy.

It was also apparent from the interviews that pharmacies did not necessarily complete all of the activities before progressing to the next stage of the implementation process. An example to demonstrate this was a pharmacy where it was reported that staff had been set individual targets for service provision (*operation* activity) but were yet to assign a HLC (*preparation* activity).

Exploration

An exploration stage emerged in the interviews, which was often informal in that there was no set structure or systems, and lacking objective assessment. A decision to participate in the HLP project was subsequently made, often by the pharmacist; but in most cases the pharmacist initiated an opportunity for a joint discussion and the decision was made by the pharmacy team [activity: *decision*].

“From the start we all agreed that we have to get involved (in the HLP project), we are always looking to do whatever we can to help the customers who come into this pharmacy and this was just another way that we could offer more services and help more people” HLC employed in an HLP accredited pharmacy.

During the exploration stage, the HLP project was assessed by the pharmacy staff, to identify what could be the potential benefits of involvement, including financial, business (such as increasing customer loyalty and rapport), customer and/or professional [activity: *value assessment (relative advantage)*]. In many cases, the potential benefits of involvement were balanced against the complexity and requirements for implementation of the project. That is, pharmacies assessed the HLP project in terms of the degree of change [activity: *intervention assessment (complexity)*] and their capacity to deliver (cost of resources, staffing levels, training) [activity: *organisational capacity assessment*].

“It was an easy decision to make, the services would be an additional revenue stream which didn’t require big investment and I, myself enjoy that part of the job a lot more (providing community pharmacy services) than the checking (clinically and accuracy checking prescriptions), and so do my staff” Pharmacist employed in an HLP accredited pharmacy.

Significantly, the most frequently mentioned consideration was the community’s needs whereby interviewees felt that the HLP project was aligned with the pharmacy’s objectives and vision [activity: *organisational fit assessment*] and therefore had a duty to their community to implement the HLP project [activity: *community fit assessment*]. Personal interest was also frequently reported as contributing to the decision to adopt the project, particularly with the pharmacist respondents, exemplified by the following:

“We do have lots of our local customers that would need the extra services and we already offer most of the services so it wouldn’t be a big change” HLC employed in an HLP accredited pharmacy.

Preparation

After deciding to adopt the HLP project, in most cases a staff member was assigned to attend the HLC training and to be responsible for disseminating information back to their team; this was done both formally and informally [activity: *assign leader*]. This person was most often a medicines counter assistant (MCA) or a dispensing assistant (DA) who had expressed an interest in the role and were motivated to undertake the training, or was contracted to full-time hours. The HLC’s reported carrying out activities including conducting training, recruiting customers, providing the HLP services and overall driving the implementation effort. Another activity was to investigate the various documentation and requirements of the various HLP accreditation criteria [activity: *research requirements*] and making the required changes in the pharmacy, such as arranging a health promotion stand and updating the pharmacy’s sign-posting resources [activity: *organise supporting conditions*].

“Because I worked the most hours and am here on the most days, XXXX (the pharmacist) asked if I would go on the training (HLC training)..... They showed us what we need to do to get accredited and it was my job to go back to the pharmacy and basically share that information with everyone else and make sure everyone knows what to do” HLC employed in an HLP accredited pharmacy.

“It was my job to keep everyone up to date with how we are doing with our services and other bits (accreditation criteria) and then me and XXXX would set up the stand in the pharmacy, making sure its tidy and there’s plenty of leaflets and making sure we know what we are talking about (regarding health information on the health promotion stand)” DA employed in a pharmacy aspiring to HLP-status

Planning strategies of recruiting customers and delivering services was generally carried out by the HLC [activity: *plan service procedure*]. The majority of pharmacies considered logistical issues of introducing the HLP project into the pharmacy; but this was particularly significant for the pharmacies which did not routinely offer community pharmacy services and pharmacies with fewer staff, or predominantly part-time staff. Logistical considerations included convenient access to the private consultation room, the workflow of the dispensary or in some cases the layout of the pharmacy [activity: *rearrange workflow*]. As an example, two pharmacies undertook structural rearrangements within the pharmacy whereby a second consultation room was introduced to conduct HLP services.

“We moved the shelving in the shop around to make space for the health promotion stand and make it easier to get to the consultation room because we thought we’d probably use it more for the services” HLC employed in a pharmacy aspiring to HLP-status

“We did say to start off with, that XXXX (the HLC) would run the services and if there was customers asking we would get XXXX from the back (dispensary) to come talk to them (the customer) and then we’d see how it went, but afterwards we decided to move the computer (used for dispensing) nearer to the counter, so that XXXX could overhear us and come and take over if the customer wanted to talk about one of the services ” DA in a HLP-accredited pharmacy

Staff was a prominent consideration; this included adapting the roles and responsibilities of staff, assessing whether staff numbers were adequate (to facilitate provision and manage existing work demands) and recruiting staff if new staff were required [activity: *staff arrangements*]. There was wide variability in the level of team input and teamwork [activity: *team communication (buy-in and foster climate)*]. Internal communication channels comprised of informal meetings or one-to-one conversations but in many cases interviewees reported a lack of internal communication and discussed this as a barrier to furthering implementation.

“I think there should be some sort of regular communication where we can all say what we think and give our ideas to make things work better because we all see things from different perspectives and maybe I can have an idea that nobody has thought of (regarding HLP activities) but it doesn’t really happen” MCA in a HLP-accredited pharmacy

“We have dispensary meetings on Thursday mornings when it’s a bit quiet and we can talk about who (pharmacy staff) should be doing what (staff arrangements) and if we’ve noticed things that can make the services run better or if somebody isn’t doing the paperwork properly (relating to HLP services)”
HLC employed in an HLP accredited pharmacy

The activity that was most frequently discussed was training in order to prepare staff for delivering HLP services and to understand the objectives of the HLP project [activity: *training*].

“We’ve had to send staff away for training days, which hasn’t always been easy to cope with, because we are a small team..... I feel that we do need more staff, especially if we are doing more services”
Pharmacist in a pharmacy aspiring to HLP-status.

While another consideration were strategies to promote awareness within the community and local health network so to enhance customer interest and potential recruitment [activity: *community awareness and recruitment*]. These activities were initiated and developed by the HLP project team and supported by pharmacies.

Operation

Challenges began to arise as pharmacies began to offer the HLP services and work towards meeting the accreditation criteria. The provision of services required the recruitment of customers; as time passed, recruitment became increasingly challenging. A common contributory factor for this was that in most pharmacies, a core group of regular customers was initially recruited to receive various HLP services, such as smoking cessation and respiratory medicine usage review; however after this initial recruitment, it was reported that maintaining the same level of demand for services became more difficult. This challenge of maintaining demand is recognised in the implementation literature [activity: *maintain patient demand*]. To tackle this, a series of activities were put in place by pharmacy teams, including reviewing the dispensary procedure to help in identifying suitable customers who may benefit from HLP services, adapting the specific language and approach used to recruit customers, delegating recruitment to specific members of staff and using prompts to remind staff.

“It does depend on the patients as well, its not just the staff not communicating properly. Sometimes patients aren’t willing to commit to anything new or change anything (regarding the challenges of recruiting patients to HLP services)” HLC employed in an HLP accredited pharmacy

“We’ve done a few little things to try and get more customers to join.....XXXX (the dispenser) will mark on the script (NHS prescription) if the person (customer) is asthmatic (to target a respiratory Medicines

Usage Review) or she'll write on top (of the prescription) that the person's got a note on the computer to check their blood pressure because it was a little bit high or that she was on the stop smoking scheme so we can ask them about that too" From a MCA employed in a pharmacy aspiring to HLP-status

"Now, if someone comes in for a cough syrup or a bad chest, we always ask if they're a smoker, and then XXXX (the HLC) has told us a few tips about what to say to get them interested in joining the stop smoking (service)" MCA employed in a pharmacy aspiring to HLP-status

All participants discussed staffing issues with regards to the implementation of HLP [activity: *staffing*]. Reference was made to the morale, confidence, enthusiasm, and skill of staff in service provision and in approaching and recruiting customers into HLP services.

"It hasn't always been easy to motivate the staff, I try my best but you have to have strong leadership and that should come from the pharmacist or the manager; if they don't get involved and support it and help you then it's easier for other staff not to get involved and learn more" HLC in a pharmacy aspiring to HLP-status

"The training (HLC training) was excellent; because we were all finding out feet with the whole thing (HLP project), it meant that we (the staff present at the HLC training) all had similar questions and having that time to meet up with the other champions (HLCs) to talk about things and to help each other was invaluable.... I think that's what motivated us more than anything else" HLC in HLP accredited pharmacy

A number of participants detailed their strategy of redefining staff roles and responsibilities in order to further the process of implementation [activity: *teamwork team input and internal communication*]. The majority of pharmacies introduced strategies to change existing habits and to enhance the integration of HLP activities into day-to-day practice [activity: *integration tactics*]. For example, it was reported that pharmacy staff did not have a proactive approach to customer recruitment to pharmacy services and initiating conversations around health and well-being was not common practice. The strategies employed to change this comprised of introducing prompts for staff (such as asking about smoking status on the sale of cough medicines), making incentives available (including staff recognition awards) and undertaking performance reviews. In addition, on-going training for staff was raised as a key activity for supporting continued involvement in delivering HLP services [activity: *on-going training*].

"When I said that I wanted to do the training, me and XXXX (the pharmacist) sat down and discussed how we can try best use my expertise, because I am a dispenser and don't really have that much to do

with the customers..... XXXX (the pharmacist) suggested we get XXXX (the MCA) trained as a dispenser so I can have more time with the customers” HLC in HLP accredited pharmacy

“Job satisfaction; I’m using more of my skills in a productive way to improve the health of my local community and that is really what I got into pharmacy for: to feel I am contributing and making a difference to people’s health” Pharmacist in a pharmacy aspiring to HLP-status

“We had weekly targets (HLP services) that we put on the wall, and there were prizes for whoever got the most or whoever got their target..... it did work to get us going which was good” HLC in a pharmacy aspiring to HLP-status

“The training we go to helps, because there’s so much to remember and there’s always something new.... When you go there (HLC networking meetings) and meet the other champions, you learn from what they are doing and there’s always a talk by someone to explain the services with more details (service practitioner e.g. a member of the local Alcohol Intervention team).” MCA in a pharmacy aspiring to HLP-status

Goal setting was prevalent in pharmacies (n=17) whereby teams set weekly service targets, for example, to recruit two customers to the smoking cessation programme [activity: *goal setting*]. Some pharmacies revealed that Key Performance Indicators (KPIs) had been developed for individual staff members, while others had worked together to agree on pharmacy team targets. However, a minority (n=4) of pharmacies were against the idea of introducing goal setting since they believed that self-motivation was sufficient and the concept of setting targets was not consistent with the ethos of the HLP project.

There were two pharmacies, who were yet to achieve HLP accreditation, which had introduced formal monitoring systems to keep track of the level of service provision; in each case this was arranged by the pharmacy owner [activity: *monitoring*]. Recognising customer feedback was identified as important in improving staff morale and motivation, and was thereby perceived to enhance the implementation efforts and service provision as well to assess the relative advantage of the project. There were also reports of informal monitoring of service procedures; this included recording the time to carry out individual services. Based on the monitoring, a minority of pharmacies decided to adapt the service; such as making arrangements for the service to be conducted using an appointments-based system [activity: *adaptation*]. Finally, there were individuals who made minor amendments or improvements to the services in an attempt to improve efficiency or effectiveness, for example, pharmacies introduced sending a text message reminder to customers to attend their smoking cessation or weight management appointments [activity: *improvement*].

“We do hear about how well we are doing when XXXX (pharmacy owner) comes down with the figures and tells us how many services we’ve done (HLP services), and he says well done and is really supportive” HLC in a HLP accredited pharmacy

“We were finding that our smokers (customers enrolled on stop smoking programme) wouldn’t always turn up for their appointments and that meant we couldn’t claim them as a quitter. So we used the pharmacy phone to send out reminder texts which seemed to work really well” HLC in a HLP accredited pharmacy

Sustainability

The analysis revealed that only a small number of pharmacies had reached the sustainability stage of the implementation process; that is on-going provision of HLP services, the maintenance of supportive conditions for the delivery of HLP activities (e.g. staff capacity, service adaptation, monitoring) and consistent service outcomes. Indicators of sustainability were evident only in those pharmacies that had previously been delivering many of the services prior to adopting the HLP project; interestingly the majority of respondents reporting such activities were not HLP accredited.

“I know we need to get a champion trained up (HLC) (in order to achieve HLP accreditation), but a lot of the services we already offered for quite some time, so it wasn’t too hard to take on a little bit more because everybody knows what to do and we all help each other..... I think that’s how we’ve been able to maintain good figures (in delivering HLP services)” MCA employed in a pharmacy aspiring to HLP-status.

“We collect patient feedback from the customers who’s gone through the services, and they are generally really happy. That can help with staff morale and help motivate staff so they can see the impact they are having” Pharmacist employed in an HLP accredited pharmacy

“The services have needed slight tweaks to fit in with how we do things here..... we soon realised that the health checks took a lot longer than we thought they would and it meant that we were left short at busy times in the shop (pharmacy)..... that’s when I decided it’ll be best to have appointments instead” Pharmacist employed in an HLP accredited pharmacy

It was identified that within these pharmacies, internal communication was routine, whereby regular staff meetings were held to raise concerns or to share ideas of how internal processes can be improved. It was also evident that within these pharmacies, respondents reported strong leadership

and support (in terms of resources) from managerial level personnel (managers/ owners/ organisation management).

“We have managed to do really well with the project, we’ve got a really good team; and owners who listen to us and let us do what we think is best. If we tell them we need more hours (staffing-hours) then they’ll support us and they do that because they care about the customers and they know how difficult it is for people round here (local community)” HLC employed in a HLP accredited pharmacy.

3.3.2 Implementation influences/domains

The thematic analysis also identified five recurring influences that appeared to be present in the various implementation stages, which have been mapped to Damschroder *et al.*’s CFIR domains¹⁷⁰:

- *direction and impetus, (inner setting)*
- *internal communication and planning, (inner setting and process by which implementation is accomplished)*
- *staffing, (inner setting and characteristics of individuals involved)*
- *community fit (outer settings)*
- *and support (inner and outer settings).*

Depending on whether or not these individual influences were present within the various stages of the implementation process determined their impact; furthermore their presence resulted in both positive and detrimental effects on HLP implementation. Using *staffing* as an example; enhanced staff capacity was a positive influence on the progression of pharmacies in implementing the HLP project; whereas some pharmacies reported that a lack of trained and motivated staff inhibited the adoption of change and thereby acted as a barrier to implementation.

The *direction and impetus* of the pharmacy, which encompassed the vision, ambition and motivation of the pharmacist in addition to the leadership and support provided by management (manager, owner or company management), was identified as a prominent influence. In many cases, it was this influence which appeared to be an initial precondition for the implementation process and an important aspect for continued progress through the implementation process.

“Having a pharmacist who is interested and motivated and wants to get involved, makes all the difference. A motivated pharmacist will give staff the encouragement and freedom to do what they are trained to do.” Pharmacist employed in a HLP accredited pharmacy

“We see the pharmacy as an ideal environment to help support patients with healthy living- the principles that HLP are built on really. What we are try to achieve is.... to not just be there for help with people’s medicines but also to be able to give them advice and support on their general health”

Pharmacist employed in a HLP accredited pharmacy

Leadership from the pharmacist and/or management needed to include support, motivation and encouragement, where this was lacking, the implementation of the HLP project did not progress as quickly and the implementation activities reported were fewer. The role taken up by the HLC was also a significant one as an internal leader, contributing to influencing change within the pharmacy staff. This was achieved through supporting staff performance and encouraging involvement in the HLP activities.

“The HLC role has changed the way I do my job; she motivates the staff, watches them with customers and give them feedback.... I think that’s the best thing the HLP has done (introduce the HLC role”

Pharmacist employed in a HLP accredited pharmacy

Secondly, *internal communication* and *planning*, which included input from all team members and teamwork, was a recognised influence. It was observed that some pharmacies had little or no communication regarding services and the implementation of the HLP project, whereas other pharmacies had a process of shared decision-making where staff, often lead by the HLC, were able to contribute their ideas to the implementation planning during formal or informal meetings. It was reported that internal communication had an impact on the culture and ethos within the pharmacy, which had an impact on the overall implementation effort.

“I am envious of some of the pharmacies.... When we meet up (at the HLC training) and hear about how everybody else is doing and what they get up to (with the HLP project).... In other pharmacies, it seems that everyone (pharmacy staff) is involved and make decisions together. Sometime I feel that I am the only one doing anything about it (HLP involvement) and if I didn’t, nobody else would (other staff within the pharmacy)” DA employed in a pharmacy aspiring to HLP-status

“I do think that we would do so much better (with HLP activities) if we made plans and everybody know what we all were supposed to be doing... we are so busy, we don’t really talk about it (HLP activities), we just come in and do our best.... I don’t think it’s the best way to do it (HLP implementation) but we just don’t have the numbers (staff within the pharmacy)” MCA employed in a pharmacy aspiring to HLP-status

Staff was the third influence which covered staff capacity (enthusiasm, morale, confidence, skill) and was an influence present in all stages of the implementation process, particularly discussed in relation

to activities within the *operation* stage of the implementation process. Selecting appropriate staff for the HLC role and staff members' beliefs regarding their involvement in the project were important influences. For example, staff who did not see the value in services, appeared to struggle with implementation.

"Motivation is always difficult to create no matter what..... a change of skills from being retailers into offering services and healthcare advice. It's always difficult to get people to change how they work and it seems we have more success with younger, more dynamic member of staff." Pharmacist employed in a HLP accredited pharmacy

"The HLCs have been a revelation; there confidence to approach and talk to customers, and the enjoyment they get out of it (delivering HLP services) is something I've not seen before in community pharmacy.... They pretty much run the project themselves, getting everybody trained and making sure we have all the consumables for the services; they even have started to call up customers who haven't turned up to their appointments (for HLP services, e.g. smoking cessation). They are brilliant" Pharmacist in a HLP-accredited pharmacy

Community fit (i.e. the suitability of the HLP project within the context of the local community) was an influence present throughout the implementation process. In the exploration stage, pharmacy staff considered the health inequalities of the local community; and existing accessible health resources, as motivators in their decision to participate in the HLP project.

"We know that we are in a deprived area of Portsmouth (the location of the pharmacy), we see all sorts of things on a daily basis (presenting complaints of customers), and we know that we have to do our bit to help.... We've been here twenty odd years.... Customers come in here for everything" HLC in a HLP accredited pharmacy

Further in the implementation process, community fit became a more prevalent influence as pharmacy staff became more conscious of the impact of community awareness, perception and demand.

"We have our regular customers and they help to spread the word (about the HLP services offered), but I think more needs to be done to raise awareness in the community... there's no point in having all these services and nobody using them (in response to reduced demand of HLP services)." MCA employed at HLP-accredited pharmacy.

The final underlying influence was support, which included having a professional network, management support and support from the HLP project team. This support affected a number of

implementation activities, including challenges establishing favourable connections with local services providers (for example with local GPs) as well as the lack of networking events for pharmacists involved in the HLP project, which respondents felt could have contributed to developing strategies to improve public awareness and made customer recruitment easier.

“I think the training does need to continue; the PCT’s help has made HLP successful, so whenever anything new is launched, we need that to be backed up with the PCT’s help especially with getting the local GPs onboard and making them aware of what we are doing..... you know how it is in community pharmacy, if it’s not ‘Okayed’ with the GPs, then patients get suspicious (referring to GPs’ endorsement of community pharmacy initiatives).” Pharmacist employed in a pharmacy aspiring to HLP-status.

“This is a brand new initiative and we very much need the public on board.....surely, it makes a lot of sense for the local pharmacists to get together and discuss ways we can take this forward.... But the PCT doesn’t provide those opportunities” Pharmacist employed in a HLP accredited pharmacy.

A lack of support for developing a service procedure that did not disrupt workflow and poor service commissioning was discussed in relation to the NHS health check service, which was reported to require up to one hour of staff time and respondents felt the reimbursement did not reflect the time required to conduct this service.

In contrast, the PCT support in the provision of training HLCs and providing reports of service provision at the HLC meetings was largely indicated to be a positive influence on implementing the HLP project.

“The whole champion idea is amazing and the champions meetings are brilliant.... They give me so much energy and I get so much good advice (from HLCs employed in other pharmacies) that I can bring back here (to the pharmacy) and use for running our services (HLP services)” HLC in a HLP accredited pharmacy

“I think the HLC role has been a revelation, its given individuals the confidence and the ability to go up to customers and start conversations about their health issues... it’s something I really did not expect” Pharmacist in a HLP accredited pharmacy.

3.3.3 Secondary analysis: factors, strategies and evaluations

The data were subjected to secondary analysis whereby a list of implementation factors relating to the process of implementing the HLP project was developed and were mapped to the CFIR¹⁷⁰ (as

defined in Table 3.3). In each of the implementation stages, a variety of factors were identified. Appendix 3.5 provides the analysis of factors that were recognised at each stage of implementation.

Factors relating to the characteristics of the HLP project (innovation domain) were particularly evident within the *exploration* stage, during which pharmacies undertook an informal analysis to decide on their involvement in HLP. Staff perceptions of the potential advantages to the pharmacy and to the customers, the difficulty of implementation, and potential cost were considered in the adoption decision. In the *preparation* stage, factors linked to the pharmacy (inner setting) appeared frequently, but the majority were also identified during all stages.

The needs and subsequent demand of the pharmacy's customer population for HLP services were discussed as dominant outer setting factors.

The factors relating to the staff, (knowledge and beliefs about HLP; individual state of change; motivation) were prevalent across the implementation stages.

To promote adoption and enhance integration of the HLP project, pharmacies adopted various implementation *strategies*. A significant number of pharmacies faced challenges in fully implementing the HLP project and achieving accreditation, yet, out of the 73 discrete implementation *strategies* as described by Powell *et al.*¹⁷⁹, 44 were evident in the narrative provided by at least one pharmacy (Appendix 3.6).

The analysis revealed that *evaluations* of any form were lacking or informal. There was evidence that most pharmacies had monitored the number of services they were providing (sometimes linked to economic outcomes) and feedback from customers was obtained for specific HLP services. However, performance, implementation or clinical evaluations were absent.

3.4 Discussion

The work carried out in this chapter aimed to investigate the implementation of the HLP project in the community pharmacies within Portsmouth. Through the employment of the GIF, the implementation process of the HLP in Portsmouth's community pharmacies was investigated.

Figure 3.4 and Table 3.11 illustrate the implementation concepts specific to the implementation of the HLP project, identified within this study.

Figure 3.4 Framework for the implementation of HLP in community pharmacy

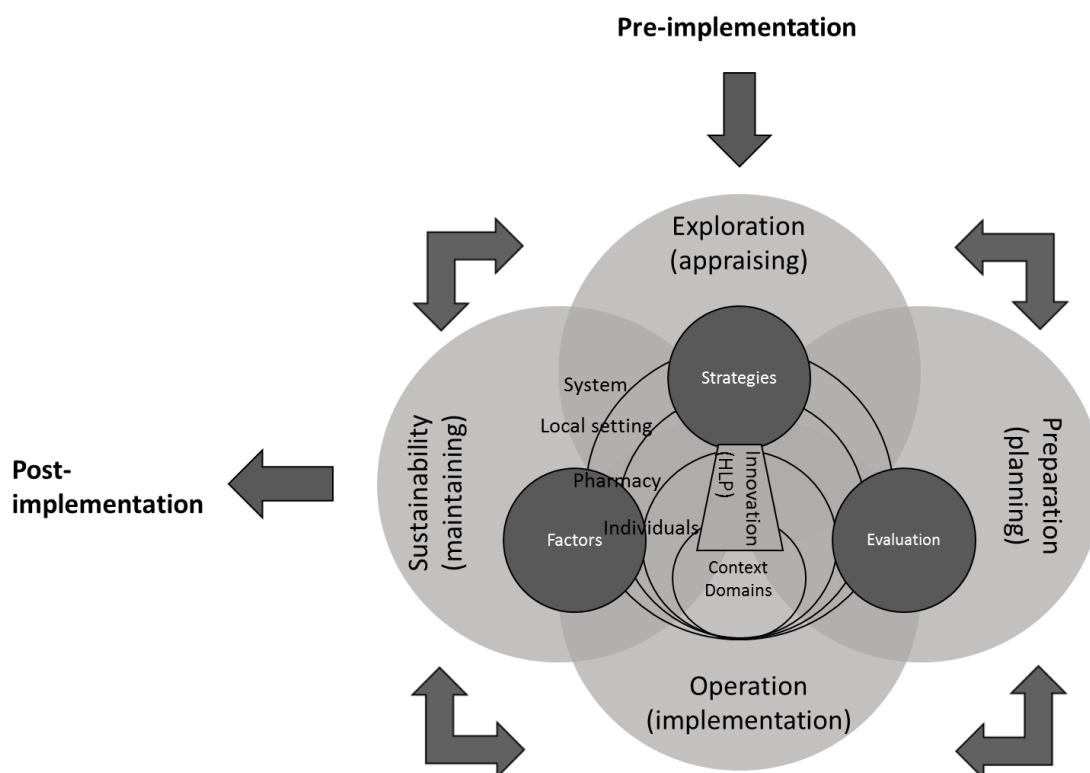


Table 3.11 Outline of the specific GIF implementation concepts recognised to apply to the HLP project

Implementation stages	<i>Exploration, preparation, operation, sustainability</i>
Influences/domains	<i>Direction and impetus, internal communication and planning, staff, community fit, support</i>
Factors	As recognised using the CFIR (Appendix 3.5)
Strategies	44 of those identified by Powell et al. (Appendix 3.6)
Evaluations	Largely lacking, customer feedback was collecting in few pharmacies.

These findings describe the stages involved in the implementation of the HLP project within community pharmacy. They recognise the general influences of the implementation process and identifying the specific *factors* reported to be present at each stage of the process. Further, the findings also reveal the *strategies* employed by community pharmacy teams in an attempt to enhance the integration of the HLP project into routine practice.

Figure 3.4 also illustrates where pharmacies were undertaking implementation activities associated with more than one implementation stage concurrently (depicted by the overlapping outer circles) and where pharmacies had moved back and forth between different stages of the implementation process (depicted by the double-headed arrows).

A further finding, not illustrated in Figure 3.4, is that of the disconnection between HLP-accreditation and extent of HLP-implementation. In contrast to what one might expect, in some cases respondents from pharmacies aspiring to HLP-status reported a greater number of implementation activities within the *operation* and *sustainability* phases than reports from HLP-accredited pharmacy respondents. This is consistent with findings of previous studies, which demonstrate that implementation activities and influences are complementary and integrative, whereby strength in one area may rectify a shortcoming elsewhere^{183, 232}.

Although the implementation process of innovation within community pharmacy is yet to be reported on in the literature; previous individual studies have identified the various factors, facilitators (strategies) and influences of implementing community pharmacy services.

The RPS reported barriers of implementing innovation in community pharmacy³⁹ (Table 3.4) acknowledges poor public understanding of the role of pharmacists, lack of leadership, professional isolation and poor commissioning of pharmacy services; all of which resonate with the findings in this study. For example the findings of this study demonstrated that the local community's awareness, perception and demand for HLP services influenced the process of implementing HLP – this can be linked to the poor public understanding of the role of pharmacist. A lack of leadership from the pharmacist and/or management, which included support, motivation and encouragement was reported by a number of respondents within this study, which made the implementation of HLP more challenging. An absence of opportunity to network with other pharmacists involved in the HLP project and lack of favourable connections with other local health providers mentioned in this study, reflect the professional isolation and lack of integration of community pharmacy.

Importantly, the influences of HLP implementation identified in this study (*direction and impetus, internal communication and planning, staff, community fit, support*) can all be linked to the HLC role within the pharmacy. This was evident in reports that that the HLCs adopted a leadership role within the pharmacy, supporting staff performance, encouraging involvement in the HLP activities and directing internal communications to allow staff to contribute ideas to the implementation planning. The introduction of the HLC role was also reported to have had a positive influence in supporting the implementation process.

The reported strategies employed in this study (Appendix 3.6) are reflected in the list of individual and organisation facilitators of change in community pharmacy¹⁷² as compiled by Roberts *et al.* (Table 3.5). This included facilitators of education and training for pharmacy staff; enhancing communication skills and enhancing motivation, as discussed in this study. Similarly, organisational facilitators such as adapting the physical environment, introducing incentives, delegation of tasks, managing customer demand/expectations and innovative practice orientation were evident within this study. All of which, Robert *et al.* makes mention.

Activities related to monitoring are recognised as significant factors within implementation research^{175, 233}; but in the present study they were observed to be lacking. This finding is consistent with studies published in other disciplines^{234, 235}. Evaluation of outcomes and monitoring of staff performance, with regards to fidelity and quality measures, which the literature reports are more evident in innovations that have achieved *sustainability*, were largely absent in all of the pharmacies but were beginning to emerge.

Implications of the study

This is the first study to examine the process of implementation of the HLP project. These findings can contribute considerably to the development and evaluation of innovation within community pharmacy in the UK. Further, these findings identify specific strengths and areas of the HLP project which can be reviewed within the local context, to enhance the implementation process and promote sustainability.

Strengths and limitation of the study

Despite the validity of the findings against the relevant literature presented, a number of limitations associated with the process of conducting and analysing the qualitative interviews were identified. These limitations involve the characteristics of the sample used, the methods followed to recruit participants, analysis of the interview transcripts and the validity of the results.

Regarding the characteristics of the sample, it was initially intended the use of a purposive sample to increase the validity of the results across the population of community pharmacy staff. However, a convenience sample was used instead, as recruiting participants on arrival at the pharmacy was a challenging process, with a large number of potential participants unable to afford the time away from their work duties. Choosing a purposive sample would have allowed for the choice of participants to

be more selective, involving selecting the most adequate sample for the purposes of the research and considering variables such as gender, age or professional role. This is a more complex sampling technique than the one used in this research, incurring more time, effort and costs, but would have ensured a higher variability in the participants and validity of the results. Instead, using a convenient sample was more cost-effective and less time-consuming, involving the selection of participants by their availability and willingness to participate, without considering specific variables or characteristics that may have had an impact on the quality of the data collected. Despite being considered as less reliable in terms of the data collected, the convenience sample used for this research was still considered as valid, as the participants selected belonged to the population-target, and were therefore able to produce meaningful results.

Another likely limitation associated with conducting the interviews was the inexperience of the researcher in conducting qualitative interviews. Piloting the interview schedule provided an opportunity for the researcher to practice and gain experience, however given the limited time frame, only one pilot interview took was undertaken which was consequently included in the data analysis. As a result, it is likely that the earlier interviews were not as rich in terms of the data collected, and that the quality of data improved progressively as the research gained more experience. This potential limitation was recognised prior to conducting the interviews and therefore the interview checklist (Appendix 3.4) was designed and adopted on commencing data collection in order to ensure consistency.

In qualitative research, there is no standard and established method capable of capturing absolute truth, since it is more interested in the quality and meaningfulness of the results rather than the attempt at generalising the results. Regardless of the sample characteristics and the method of analysis used, qualitative research involves small samples, and bias and error will always occur as a consequence. Therefore reflexivity and or a reflexive awareness of the problematic status of the author's own claims to knowledge is an important element in the research process and may influence the reported outcomes. The approach taken in this research assumed that the role of the research is important in the construction of the whole process of the research, from the development of the broad area of research and the initial questions, through the design, undertaking and analysis. Consequently steps were taken as described in Section 3.2, to emphasise participation, conceptual rigour and philosophical coherence as means of establishing quality and relevance.

In this chapter, framework analysis has demonstrated its use as a methodology for implementation research. Using the implementation stages of the GIF as overarching themes, thematic analysis of the data was performed under each stage. It could be argued that interviews be designed and coded using

themes from an implementation *factor, strategy or evaluation*, as this may elicited further insight; however, this was not considered at the time of developing this study.

It may also be suggested that adopting framework analysis may inhibit the development or refinement of conceptual models; however efforts were made to conduct detailed thematic analysis of the data so as to recognise further themes.

Finally, this work focussed on the implementation of the HLP project within community pharmacies in Portsmouth; a city in south England where one commissioning body was involved in the management of community pharmacy services. However the findings suggest that the approach taken within this study would also be beneficial in other areas of the UK.

Further work

The HLP project encompassed the delivery of a range of community pharmacy services and activities. This included services whose focus were on medication usage, such as respiratory medicines usage review and monitoring services, in addition to services focussed on promoting healthy lifestyles, such as screening and tackling local public health issues.

Further work exploring the implementation process of specific services may have revealed a distinct set of activities and considerations associated with different services.

Further to this, since this study was conducted little over 12 months since the introduction of the HLP project into Portsmouth's community pharmacies, the literature recommends that sustainability of public health interventions should be assessed no sooner than one year after the initial funding source to set up the initiative ends²³⁶. Therefore, in a later chapter the pharmacies shall be re-visited to investigate the sustainability of the project.

3.5 Conclusion

The literature acknowledges the paucity of theory cited in implementation research. However, this study provides an example of where a conceptual framework can be employed to provide a structure for assessing implementing innovation. Moreover, this study is the first to report on the employment of implementation literature in the context of community pharmacy practice.

Through utilisation of the Generic Implementation Framework, the various implementation concepts could be identified with and articulated to provide a detailed evaluation of the HLP implementation process.

The implementation influences, factors and strategies identified within this work are broadly consistent with specific reports within the pharmacy practice literature. The HLC role was significantly implicated in successful implementation of the HLP project. In the next chapter, this finding will be explored and reported on further.

Chapter 4 : The Health Living Champions' Network

4.1 Introduction:

An evaluation of the HLP project demonstrated a positive impact on community pharmacy services in Portsmouth¹²¹. The conclusions derived from the work conducted in Chapter 3 and subsequent publication¹²¹ identified the HLC contribution to the apparent success of the project.

In Portsmouth, it was reported that a 'pharmacy community' was created¹²¹, whereby the HLCs formed a networking group and met periodically. HLCs reported that these meetings acted as a source of motivation to engage in HLP activities¹²¹. The local commissioner, therefore, continued to facilitate and fund networking meetings. The aim of this was an attempt to sustain enthusiasm around HLP activities and support the role of the HLC with education and professional development.

Meetings were arranged by the local pharmaceutical advisor (PA) and back-fill for attendees was commissioned through the local commissioners. Meetings were held at a local community centre on a Wednesday afternoon, when many of the local GP services close for training and the subsequent demand for prescription services in the community pharmacy decreases.

HLCs were notified of forthcoming meetings through postal invitation addressed to the community pharmacy of employment and where possible through the community pharmacy email. An informal agenda for the meetings was arranged by the PA, whereby time was allocated for the HLCs to network amongst themselves. The PA would deliver an update on current levels of activity in commissioned HLP services and discussed any HLP developments, for example, plans to introduce further commissioned services. The final part of the session was allocated for a presentation delivered by an invited practitioner affiliated to one of the services delivered through the HLP project, for example, a member of the local drugs intervention team or the local sexual health team. The focus of the presentations was to describe the specific activities of the service, detailing their particular area of expertise as well as promoting an understanding of the potential referral pathway from community pharmacy through signposting appropriate customers.

These meetings were initiated in February 2011, following the first group of HLCs successfully completing their HLC qualification in Understanding Health Improvement as accredited by the Royal Society of Public Health¹³⁰. The local commissioners continued to fund and facilitate meetings; with the number of attendees increasing as further individuals enrolled and successfully completed the HLC

qualification. At the time that this study was conducted, November 2013, there were 33 qualified HLCs employed in Portsmouth's 32 community pharmacies.

In this chapter, the research focussed on exploring the role of HLCs and investigating the significance the HLCs attribute to attending HLCs meetings.

4.1.1 The 'Champion' concept

Chapter 2 of the thesis explored the limited literature on the role and contribution of community pharmacy support staff. Further to this, in describing the introduction of the HLP project and the associated accreditation criteria, the HLC role was introduced.

The concept of introducing champions into an organisation has been reported in the literature; indeed the champion role within community pharmacy has also been investigated.

Greenhalgh *et al.*¹⁶⁹ defined champions as "*individuals who dedicate themselves to supporting, marketing, and 'driving through' an innovation*". Champions have been referred to by a variety of terms such as change agents, opinion leaders, sponsors, and internal entrepreneurs^{169, 237}. Greenhalgh *et al.* explained that champions are not necessarily opinion leaders as they may or may not support an innovation.

The concept of champions was implied in Rogers'²³⁸ seminal research on diffusion of innovations in which he described the "*change agent*" as an individual who "*influences clients' innovation-decisions in a direction deemed desirable by a change agency*".

The role of champions is relatively new to pharmacy, although it has been studied extensively in the management and medical literature²³⁹⁻²⁴¹. The influence of medical opinion leaders in the diffusion and adoption of medical innovations has been recognised for almost half a century²⁴². The literature suggests that when implementing change, leadership needs to involve change agents as local champions or clinical opinion leaders to influence the practice of their peers²⁴³. Clinical opinion leaders tend to be those individuals who are "respected sources of information"²⁴⁴ and are able to exert influence over others' decision making, not as innovators but as early adopters who are well integrated with their peers. These are informal leaders who are neither authority figures nor working in administrative roles, but practitioners who "walk in their [colleague's] shoes"²⁴². They influence patterns of practice, potentially leading to high quality care and patient outcomes, and they may accelerate the uptake of knowledge²⁴⁵.

The literature on the role of champions within a pharmacy setting in promoting innovation is scarce and the nature of their role seems to be diverse; however where the role has been reported on, the evidence indicates a positive contribution in facilitating the adoption of innovative practices. For example a 2011 study by Berry *et al.* describing the feasibility of an 'Asthma Friendly Pharmacy' community pharmacy innovation, identified that a pharmacist champion at each participating community pharmacy was critical to developing initial enthusiasm for the model, planning a site-specific workflow, orienting staff, and reinforcing procedures to encourage long-term behaviour change²⁴⁶. Similarly, a recent UK-based initiative, 'A Carer-Friendly Pharmacy'²⁴⁷, attributed the appointed carer champion to the success of the initiative. The carer champion is a pharmacy member of staff who takes on the role to lead and facilitate carer referrals and act as a contact point for external agencies, such as the local carers centre and GP practices to support a multi-disciplinary approach.

Westrick *et al.* reported that the effectiveness of a 'service champion' was key to the sustainability of a community pharmacy-based immunisation service. The role encompassed activities to continuously promote the service within the pharmacy. The authors also recognised their significant role in the implementation of the service in a way that was compatible with the host pharmacy; this was highlighted as a significant facilitator in the pharmacy adopting the immunisation service²⁴⁸. In the same way, a study by Melczak *et al.* recognised the value of an 'innovation champion' in implementing an innovative patient outcome measure in the context of a community pharmacy medicines management service. The 'innovation champion' was identified as the individual who was particularly enthusiastic about the intervention, and as someone likely to lead the further development of innovative practices throughout the professional community²⁴⁹.

Finally, Shoemaker *et al.*²⁵⁰ identified the critical role of a 'change champion' in community pharmacies adopting and implementing health literacy tools. This individual was described as someone who took responsibility to use and understand the tool. The authors recognised that the change champion was able to identify the advantages of adopting the intervention. It was observed that the change champion anticipated that the intervention would provide valuable information and improve customer care and satisfaction and be professionally beneficial. It was concluded that the contribution of the change champion facilitated the pharmacy team's decision to adopt the tools. Further to this, Shoemaker *et al.* recognises the alignment of their findings with Rogers' Diffusion of Innovations model²³⁸ in describing the significance of 'change champions' in organisational capacity and anticipating the relative advantage of innovation in the process of adopting and implementing innovation.

In addition to the aforementioned examples, a study conducted by the University of Manchester²⁵¹ reviewed the commissioning and delivery of services from community pharmacy in England. The authors identified that collaborative innovations (such as a locally commissioned pharmacy service) often relied on a central person, such as a pharmaceutical advisor within the commissioning organisation, to champion the innovation and influence others to adopt it. This was made evident when an individual championing an innovation left the role; contractors consequently dropped out and activity levels fell. Soon after this, commissioners perceived the innovation to be unsuccessful. The authors also reported on the important role 'innovator pharmacists' and 'champions' working within community pharmacies play in driving the development of commissioned services.

Despite this, the introduction of champions within pharmacy has been largely overlooked in the UK. The Pharmaceutical Journal reported in 2011, that the role of pharmacy assistants in promoting and delivering public health services had been largely ignored and described the advantages of pharmacy assistants taking up a 'public health champion role'. The article reported that pharmacy assistants frequently had a long association with the users of the pharmacy and the fact they frequently come from the local community they work within. It is suggested that this could help in establishing an understanding of customers' circumstances, which the pharmacist may lack.²⁵²

Further to this, researchers have continued to study the potential of champions in the adoption of innovation. Doucette *et al.*¹⁵¹ in investigating pharmacy entrepreneurial orientation and its effects on the provision of innovative pharmacy services, suggested that in order to foster innovation, managers should appoint 'champions' who are given a level of autonomy to assist in developing promising pharmacy service concepts. A 'Champion' in this context were described as someone who develops an idea and pushes it forward for evaluation and if acceptable, guides implementation. The authors also emphasised that in order for champions to be successful, they either need their own authority or close support by the pharmacy's decision makers²⁵³.

Garcia-Cardenas *et al.* chose to use Roberts *et al.*'s model of implementing community pharmacy services²⁵⁴ in informing the design of a community pharmacy medication review service. Roberts *et al.*'s model recognised that organisational structure of the pharmacy, lack of an internal implementation champion, and lack of priorities and goals, as major barriers in the pharmacy hindering the implementation of innovation. Garcia-Cardenas *et al.* facilitated the nomination of an internal champion, to support and drive the implementation of the medication review service. The internal champion set priorities and goals with clear expectations in regards to work performance and results of the service to the community pharmacy team. The appointment of an internal champion was one element comprising an innovative approach for the implementation, which according to the

evaluation, supported the implementation process of the service (measured by the time taken to integrate the service into routine practice; and the number of patients recruited and rate of follow-up)²⁵⁴.

The concept of an internal pharmacy champion was also identified by Moullin *et al.*, in an earlier study in the development of a theoretical implementation model for community pharmacy. The individual appointed to this role took charge of the implementation team during the implementation of a pharmacy service. Further to this, it was the role of the internal champion to analyse barriers and facilitators and subsequent tailoring of the intervention²⁵⁵.

Coakes *et al.*²⁵⁶ drew on extant research in supporting the notion that innovation is facilitated and supported by innovation champions. However, Coakes *et al.* furthered the discussion in identifying innovation champions as 'special people', with particular personality types and psychological profiles. The research concluded that in order for innovation champions to succeed in championing innovations in organisations, they needed both procedural and resource support, and social and cognitive support. The authors recognised that the influence of innovation champions came through social contacts, multiplied through the communities in which they participate, through the genuine esteem in which they are held. The authors recommended that developing a community around such champions makes practical sense for organisations and will potentially initiate further innovative practices.

4.1.2 The concept of a 'community of practice'

Svinivki and McKeachie^{257, 258} proposed that working in a group was more dynamic and motivating than working alone. The authors concluded that the opportunity to work alongside peers, promotes the individual's ability to restructure their knowledge and understanding of concepts²⁵⁹. Furthermore, it has been identified that group work facilitates the critical discussion of an idea in a way to advance problem solving and conceptual understanding²⁶⁰.

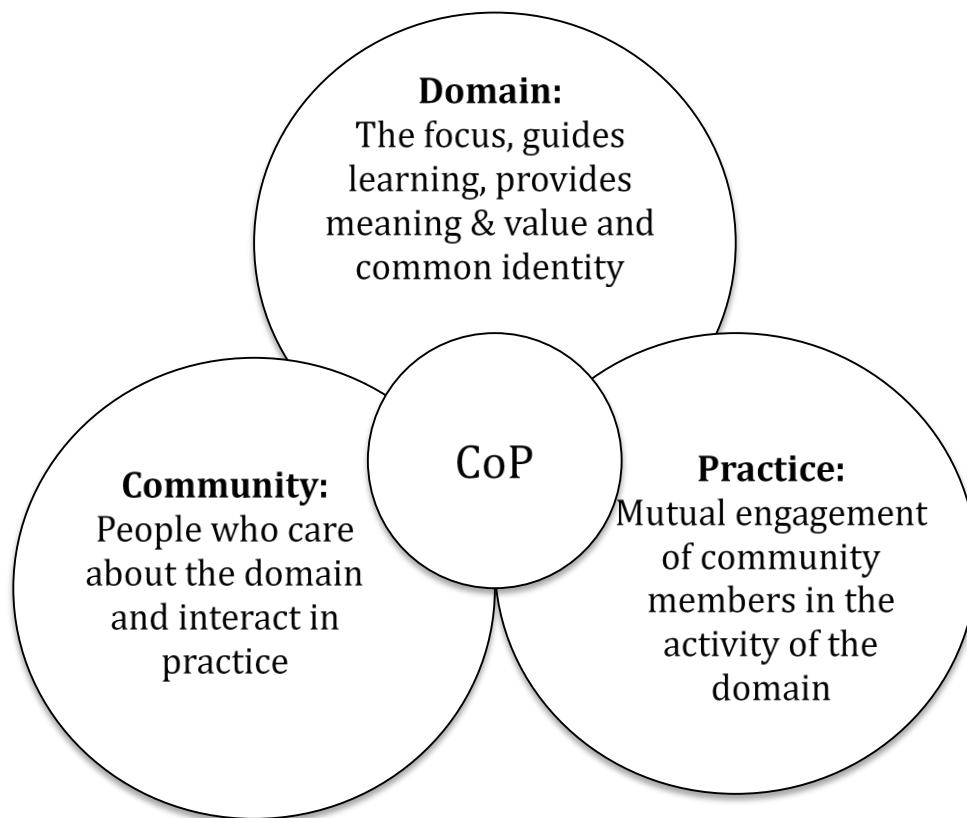
Lave and Wenger²⁶¹ used the term 'communities of practice' in conducting research on apprenticeships. A brief definition is that communities of practice are groups of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly²⁶². Other terminology cited in the literature has been used encompassing a similar philosophy; collaborative learning communities and professional learning communities appear most frequently. Collaborative learning communities have been described as small groups of individuals who encourage each other to enhance their own and each other's learning with the purpose that sharing ideas and responding to others, enhances thinking and deepens understanding²⁶³. Li *et al.* built on this definition

in describing the four fundamental aspects of a collaborative learning community; namely: empowering others, building communities, continuing support and being patient²⁶³. Similarly, professional learning communities, as described in the literature, highlight seven aspects which resonate with the values of the HLC group. Hord and Sommers²⁶⁴ describe these components as: a shared belief, set of values and vision; shared and supportive leadership; collective learning; applying the knowledge; supportive conditions and shared personal practice. Wick²⁶⁵ more narrowly defines a community of practice (CoP) as a group of professionals with similar task responsibilities, who promote learning through membership communication. This type of CoP affords members the opportunity to share professional practices and tools.

The author proposed that the group of HLCs could be considered as a CoP²⁶¹. This group of healthcare professionals formed soon after the initiation of HLPs in Portsmouth and became a key feature in the implementation of the project.

The term community of practice will be used in the context of the investigations carried out in this chapter of the thesis, as this is consistent with the literature citing Lave and Wenger's²⁶¹ notion of a CoP. Three characteristics of a CoP have been proposed (Figure 4.1): the domain, the community and the practice. The domain refers to the community having an identity, a shared interest, a commitment and shared competence that sets them apart from other communities or groups. The community works towards their interests: members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other²⁶². Finally, the members of a CoP are practitioners. They develop a shared repertoire of resources to share practice and highlight the embedded nature of practice²⁶⁶.

Figure 4.1 The three inter-related key elements of a community of practice (COP) ²⁶¹



Within the context of this study, the three characteristics as described by Wenger²⁶² relate to the group work that is central to the role of the HLCs and is fundamentally about dialogue and collaboration (*practice*). The *community members* are the HLCs and the *domain* is the activities comprising the HLP project.

Lave and Wenger's initial work acknowledged that the concept of CoP was through investigating the learning of apprenticeships where they identified a set of social relationships through which learning took place²⁶¹. Expecting to find that the learning would reflect the novice/master type relationship usually associated with apprenticeships, they were surprised to observe that learning predominantly took place with colleagues and more advanced apprenticeships. Once communities of practice were identified, they could be seen in a variety of settings from healthcare through to industry and education.

4.1.3 Community of practice in healthcare

Improving productivity was one of three strategies put forward as a means of addressing the funding shortfall projected for the NHS in the UK for 2011-2017²⁶⁷. Funding shortfalls are not exclusive to the

NHS; health services across the world are faced with the need to deliver high-quality care within economically constrained environments²⁶⁸. Improving productivity in the healthcare sector means adding value to how resources are used to deliver high quality healthcare that meets the needs of the people; that is, to deliver high-quality healthcare effectively. In an attempt to meet this challenge, other industries have explored strategies which have the potential to enhance organisational performance. One such strategy has been the promotion and fostering of communities of practice that have gained recognition in the business sector for improving organisational performance^{269, 270}.

In business, CoPs are promoted as drivers of knowledge management, as a mechanism for the sharing of tacit knowledge, sparking innovation, reducing the learning curve for new staff, and as a means of creating social capital and adding organisational value^{270, 271}. These claims have led to communities of practice being promoted in healthcare as a tool to enhance knowledge and improve practice²⁷². It appears, they provide a means for knowledge to cross boundaries, generate and manage a body of knowledge to draw on, promote standardisation of practice, and “innovate and create breakthrough ideas, knowledge and practices”²⁷¹.

To date, there have been two systematic reviews focused on the application and effectiveness of communities of practice in the context of healthcare. The first review explored the role of communities of practice in improving the uptake of best practices and mentorship of new practitioners²⁷³. The authors also identified and compared existing CoP descriptions from the health and business literatures and common themes of social interaction, knowledge sharing, knowledge creation and identity building were identified.

Andrew and Ferguson²⁷⁴ provided the most contemporary definitions and descriptions of CoP in the context of nursing. In a report on a CoP of academic healthcare instructors and healthcare clinicians, the authors offer a description that captures the essence of Wenger’s²⁷⁵ definition and also shows the application of the concept to a healthcare setting: “The contemporary interpretation of communities of practice promotes a dynamic social participative approach to learning and discovery”. The authors provide clarification of how a CoP promotes learning by affirming that communities of practice result from “an integrated approach to learning, achieved through a combination of social engagement and collaborative working in an authentic practice environment”, in which “skills and talents of like and unlike diverse populations can be harnessed to challenge and develop professional practice”. The learning involved in communities of practice is elaborated further; hypothesising that learning in a CoP occurs through a “deep interest of their members, encouraging them to share personal histories and journeys, weaving a narrative to contextualise professional practice development”.

Whilst the authors of the review searched for both quantitative and qualitative studies, no quantitative studies for healthcare were found. The authors concluded that the actual structure and function of healthcare communities of practice varied greatly, restricting the evaluation of their effectiveness; therefore this review was only able to shed light on the first objective of comparing CoP descriptions with the actual effectiveness remaining unclear.

The effectiveness of communities of practice in healthcare was the aim of a further systematic review by Ranmuthugala *et al.* ²⁷⁶. This review looked at how and why communities of practice have been established in healthcare with the aim of informing the development of a framework to systematically evaluate communities of practice effectiveness in sustaining improved practice initiatives. The authors found the emergence of CoP terminology in healthcare research to be a very recent phenomenon. Whilst improved outcomes reported included improvement in guideline development, patient assessment, reduced frequency of insurance liability claims received by hospitals and improved adherence to evidence based processes, the multifaceted nature of the interventions made it difficult to differentiate the impact of the CoP intervention from other variables.

CoP studies in healthcare found in these two systematic reviews mostly focused on specific speciality areas of healthcare practice rather than practitioners themselves, with the aim of facilitating interdisciplinary collaboration to improve healthcare delivery and outcomes. There are no specific published studies relating to the involvement of the pharmacy workforce in CoPs.

Despite this, there are important conclusions that can be drawn from the literature regarding communities of practice within healthcare; one of which includes what constitutes a functioning CoP within a healthcare setting. It has been recognised that each element of the CoP (community, practice and domain) has prerequisites necessary for the formation and success of the CoP. The literature described the antecedents to community to include the initiative, interpersonal skills, and work ethic of the community members. Furthermore, community members must join the CoP voluntarily (without coercion) as a show of personal commitment to the domain and self-motivation to improve practice²⁷⁷⁻²⁸⁰. Necessary for the formation of relationships within the community, strong communication skills promote meaningful collaboration and mutual engagement ^{246, 280}. Meaningful, sustained relationships and shared ways of engaging are viewed as two core elements of a CoP ^{274, 275, 281}. In addition, trust among the community members is necessary for the development of sustained relationships that promote accountability and a culture of independency^{277, 280, 281}.

A supportive work environment has been identified as providing an important antecedent to practice. Employers and organisations that foster communities of practice must be willing to invest in members

who participate in the CoP. Community members must be granted time away from their work to participate in the CoP^{278, 280, 282}. It has been reported that communities of practice flourish in an environment that is “ripe for growth, propelling the person from individual level dependence to team focused levels of trust, potency, and commitment”²⁸³. The CoP must also be supported both structurally with physical spaces in which members can meet and technologically, with means to record their activities^{277, 280}.

In order to achieve a sustained interest in the domain, it has been recognised that CoP members should have an appreciation of the context, content and importance of the domain, as this has been shown to facilitate their commitment^{274, 277, 278, 280, 281, 284}. The domain must instil in the members a sense of unity of purpose within the practice environment. For the domain of interest to be considered an element of a healthcare CoP, the domain must be a practice-centred problem, concern, or interest²⁷⁴.

In the absence of one or several of the aforementioned conditions, strategies have been employed to support communities of practice. For example, in recent times, varying forms of online technologies have been employed to support collaborative knowledge sharing and learning within and between groups of healthcare professionals through the development of Virtual Communities of Practice (VCoPs)²⁸⁵⁻²⁸⁷.

4.1.4 Virtual Community of Practice (VCoP)

VCoPs primarily describe a network of individuals who share a domain of interest about which they communicate and share experiences, problems and solutions online; with the aim of improving the knowledge of each participant and the overall domain²⁸⁸. VCoPs support interaction, collaboration and learning among professionals especially where face-to-face interactions are limited due to geographic spread, organisational boundaries, costs and time differences²⁸⁶. Studies in healthcare research reveal that VCoPs potentially support and enhance how healthcare teams that may not normally work together, might use online interaction. It has been reported that VCoPs may facilitate interaction between healthcare professionals, in order to collaborate, share, debate, resolve, integrate and implement different perspectives on practice to improve and inform evidence-based decision making²⁸⁶.

VCoPs have also been noted as being capable of extending healthcare practitioners’ learning beyond face-to-face opportunities by promoting distributed and continued learning^{285, 286}. Other studies have also explored how collaborative conversations in VCoPs can help to strengthen intra-professional ties,

enhance information access and improve support that would otherwise be unavailable to healthcare teams²⁸⁷.

Despite evidence revealing that VCoPs can improve informal peer support and networking, improved shared decision making and overcome professional isolation amongst geographically dispersed teams of health professionals²⁸⁹⁻²⁹², research also suggests that many VCoPs developed for health professionals fail because rates of online interaction are very low²⁹³. Explanations for this have been cited in the literature. Online interaction may be conditioned by whether an organisation sanctions the use of a VCoP by its employees for its potential for improving practice; whether members may feel their contribution is important and useful to share and whether members trust that the information being collectively shared in the community is not misleading or overtly critical^{294, 295}. In addition, busy schedules, topic relevance of the online community, Information and Communications Technology literacy of participants, presence or lack of moderation and appropriate tasks to enhance participation, lack of feedback/responses to posts and forgotten passwords and usernames, can all have an effect on online interaction²⁹⁵.

The potential for using a VCoP with the HLCs has not been explored; this is the topic of research described later in this research.

4.1.5 Aim and objectives

The aim of the research reported in this chapter **was to** investigate the role of HLCs and explore the significance the HLCs attribute to attending HLC meetings.

The research had the following objectives:

1. Investigate the self-reported activities of HLCs
2. Explore the influence attending HLC meetings has on the HLC role
3. Assess the consensus of opinion amongst HLCs on the significance of meetings towards the sustainability of HLP activities

4.2 Methodology

As a general description, qualitative research aims to be subjective, inductive and non-generalisable²⁹⁶, it investigate how people behave in a particular social setting and explore what

meanings people actually wish to convey when describing personal experiences²⁹⁷. Qualitative methods have been applied in the investigation described below.

4.2.1 Qualitative methods

Different qualitative methods are applied to research depending on the theoretical and practical consideration of the study²⁹⁶. As discussed in Chapter 3, qualitative research has its origins in social sciences and humanities, where the theoretical approach used by researcher aims to provide conceptual understanding of social interactions, societal 'norms' and relational phenomena²⁹⁸.

The approach to undertaking qualitative research can vary at different levels including the 'systems of enquiry' available for data collection methods. They are usually applied through observations, interviews (either individual or focus group), or analyses of documents and other written materials²⁹⁹. The study reported in this chapter of this thesis involved focus groups.

4.2.1.1 Focus groups

Focus groups have their origin in four separate traditions: social science, organisation research, community development and market research¹⁹⁷. In medical education research, focus groups have been commonly used to develop items for inclusion in questionnaires or in hypothesis generation³⁰⁰⁻³⁰². The definition of what constitutes a focus group varies between reported studies. One definition is "a group discussion exploring a specific set of issues"³⁰³.

As a research method, Sim³⁰⁴ outlined that focus groups can have four broad advantages:

1. They provide information on the 'dynamics' of attitudes and opinions in the context of the interaction that occurs between participants.
2. They may encourage a greater degree of spontaneity in the expression of views than alternative methods of data collection.
3. They can provide a 'safe' forum for the expression of views.
4. Participants may feel supported and empowered by a sense of group membership and cohesiveness.

As focus groups are a form of group interview, many of the issues applying to one-to-one interviews also apply to the sampling, data collection, analysis, theory and ethics of these groups. Researchers using this method must decide whether the topic would benefit from the discussion, interaction and comparison between groups. Some subjects, such as deeply personal issues, may be better explored in a safer and more productive way through one-to-one interviews. Ideally, sampling should aim for enough heterogeneity within the group to stimulate discussion but sufficient homogeneity to facilitate comparison between groups¹⁹⁷. There is no defined number of subjects who have to be present to form a focus group, although numbers of between eight and 12 have been suggested as ideal; although studies involving between four and six participants are also acceptable³⁰⁴. The group is coordinated by a moderator or facilitator, who may be assisted by a fellow researcher acting as an observer. This assistant's role will most often be to take notes during discussions to give added information and meaning to the group interaction, non-verbal cues and discussion³⁰⁵.

As with one-to-one interviews, focus group studies need to consider venues when planning meetings. Meetings need to be confidential and undertaken in a venue with appropriate facilities to ensure adequate recording of data. Although there is 'no such thing as a neutral or ideal location', the venue(s) chosen should aim to optimise participation³⁰³.

Analysis of data should recognise that focus groups can overemphasise consensus and can be dominated by either influential or opinionated group members³⁰⁶. In addition, analysis should include the dynamic interactions within the group. This is particularly important, as it is problematic to generalise from a focus group. This is partly because participants, as previously described, are usually selected through a process of non-random sampling and, in addition, there may be a tendency for more self-confident and articulate individuals to agree to take part in a focus group³⁰⁷. Moreover, as focus groups are contextualised, it cannot be assumed that the information given by a subject in that group is a predictor what they may say or do in a different social situation³⁰⁴.

4.2.3 Description of methods employed

In explorative studies, such as this, the interview is the main method of data collection³⁰⁸. The interview facilitates the illumination of participants' descriptions of the phenomenon of interest³⁰⁹. Furthermore, from a CoP perspective, the meanings the HLCs assign to their experiences could be

accessed through dialogue. Thus in this study, as the area of interest was the descriptions of the HLCs' experiences in meeting and networking with each other, the focus group was the data collection method of choice. Two focus groups were conducted with the study participants available.

4.2.3.1 Methodology of the focus groups

The pharmaceutical advisor (PA) was contacted for permission to attend the next HLC meeting. An outline of the study objectives was sent to the PA, which was followed-up by an email including a copy of the study information sheet and a copy of the study consent form (Appendix 4.1). A request was made to include these documents alongside communications to HLCs for the next HLC meeting.

At the HLC meeting, before each focus group, a copy of the topic guide was reviewed and a digital tape recorder was prepared, to audio tape the interview. The recordings can be transcribed verbatim. The disadvantage of recording is that they can make participants uneasy. However this effect generally disappears after the first few minutes when participants are preoccupied in conversation³¹⁰.

The interview schedule was created iteratively during the research process based on the substantive literature around communities of practice. Having an understanding of the factors associated with the functioning of a CoP allowed the researcher to develop the interview schedule. The interview schedule used during the focus group can be broadly classified into different sections, which focused on:

- Identifying the self-reported roles and activities undertaken by HLCs,
- Exploring the HLCs' motivations for attending the HLC meetings,
- Investigating individuals' experiences in attending the HLC meetings,
- Assessing the consensus of opinion amongst HLCs on the significance of meetings towards the sustainability of HLP activities.

A semi-structured interview schedule (Appendix 4.2) was developed by the author to enable the discussion to flow and to allow probing with regard to areas identified as potentially relevant to the specific research questions.

As the HLCs arrived at the venue they were provided with a copy of the study information sheet and a copy of the consent form, which they were requested to read prior to consenting to participate in the study. Further to this, brief profiling of the individuals was conducted, to identify place of work, current job role, age and years of experience working in community pharmacy. This information was

gathered to obtain further information on the profile of individuals undertaking the HLC role. Individuals consenting to participate in the focus groups were then issued with a name badge.

Two focus groups were arranged. The 20 HLC attendees (representing 15 pharmacies; 5 of the pharmacies sent two HLCs) were split into two groups, each of 10 volunteering participants. An attempt was made to divide the HLCs into heterogeneous groups and to avoid persons who work together from being in the same group. The HLCs were allocated a group to equally divide the number of persons working for multiple-group pharmacies and independently owned pharmacies into the two groups. Further to this, the focus group interview was conducted in a separate room away from the meeting area, so that the second group of HLCs could not overhear communications.

The researcher acted as moderator. An assistant was present acting as an observer and taking field notes during discussions and keeping time. The assistant was able to attribute the audio communications to the appropriate individual by reading their name badge. Following the two focus groups, the audio was transcribed verbatim by the research into a Microsoft Word file.

4.2.3.2 Data analysis

Open-ended questions usually provide qualitative data and there are several methods used to analyse qualitative data. Dawson³¹¹ presented four methods. The first is thematic analysis: themes usually emerge from the data and are not imposed by the researcher. Also, in this type of analysis, the researcher does not need to wait until he or she completes the data collection, so analysis can start once any part of the data is available. The second method is comparative analysis, which involves comparing and contrasting information that is obtained from the different participants, until the researcher is sure no more issues are identified. The third method is discourse or conversational analysis, which focuses on speech patterns, the frequencies of these patterns and their implications. The fourth method is content analysis, which is defined as 'any technique for making inferences by systematically and objectively identifying special characteristics of messages'³¹².

The content analysis approach is one of the most popular approaches to analyse open-ended questions answers^{313,314}. It is commonly utilised in health research to improve interpretation of data^{315,316}. Content analysis may be undertaken in an inductive or deductive way³¹⁷.

An inductive approach to the qualitative analysis was employed, applying methods described by Krueger and Casey³¹⁸. Following the focus groups, and prior to transcription, a written summary was made by the researcher to record an outline of the main ideas that emerged during the discussion. As

advocated by Pope *et al.*³¹⁹, content analysis of the data from the focus group transcripts occurred in between the two focus groups in order to improve moderation techniques and maximise the information gained. Principles from Heidegger's hermeneutic circle³²⁰ were adopted for data analysis, whereby the researcher read and re-read the discussion transcript in detail, identifying and coding key concepts and ideas by highlighting discrete words, sentences and series of sentences relevant to the research objectives^{320, 321}. These quotes formed the basic meaning units for analysis, which were categorised through a process of comparing and contrasting. Preliminary themes were then identified to organise and understand the data³²².

To enhance trustworthiness, an additional researcher independently analysed the transcripts from each focus group, reading and re-reading the transcripts to confirm the emerging concepts, ideas and themes³²³. Finally, a further discussion, involving the researcher and the assistant took place during which data from the two focus groups were integrated, discussed and clarified. Factors including frequency, specificity, emotional expression and extensiveness of the comments were also considered during the process^{318, 324}. Through on-going interrogation of the data, maps and diagrams were developed in order to accurately depict the perspectives of the HLCs. Differences in opinion were considered with further discussion until consensus was formed on the constructs and themes to be included in the analytical model.

4.2.4 Ethical approval

This research received a favourable opinion from the Portsmouth NHS Local Research Ethics Committee (ref 10/H0501/6) 22/01/10 (Annexe 1).

4.3 Results

4.3.1 Focus groups

Twenty of the 33 HLCs employed in Portsmouth community pharmacies agreed to participate in the focus groups, all but one of whom were female. Each focus group lasted between 40-50 minutes. Table 4.2 details the characteristics of the participants.

Table 4.1 Characteristics of the focus group participants

Participant identifier	Focus group (FG)	Age (years)	Years of experience in CP	Job role	Place of work
FG1 P1	1	54	12	MCA	MC
FG1 P2	1	59	21	MCA	MC
FG1 P3	1	48	16	MCA	SC
FG1 P4	1	53	9	PT	SC
FG1 P5	1	23	4	PT	SC
FG1 P6	1	39	4	MCA	MC
FG1 P7	1	63	12	DA	IC
FG1 P8	1	58	20	DA	IC
FG1 P9	1	47	10	DA	SC
FG1 P10	1	49	17	PT	SC
FG2 P1	2	55	20	MCA	MC
FG2 P2	2	55	12	PT	SC
FG2 P3	2	58	4	MCA	MC
FG2 P4	2	21	2	MCA	SC
FG2 P5	2	33	6	MCA	MC
FG2 P6	2	41	7	MCA	SC
FG2 P7	2	62	19	DA	MC
FG2 P8	2	47	6	DA	SC
FG2 P9	2	53	14	MCA	IC
FG2 P10	2	58	11	PT	IC

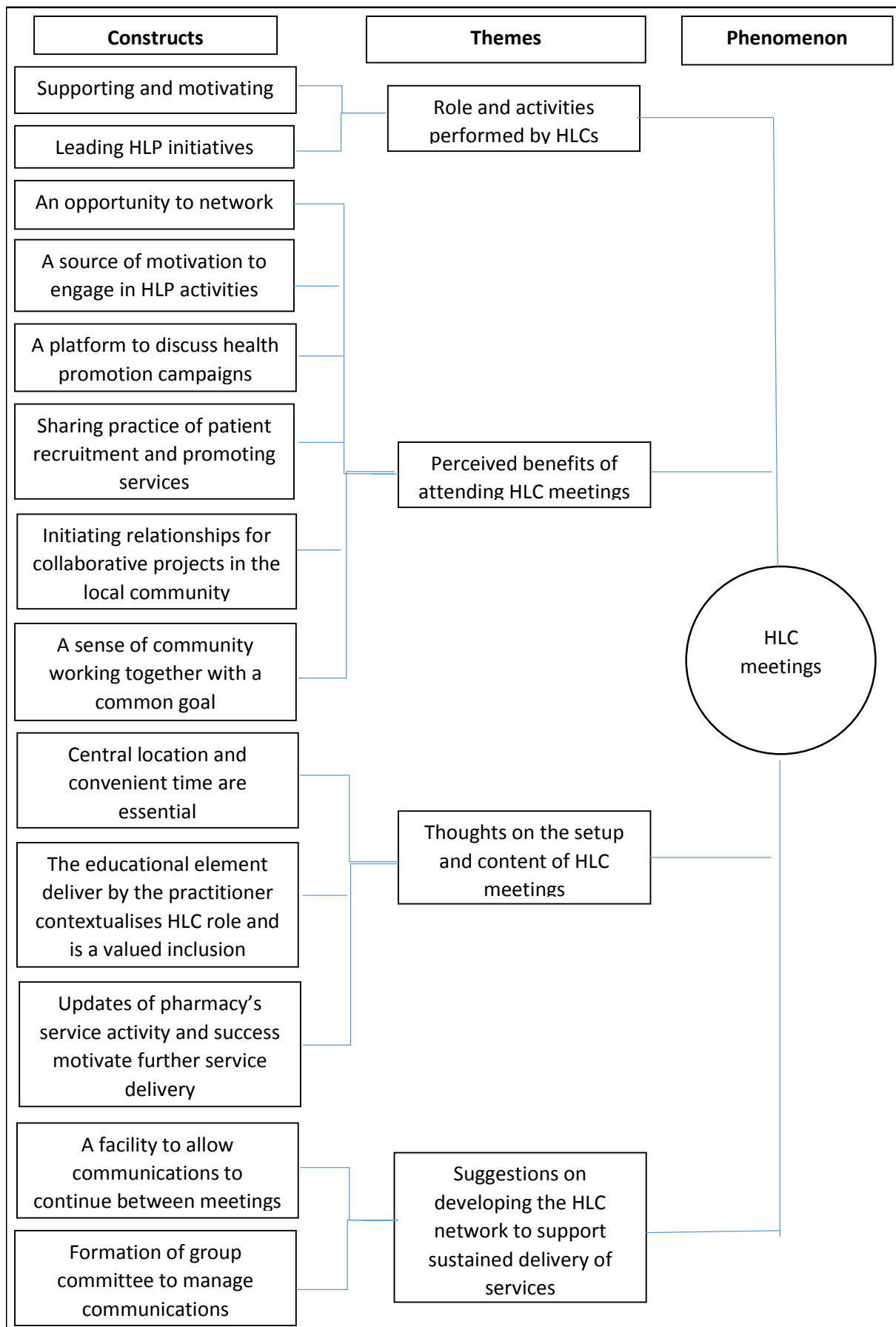
(n= 20; CP: community pharmacy, Job role MCA: Medicines Counter Assistant PT: Pharmacy Technician DA: Dispensing Assistant, Place of work MC: Multiple Chain. SC: Small Chain IC: Independent Contractor)

The average age of the participants was 49 years (range 21-59) and the average number of years of experience within community pharmacy was 11.3 (range 2-21). Ten of the participants were MCAs (mean age: 46, mean years' experience: 11), five were PTs (mean age: 48, mean years' experience: 11), and five were DAs (mean age: 55, mean years' experience: 13).

Seven of the HLCs were employees from five MC pharmacies, nine from six SC pharmacies and four from four IC pharmacies.

The meaning units (the key quotes derived from the content analysis) comprised 203 quotes, which were relevant to the HLC meetings. These varied in length from one word, to a sentence, to a paragraph. Identified concepts and ideas were representative in both focus group discussions; thus the findings were integrated for analysis. Fourteen constructs were established, clustering into four themes, reflecting participants' perceptions and thoughts regarding the HLC meetings (Figure 4.2). The following themes emerged from the analysis: role and activities performed by HLCs; perceived benefits of attending HLC meetings; setup and content of the HLC meetings; and suggestions on developing the HLC network to support sustained delivery of HLP activities. Quotes illustrating these themes and constructs are described in the following section.

Figure 4.2 Analytical model of the issues relating to HLC meetings discussed in the focus groups



4.3.1.1 Focus group analysis – derived themes

In the following section the following abbreviation is used to identify the respondents, FG1 P1: Focus Group 1 Participant 1. Further characteristics of the respondent can be found in Table 4.2.

Role and activities performed by the HLCs

The HLCs reported their role in supporting the delivery of HLP activities in the community pharmacy in which they were employed. They described their responsibility in training and motivating members of the community pharmacy team they worked with in recruiting and supporting customers involved in the HLP activities. The following statements reflect this.

“It’s me who tells the other staff about the new campaigns we are running and how they can get involved and the advice we should be giving to customers.” FG1 P1

“I think that it’s also my role to encourage everyone else in the team because not everyone is always motivated and keen to talk to customers and try to recruit them to what we are doing at that time in the pharmacy.” FG2 P1

The HLCs detailed their role in leading the HLP accreditation process in ensuring service activity is recorded in an online database to share with the commissioners (PharmOutcomes), communicating service targets to their team and making necessary arrangements to introduce new HLP initiatives.

“We are the ones in the pharmacy who are always looking out for the new things that come out. Like now, the Men’s Health Audit; we have to try to fit that in to what we are doing and make sure all the staff know about it and what to do and how we can promote it.” FG2 P3

“I do have to do a lot of the paperwork like putting all the figures on PharmOutcomes and making sure all the details are right and then checking to see that we got paid.” FG2 P5

The dissemination of important information discussed in the HLC meetings was also identified as an important function of the HLC role. After attending HLC network meetings, the HLCs reported that they routinely disseminated amongst their team the ideas of good practice, useful signposting resources and new community pharmacy referral pathways discussed at the meeting. This was in most cases communicated verbally. However, it was also mentioned by a number of respondents that distributed material including leaflets and other printed resources containing this information would be added to the pharmacy’s sign-posting resource.

“I consider going to the meetings as professional development and a chance to get useful information that I can bring back to the pharmacy.....When you meet with the other girls (HLCs), you talk about

work and you share your ideas; I've learnt so much just by talking to them....It was XXXX (HLC) who told me about the Alcohol Interventions team and the referrals they make and she also said about the scratch cards (Alcohol brief intervention scoring cards- contains information of local referral services) you get for the pharmacy" FG1 P4

Two of the HLCs discussed their role in *"supporting the process of change"* (FG2 P2) within the pharmacy to help with the implementation of the HLP project, and mentioned that they had sought advice from their peers and from the local pharmaceutical advisor (PA) on strategies to influence their colleagues in the pharmacy to participate further in HLP activities.

"I know that its my job (as a HLC) to try and make HLP work and make everyone (colleagues in the pharmacy) as passionate and driven and keen as I am to help the customers and get involved (in HLP activities).....the hardest thing is changing people; one day they will be fine and 'dabble' with talking to customers but I have to keep trying with them; XXXX (the local PA) said I should get them to come to these meetings (HLC network meeting)... I think I'm going to bring them along next time" FG2 P3

Within one of the focus groups it was proposed by one HLC that, managing internal communication with regards to HLP activities and developments, ensuring consumables for HLP services were well stocked and monitoring the level of service provision were all responsibilities of the HLC; to which there was agreement from the other HLCs present.

Perceived benefits of attending HLC meetings

This theme, comprising of six constructs, reflects HLCs' opinions of the benefits they perceive to acquire from attending the HLC meetings.

It was evident that the majority of HLCs were in favour of regular meetings and perceived them as opportunities to network with other HLCs working in different pharmacies. The overriding feeling was that the meetings, first and foremost, provided a platform for attendees to discuss current health promotion campaigns and to share ideas around customer recruitment and service promotion. The HLCs perceived the meetings as a rare opportunity to meet face to face and network with other HLCs; and was widely valued by the participants.

"I really look forward to these meetings, I think they are great and I think they are a great way for us to network and keep us motivated with the all the services" FG1 P3

“I find them (the meetings) really useful because it gives me a chance to see and hear what everyone else is doing in their pharmacy and it gives me ideas for what I can do” FG1 P4

After attending the meetings, HLCs stated they returned to their workplace with greater motivation possessing a *“feel good factor”* (FG2 P7), which acted as a *“boost”* (FG1 P3, FG2 P4) in their desire to help more customers. Attending the meetings with other HLCs added *“something new and exciting”* (FG1 P11) to the job role; this acted as a source of motivation for attendees to continue to engage in HLP activities.

“I go back to work (after the meetings) and feel more motivated and I find out that others like me are working hard and trying to do the same things.” FG2 P12

“Once you hear about something working well in one place it gives me confidence to try it in our pharmacy” FG2 P6

Furthermore, a significant number of the HLCs agreed that attending the meetings and hearing of others’ success with HLP activities, provided a source of *“healthy competition”* (FG2 P6) in comparing service activity figures, for example smoking cessation quit rates. The HLCs would use the meetings as an opportunity to elicit advice from other HLCs on health promotion campaigns and strategies to raise public awareness to boost customer recruitment.

“XXXX branch are doing really well with their health checks and quitters (smoking cessation) and that is something that when I hear about, I feel that maybe there is more we can be doing. So I try to have that conversation with them to see what I can be doing differently” FG2 P5

“We get to hear about other pharmacies and how many services they are doing; I listen and find out who is doing more than us and find out how they are doing it..... because getting the patients isn’t easy (customer recruitment to HLP services) and there’s lots of ways you can do so I try to ‘pinch’ their ideas” FG1 P3

Groups also discussed the opportunity the meetings provided in facilitating support for a range of other issues encountered within the pharmacy, such as IT solutions, sources of purchasing service equipment and sharing communication techniques in supporting customers involved in health and well-being services within the pharmacy.

“Sometimes I just wait to come to these meetings with all my questions because I know there will be someone here who can help me..... I needed help with putting the figures on PharmOutcomes (service information database) and I didn’t know where to get the inhaler devices from to show the patients” FG1 P1

“I found out (from the meetings) where I can get all the smoking stuff (posters and display materials) from for the health promotion table so I just ask here now” FG1 P7

The meetings had served to initiate working relationships between individuals employed at differing pharmacies and led to collaboration of HLCs from different pharmacies.

“We didn’t use to talk to each other, we would just say ‘Hi’ even though she only works down the road from me.... We decided at one of these meetings that we were going to do the health promotion stand at the college together, so we planned it together and it was brilliant, it went really well.” FG2 P3

Both focus groups discussed the importance the education element of the meetings is to their professional development. Whereby a practitioner affiliated to one of the HLP services (e.g. a local asthma nurse or a locally employed dietician) delivered a presentation, explaining their role and the remit of the service they provide as well as the how community can contribute to specific patient groups (e.g. appropriate dietary advice to offer during a weight management service).

“The speakers who come along and present are brilliant.... They really help me to know who are the right patients to refer and they tell us how best we can refer patient to them. I learn so much from them” FG1 P4

Thoughts on the setup and content of the meetings

The HLCs identified that a local venue and the specific time the meetings were held were important factors in being able to attend. Further discussions regarding the content of the meetings and the way in which they are structured, revealed the HLCs’ feelings towards the meeting agendas.

The inclusion of the PA’s presentation on local and national developments in the area of HLP with regards to new initiatives being considered and the references to recognition in the press of the success achieved in the Portsmouth HLP project promoted a *“feeling of shared identity”* (FG1 P2) and *“sense of pride”* (FG1 P3).

The training element incorporated into the meetings through the presentation of the invited practitioner was acknowledged to be a valuable source of learning and helped in contextualising the HLC role within the provision of specific services. A typical comment from participants is highlighted below.

“The speakers (trainers) are really good and I learn so much from them..... Because they are involved in the same service, they can tell us exactly what we can do to help and what we should be telling customers who we think need to be referred on” FG1 P7

HLCs generally held negative views toward the correspondence publicising meetings, as invitations were addressed to the pharmacy and not specifically the HLC. This often resulted in invitations received late or in many cases, not at all.

Individuals, who had been unable to attend past meetings, expressed their frustration at missing out on these discussions and updates included in the meeting not being circulated afterwards.

Suggestions on developing the HLC network to support sustained delivery of HLP activities

The HLCs acknowledged the positive affect attending the HLC meetings had on their understanding, enthusiasm and confidence in the process of their pharmacy meeting the criteria in becoming HLP accredited. There was also a voiced belief that continuation of the HLC meetings will be central for continued motivation, collaboration and sense of community amongst the HLCs in sustained delivery of HLP activities.

“These meetings give us an identity that we did not have before and we are recognised here (at the HLC meetings) for what we do with our customers; that’s not something we’ve had before and I think that’s what’s keeping us interested” FG1 P4

The HLCs discussed how the meetings could be designed and delivered to improve the variable attendance, which was likely to limit the benefits of the meetings. The HLCs cited the lack of means for direct communication between meetings and the absence of an advanced timetabling schedule.

The lack of HLCs attending was seen as detrimental to enhancing exchange of ideas. It was also proposed that with greater attendance, a leadership committee could be formed to share the responsibility of arranging meetings, collating important information and disseminating communications within the group. This idea received numerous positive comments.

“We should have a small committee in charge of collecting everyone’s ideas and then before each meeting the committee can meet up or talk on the phone about what topics we want to cover and then send out the invitations to everyone” FG1 P5

“It would be great to have more of us here at every meeting, so we can share more ideas and that would help as well to make a committee of regular people who can organise sending out the meeting information” FG2 P3

To facilitate improved communication between meetings, participants spoke of introducing a platform to allow direct interaction between HLCs; an online forum and a Facebook group were mentioned as possible solutions to facilitate this.

“We need something that everyone can use (in between meetings), and it would be good if we can use it from work; that we don’t have to give too much personal information.... It has to be simple and have it so that we can talk to each other” FG2 P7

“We need something that you can send messages and pictures and chat about what we’re doing in the pharmacy...that gives us the same ‘buzz’ that we get from these meetings.” FG2 P6

4.4 Discussion

The aim of the work undertaken was to investigate the role of HLCs and explore the significance the HLCs attribute to attending HLC meetings.

In addition to achieving the study objectives set out in this chapter of the thesis, the work carried out provided profiling detail on community pharmacy support staff, adding to the sparse published literature around this population of healthcare professionals. Only one of the HLCs involved in the study was male; indicating an overwhelmingly majority female orientated role. The participants were either MCAs, DAs or PTs, however MCAs made up half of the participants; this observation was not investigated but a plausible reason for this could be that MCAs are often the first point of contact within community pharmacy thus were deemed most suitable for the HLC role⁹⁹. The average age of participants was 49 years old, with an average of 11 years of community pharmacy experience; these findings are similar to the findings of two earlier reported studies^{108, 114}. There was little difference in the age and level of experience between MCAs, PTs and DAs, except that the DAs average age was 55 years old compare to 48 and 46 years old of the PTs and MCAs respectively. The participant data collected do not indicate a specific age group, level of experience nor specific job role for undertaking the role of HLC. Furthermore there does not seem to be a correlation of HLCs working at specific types of pharmacy (e.g. independent contractor versus multiple); the place of employment for the HLC population resembles that of the pharmacy types within Portsmouth.

This study reported on the role and activities of HLCs involved in delivering the HLP project; there has been two further similar studies published which have reported findings in line with those of this work^{325, 326}. The self-reported activities conducted and reported by the HLCs in this study included: training and motivating staff, leadership responsibilities, internal communications, organising supporting conditions for services, networking, updating resources and service monitoring. These activities are consistent with those cited in the related literature pertaining to the 'champion role' (refer to Section 4.1.1). Furthermore the findings identify that HLCs perceive their role to be one of influencing and implementing change within their workplace as detailed in Rogers' Diffusion of Innovations model²³⁸, in which the concept of champions is described as an individual who "*influences clients' innovation-decisions in a direction deemed desirable by a change agency*". Since this research has been conducted, further reports evaluating the role of HLCs in HLP projects elsewhere in England have been described. These include the evaluation of the implementation and impact of HLPs in Birmingham³²⁷, which revealed the HLCs' role in the delivery of HLP activities and identified HLCs to be highly motivated in supporting the HLP objectives. However, the diversity of HLC activities, as reported in this study, was either not evident or not reported on. In this report, HLCs reported peer support for their role was non-existent and there were no communications amongst HLCs working in different pharmacies. This was despite it being recorded that the HLCs perceived that peer networking would be valuable in enabling transfer of knowledge and sharing of best practice amongst HLCs to facilitate continued improvement of service delivery in HLP activities. Furthermore, the report exposes the lack of recognition and support the HLCs received from their employers and the local commissioners. This contrast may be explained by Coakes *et al.*'s research²⁵⁶, which suggests that in order for individuals to succeed in championing innovations in organisations, they need both procedural and resource support, and social and cognitive support. The authors recognise that the influence of innovation champions came through social contacts, multiplied through the communities in which they participate, through the genuine esteem in which they are held.

This study also specifically identified the perceived motivators and benefits of HLCs attending HLC meetings. These were reported to include: peer learning, increased motivation, enhanced confidence, source of advice, opportunities for collaboration, professional development, and sharing ideas. The findings of this part of the research resonate strongly with the work of Lave and Wenger²⁶¹ in describing communities of practice. The Lave and Wenger definition emphasises the opportunity for collaborative learning opportunities communities of practice create through sharing personal practice and regular interaction.

The three characteristics described to comprise a CoP can be clearly identified through the narrative of the HLCs:

1. the domain being the HLC shared interest and commitment to progress with the HLP agenda;
2. the community being the network of HLCs who meet periodically and engage in joint activities and discussions;
3. and finally the practice element whereby all HLCs contributing to the meetings are practitioners working towards a achieving a shared goal.

A more recent study by Rutter and Vryaparj identified similar themes³²⁵; HLCs involved in the HLP project in Dudley, UK were interviewed to explore their views on their role. The research identified that HLCs held positive views towards their new role and were motivated through a sense of personal development and a desire to enhance their practice in helping their customers. However, unlike in Portsmouth, the study did not identify the formation of a CoP but did include the introduction of networks between HLCs as a recommendation to support the skills development and practice of HLCs.

Analysis of the focus group discussions suggests that there are some key factors that influence the development, functioning and maintenance of the HLC meetings. These factors can be summarised under the following broad headings: commitment, enthusiasm, infrastructure and resources. These four factors, amongst others, have been cited in related literature as influential for encouraging collaboration and knowledge sharing within communities of practice^{328, 329}. Moreover, on reviewing the recent publications evaluating the HLP projects elsewhere in the UK^{325, 330, 331}, the factors which have been cited to influence the successful implementation and delivery of the HLP project can be categorised into the aforementioned headings.

The four factors mentioned can be attributed to the HLC, the pharmacy in which the HLC is employed and/or the wider structure supporting the HLP initiative (e.g commissioners, project team), summarised as follows:

- The HLC demonstrates their commitment and enthusiasm in attending the HLC meetings, contributing to discussions, sharing ideas, disseminating information to their team in the pharmacy and continuing to promote and deliver HLP activities.
- The community pharmacy demonstrates commitment through supporting the attendance of the HLC at HLC meetings, which provides the social and cognitive support; and being receptive to change and innovation through championing HLP initiatives and providing the procedural and resource support to the HLC²⁵⁶.

- The wider support structure (e.g commissioners, project team) manifests their commitment in continuing to commission resources and services in developing the HLP initiative, funding and facilitating the HLC meetings, sanctioning the local Pharmaceutical Adviser (PA) to lead HLC meetings and resourcing HLP communications.

Further to this, in discussing the contribution of the HLC meetings in supporting the sustainability of HLP service delivery, the HLCs saw improved communications in between meetings and the formation of a committee to take on the leadership of the group in managing communications and administrative functions, as a facilitator for tackling some of the challenges mentioned above.

4.5 Conclusion

There is increasing evidence indicating that the HLP project is an effective platform through which community pharmacy's role in delivering health public health services can be realised; this has been achieved through improved utilisation of pharmacy staff³³⁰⁻³³². The author's research has identified effective team working and staff motivation as key enablers and facilitators in supporting the HLP initiative. This study has identified a CoP developing amongst the HLCs; this is evidenced by the reported contribution of the HLC meetings in providing HLCs with professional development, networking opportunities and continued motivation. It thus offers recommendations to develop and sustain the CoP to support the sustainability of delivering HLP activities.

In the next part of this study, the literature will be explored to inform the design, implementation and evaluation of a strategy to support the emerging HLC CoP.

Chapter 5 : Supporting the HLCs' community of practice

5.1 Introduction

The work conducted in Chapter 4 identified a Community of Practice (CoP) developing amongst the Portsmouth HLCs; further to this the HLCs proposed recommendations to develop the existing networking opportunities to support the sustainability of delivering HLP activities.

This chapter reports a review of the literature for evidence based strategies employed to support CoPs. This, together with the analysis of HLCs' recommendations informed a strategy to support the emerging HLC CoP, which was subsequently implemented and evaluated.

5.1.1 Supporting CoPs

CoPs are entities that emerge and evolve for the purposes of learning and solving authentic problems^{265, 275}. Current trends in knowledge management cite the implementation of CoP in organisations as a way to advance knowledge³³³. For this reason, enabling and cultivating their emergence and continuation should be a priority among organisations^{270, 333}.

For the healthcare professions, one of the greatest advantages of CoPs as a collaborative learning environment, is being able to respond to the dynamic nature of medical knowledge and its relationship with clinical practice²⁷³. In recent years, varying forms of online technologies have been employed to support collaborative knowledge sharing and learning with and between groups of healthcare professionals, in order to improve standardisation and spread best practices. One strategy that has been employed to achieve this is the development of a virtual community of practice (VCoP). A VCoP describes a network of individuals who share a domain of interest about which they communicate and share experiences, problems and solutions online, with the aim of improving the knowledge of each participant and the overall domain²⁸⁸.

In a VCoP, knowledge can be continually shared in context with meaning, and can be changed through a collaborative nature; the members have the opportunity to pattern their behaviour based on current opinions and beliefs. Furthermore, healthcare practice can change quickly, and a virtual online community can be responsive enough to change with it³³⁴.

It has been argued that the ideal technology to support a CoP does not exist. Although many products have been designed with relevant features which are useful in facilitating CoP functions, a single

platform enabling the recognised beneficial activities of a CoP has yet to be developed and reported on³³⁵. Meanwhile, the attributes of an ideal technological platform to support a CoP are being recognised:

- easy to learn and use since involvement in a CoP is not usually one's main occupation;
- uncomplicated access and integration with other software that members of the CoP are using for their regular work so that participation requires as few extra steps as possible;
- affordable; if the technology requires a large initial investment, potentially CoPs will not be able to take advantage of the platform.³³⁵

5.1.2 Virtual Community of Practice (VCoP)

Whether an optimum VCoP exists, or what defines one remains controversial. It has been questioned whether or not a community can exist in an online or virtual environment because many associate the concept of a community with common physical space and history shared by its members³³⁶. However, others agree that VCoPs do exist and maintain the same functions as regular communities^{336, 337}. Moreover, it has been claimed that one of the Internet's largest successes is connecting people to share knowledge or advice. It has been estimated that in 2005, one third of all adult internet users used virtual social networks to make a key decision in their lives³³⁸.

The literature recognises the concept of VCoPs and alludes to their capacity to support interaction, collaboration and learning among professionals, especially where face-to-face interactions are limited by geographic spread, organisational boundaries, costs and time difference³³⁹.

Preece and Maloney-Krichmar³⁴⁰ sum up five important characteristics of VCoPs. These five characteristics are:

- members have a shared goal, interest, need or activity;
- members engage in repeated, active participation;
- members have access to shared resources;
- exchange of information, support, and services; and,
- members have a shared context of social conventions, language and protocols.

The literature discusses the advantages of VCoPs. Palloff and Pratt³⁴¹ stress that because of the large amount of information shared, VCoPs offer a greater amount of acquired and shared knowledge than could be collected on an individual basis. They add, that the excitement and synergy of an online

community can offer greater collaborative benefits than any other medium through the sharing of resources and offers the capacity to support community members. Furthermore, it has been reported that engaging in a VCoP enhances the learning environment. Johnson concluded the learning that evolves from VCoP is collaborative, in which the concerted knowledge of the community is greater than any individual knowledge³⁴².

Fontaine and Miller's review of the literature pertaining to VCoPs³⁴³ concluded that it is possible to identify three types of benefits of VCoP, depending on the recipient: individual benefits; community benefits, and organisational benefits. Regarding individuals, VCoPs can affect both professional activity as well as the personal lives of those individuals. Furthermore, being members of a VCoP can also influence how relationships are established at a group level. While in relation to an organisation, the impact can be upon activities, output, value and business results.

5.1.3 VCoPs in healthcare

Research focussing on identifying the various benefits that VCoPs offer healthcare institutions has revealed that their use of VCoP has progressed knowledge management within health institutions^{344, 345}.

There is also evidence to suggest that VCoPs can support practitioners to change practice to implement evidence-based practice, or to enhance performance²⁷⁶. Further research reports on observed improved quality of care^{346, 347}; reducing diagnostic time, or the establishment of new treatments and protocols in emergency situations³⁴⁸, following involvement in a VCoP.

Evidence for the contribution of VCoPs to generating ideas for healthcare services, practice and products has also been published^{349, 350}. Moreover, it has been indicated that VCoPs can address complex dilemmas, such as improving quality and safeguarding high standards of care by fostering an environment for clinical care^{346, 351}.

VCoP benefits directly linked to activity and the outcomes of health institutions, such as increasing productivity and saving time and economic cost have been identified³⁵⁰⁻³⁵³. Moreover, the literature recognises the positive impact of VCoPs at the strategic level of healthcare services in developing intellectual capital^{354, 355} and relationships with important constituents³⁵⁶⁻³⁵⁸.

Lesser and Stock concluded from their research that belonging to a VCoP of healthcare professionals, favoured the creation of social capital, derived from the network of people who make up the community. This creates trust, co-operation and behavioural changes that enhance performance²⁶⁹. It

has also been suggested that the stronger the emotional links between community members, the greater propensity for knowledge sharing³⁵⁹. Furthermore, it has been observed that with more established VCoPs, a sense of belonging and identity through shared activity and purpose, is created³⁵⁶.

These claims have led to VCoPs being promoted in healthcare as a tool to enhance knowledge, improve practice, and in general increase the individual and organisational performance²⁷².

5.1.4 The use of social media amongst healthcare professionals

‘Digital natives’ is a term which has been used to describe a generation of people who have grown up in the time of online digital technologies, with a large majority of people using them frequently in their everyday lives³⁶⁰. Individuals use social media for both personal and professional purposes. There are reports indicating that commercial organisations favour the use of social media as a means to improve performance, knowledge and relationships³⁶¹.

More specifically, healthcare professionals are using social media tools in a variety of innovative and creative ways – to build and improve social and professional networks and relationships, to share health-related information and to engage with the public, customers and colleagues in shaping future health policies and priorities. Closed online groups are also commonly used for education and peer support. One such study reports on how social media can bring a new dimension to healthcare as it offers a medium to be used by the public, customers and health professionals to communicate about health issues with the possibility of potentially improving health outcomes³⁶². Further works have explored the impact of healthcare professionals employing social media within the care of cancer and diabetic patients³⁶³⁻³⁶⁵.

Facebook is one such online social media networking site, widely used to share information and communicate with friends, family and colleagues³⁶⁶. The use of Facebook has grown rapidly and as of June 2014, there were over one billion monthly active users worldwide³⁶⁷. The use of smartphones and tablets has also increased significantly³⁶⁸; both of which facilitate instant access to many social media platforms. Although not designed to facilitate a learning environment, recent studies indicate Facebook to be a valuable tool in supporting academic activities^{369, 370} and share academic resources³⁷⁰. Facebook offers facilities enabling interaction via ‘profiles’, ‘groups’ and ‘pages’ and communication with individuals or groups using online chat, video chat and inbox messaging. User

profiles are personal spaces through which personal information, photographs and videos can be shared with an online community. The group facility allows a dedicated space for small group interaction about shared pursuits or interests. Groups can be formed by any registered user with the option to modify privacy settings. Pages are visible to the public and permit official entities such as public figures, businesses and organisations to communicate broadly with members who register their support for them³⁷¹.

The use of Facebook groups and pages has also been recognised in effectively supplementing academic course material^{372, 373}. Further studies report on the additional uses of Facebook in creating online environments to motivate learning^{374, 375}, cope with stress³⁷⁶, facilitate collaborative peer learning^{377, 378} and encourage evidence-based practice³⁷⁹.

In a study conducted by Panahi *et al.*³⁶⁹, doctors were interviewed to identify their personal use of social media for professional purposes, the perceived benefits and the challenges its use presented. All of the 24 participants revealed their frequent use of at least one social media platform for reasons of networking amongst peers, sharing knowledge, engaging in medical education, benchmarking and branding. The main challenges of adopting or greater usage of social media by physicians were cited to be: maintaining confidentiality, lack of trust, workplace acceptance and support, and information anarchy.

5.1.5 VCoP design and the factors influencing user involvement

Kondratova and Goldfarb³⁸⁰ believe the challenge of a VCoP is at least three-fold: 1) it has to provide content for users, 2) it has to encourage participation in the community and 3) it needs to facilitate communication and interaction among the practitioners.

A recognised issue for a VCoP involves the technology and its usability. The literature suggests that measures should be taken to ensure participants have the technological provision and necessary information technology (IT) skills to support mutual engagement²⁷⁵. Difficulties with access and information and communications technology (ICT) skills in relation to online discussion and virtual learning are widely cited in related studies³⁸¹⁻³⁸⁵.

Technology needs to be regarded as an accepted and transparent means of communication³⁸⁶. The evolution of a CoP is reliant upon the effective communication of the members; this has been recognised to be most simply realised through face-to-face meetings^{387, 388}. Billings acknowledges that there is a need for designing training for the use of VCoP including special attention to addressing

significant gaps in computer and information literacy skills between members³⁸⁹. McCartney *et al.*'s research involving healthcare professionals agrees with this. The authors conclude that a practical consideration to have in mind with VCoPs for health professionals is the need to ensure that potential members have the necessary skills training to understand the features of the virtual environment in order to use it effectively³⁹⁰.

BHP Billiton, a leading global resource company, have invested in many technologies to support and develop CoPs throughout its organisation. A report evaluating their usage indicated that the differing styles and cultures across CoPs will often dictate the specific design and functionality of the support tool they will seek. Furthermore, it was recognised that face-to-face meetings between community members are essential to successfully implement and sustain a VCoP; it was concluded that the value of the use of technology may simply be in sustaining activity between meetings. The report also alludes to CoPs employing a mix of technologies, driven by what is pragmatic for the group overall. To ensure that no member is disadvantaged they will often choose the most widely used and understood form of technology e.g. e-mail or telephone³⁹¹.

The need for a community facilitator has also been discussed in the literature. Brennan and McGowan³⁹² conclude that it is the moderator or facilitator's role to choose to seed discussions where possible in order to keep online interaction vibrant and to ensure that networks and connections are developed by community members. Further, the author identifies that in large distributed groups interacting online, a lack of moderation increases the possibility of having unconnected networks, since participants may be too different and lack the social awareness and trust to develop connections around a shared perspective. Stuckey and Smith³⁹³ argue that the presence of "leadership" within the VCoP is the most significant factor implicated in the ability to sustain the community and this may be in the form of a moderator, facilitator or list owner.

The barriers to VCoPs have been recognised in the literature. Smith *et al.*³⁹⁴ identified that high collegiality, for example a strong community of members who are physically co-located, can have a negative impact on the sharing of information and knowledge within a VCoP. Another barrier involves the shifting membership of a VCoP, which Wenger *et al.*²⁷⁹ distinguish to be fluid in its composition. As a consequence, VCoPs are faced with the challenge of maintaining interest to encourage participation. Individual members of a VCoP must engage with it in order that it may develop and grow and have meaning³⁹⁵⁻³⁹⁷.

Trust is also a barrier, which has been recognised to influence whether individuals engage in a VCoP. The VCoP lacks the opportunity for face-to-face interaction and socialising, which can consolidate group membership. Trust is essential for collaboration and sharing information and primarily develops through face-to-face interactions³⁹⁶⁻³⁹⁹. In a virtual environment, identities can remain hidden and members may adopt different personas^{400, 401}.

It has been cited in the literature that trust at an institutional level can also pose a barrier. Crossing virtual boundaries between organisations or institutions can have legal consequences involving disputes over intellectual property and data protection⁴⁰²⁻⁴⁰⁵.

Ikioka *et al.* examined the relationship between the structuring characteristics of VCoPs and the rate of online interaction among health visitors and subsequently made suggestions for how to improve interaction³³⁹. The study considers how the group size, geographic dispersion and topic relevance influence rates of online interaction. The study's key findings are summarised in Table 5.1.

Table 5.1 Factors that influence healthcare professionals' online interaction in a VCoP³³⁹

Factor influencing VCoP online interaction	Study finding
Number of participants in the VCoP on online interaction	<p>Overall online contribution of posts increased as new members joined. With the joining of new members, new issues, good practice points, comments and resources to support existing and previously posted evidence pieces were added and re-energised posting activity in the VCoP, were observed.</p> <p>Contribution and overall participation stagnated until new members joined and re-invigorated the discussions.</p>
Geographic dispersion of VCoP members on online interaction	<p>Within professionally diverse and geographically spread groups, the degree to which a sense of community can be initiated and facilitated in order to make online interaction sustainable is highly dependent on facilitation of the VCoP. Moderation can provide a great deal of nurturing towards helping virtual interaction, however homophily (the degree to which participants of similar backgrounds will only interact with each other) increases the tendency of disconnected networks, which in turn results in less online interaction.</p>
Topic relevance on online interaction	<p>High topic relevance facilitates more engaging online interaction among participants because the VCoP's topics mirror the discussion that directly draws on practitioners' experiences. High topic irrelevance can result in low online interaction because participants' interests will not be stimulated to encourage interaction.</p>

Support for the findings observed in Ikioda et al.'s study can be derived from the literature. Tarmizi et al.⁴⁰⁶ recognised that the size of the group has a strong relationship with the stability of membership when considering the effect of member numbers on online interaction. The study recognised that there is an increased chance that the VCoP will thrive with larger group numbers and an open membership because new discussions and suggestions will be added by potentially more enthusiastic newcomers. Further to this, it has been recognised that new members will join a VCoP because they associate a substantial number of people using it; thereby augmenting online interaction through increasing numbers of users⁴⁰⁷.

Regarding the influence of geographic dispersion, it has been reported that a potential issue with online and computer-mediated communications is that it is less personal and often diminishes social presence and cues present in face-to-face communication⁴⁰⁸. As a result, in VCoPs where there has

been little or no prior face-to-face interaction, there is a lower social presence which can lessen the sense of community, thereby reduce the level of interaction⁴⁰⁹. Thus, derived from these findings, one may hypothesise that where geographic dispersion of VCoP members is greater, the opportunities for members to meet face-to-face are fewer, which in turn can reduce online interaction. To overcome this potential barrier, the literature alludes to a strategy of facilitating the VCoP with a moderator to encourage the flow of information and interaction^{410, 411}. Studies have demonstrated that the moderator may be the single most important point in a VCoP, whose departure or absence can result in unconnected networks amidst the diversity of members⁴¹⁰.

The literature pertaining to topic relevance recognises that the day to day topics that members may want to discuss in a VCoP arising from their experiences; may not be relevant to all the VCoP members, and can result in low online interaction²⁹². The authors conclude that VCoPs for health practitioners must accommodate topics that bear most close semblance to issues that are most relevant to participant's daily practice and as much as possible, aggregate less relevant topics under broader themes to enhance online interaction.

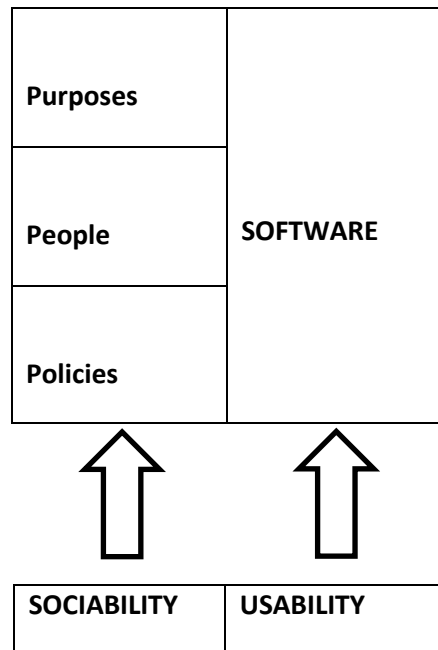
5.1.6 Evaluation of VCoPs

Online communities are dynamic, evolving and constantly changing⁴¹². Understanding what makes such systems successful is therefore complicated. As discussed, there are factors that significantly contribute to the success of an online community other than the specific technology employed. Maloney-Krichmar⁴¹³ argues that designing the online community technology to achieve only optimal usability is inadequate; the design should consider how the technology can best support social interaction for optimal sociability. Sociability is concerned with developing software, policies and practices to support social interaction online. Preece identifies three components implicated in achieving good sociability⁴¹⁴ which resonate strongly with Wenger's three domains of CoP²⁷⁵ :

- *Purpose*. A community's shared focus on an interest, need, service or support that provides a reason for individual members to belong to the community.
- *People*. The people who interact with each other in the community who have individual, social and organisational needs.
- *Policies*. The language and protocols that guide people's interactions. This can include policies for registration and code of behaviour.

De Souza and Preece⁴¹² consider the aforementioned components of an online community in their online community framework. (Figure 5.1)

Figure 5.1 The key components and factors of the online community framework⁴¹².



The usability is concerned with how intuitive and easy it is for individuals to use and interact with a product⁴¹⁵. The main usability issues for online communities cited in the literature are similar to those for most web-based software; but the following four components are particularly important because they are concerned with the software's role as a medium and a place for social interaction⁴¹⁶.

- *Dialogue and social interaction support.* This relates to the prompts and feedback that support interaction, the ease with which commands can be executed and spatial relationships in the environment.
- *Information design.* This relates to how easy to read, how understandable and how aesthetically pleasing information associated with the community is.
- *Navigation.* This relates to the ease with which users can move around and find what they want in the online community. Many online community users have suffered from the inconsistencies of data transfer and differences in interaction style between imported software modules and websites housing the community.
- *Access.* Requirements to download and run online community software must be clear. In addition, if the community can be accessed from portable devices such as smartphones and tablets, clear instructions should be made available about how to obtain it.

The online community framework provides a basis for identifying characteristics and measures that can help to describe success of online communities. Table 5.2 provides examples of determinants and measures of success for each of the components included in the framework. These have been derived from the literature and reported on by Preece in research aiming to provide a strategy to determine and measure the success of online communities. ⁴¹⁶

Table 5.2 Examples of determinants and measure of success of online communities⁴¹⁶

Framework	Design criteria	Examples of determinants of success
Sociability	Purpose	How many and what kinds of messages or comments (or comments per member) are being sent? How on-topic is the discussion? How much interactivity is occurring? How much and what kind of reciprocity occurs? What is the quality of the peoples' contributions and interactions?
	People	How many and what kinds of people are participating in the community? What do they do and what roles are they taking? How experienced are they? What are their ages, gender and special needs?
	Policy	What policies are in place? For example, registration and moderation policies to deter unprofessional behaviour. How effective are the policies? How is relationship development being encourage? For example, what kinds of policies encourage trustworthiness and how effective are these policies?
Usability	Dialogue and social support	How long does it take to learn about dialogue and social support? How long does it take to access or send a message, or perform some other action etc.? Are users satisfied? How much do users remember about the dialogue and social support?
	Information design	How long does it take to learn to find information (e.g. help) or to achieve a particular information-oriented goal? How satisfied are users?
	Navigation	How long does it take to learn to navigate through the communication software and/or web site to find something? Can users access the desired information/activity in a reasonable time? How satisfied are they?
	Access	Can users access all the components they need? Can they download desired information? Are response times reasonable? Does the software/web site protect their privacy? What problems do they encounter using the resource?

The author commented on the application of these determinants and measures in evaluating online communities, suggesting that used individually, some measures can be misleading; so several different determinants and measures are needed to gain an accurate assessment of a community.

More recent studies have attempted to investigate the factors influencing VCoP members' on-going contribution to the knowledge-sharing within a VCoP. User satisfaction is one such factor that has been explored for its influence on the knowledge creation and sharing process of VCoP⁴¹⁷. Generally, satisfaction is measured by subjective user assessments of any outcome or experience regarding a specific technological tool or information system⁴¹⁸. User satisfaction has also been recognised as a determinant of the use of a technological tool⁴¹⁹.

It been reported that VCoP members contribute to knowledge creation, motivated by factors related to their personality and the perceived satisfaction is attributed to sharing knowledge and collaborating with peers³⁴⁷. Further studies have revealed factors such as an individual's standing within a VCoP, internet usage habits and the specific technology to influence VCoP user satisfaction^{271, 420}.

Jimenez-Zarco *et al.* developed a theoretical model incorporating the factors recognised in the literature to influence VCoP user satisfaction (Figure 5.2 and Table 5.3)⁴²¹.

Figure 5.2 Theoretical model of factors influencing VCoP user satisfaction⁴²¹.

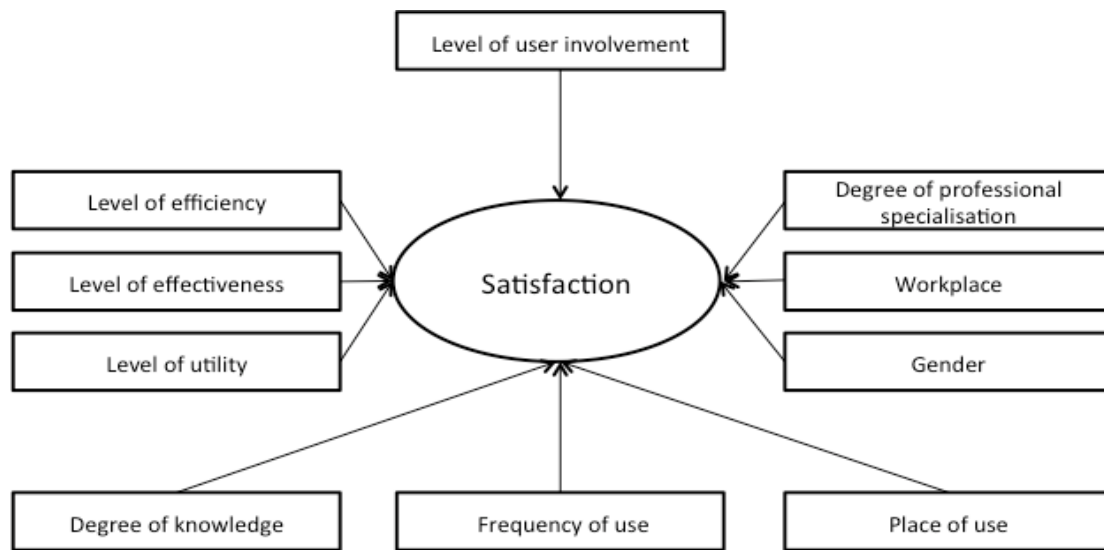


Table 5.3 Factors recognised to influence VCoP user satisfaction

Factors influencing VCoP user satisfaction	Literature summary
User involvement	Research indicates that usage is directly linked to enhanced satisfaction ^{419, 422} . It has also been argued that VCoP usage and user's satisfaction affect each other simultaneously and the relationship is reciprocal ⁸⁰ .

Efficiency	VCoP have been reported to facilitate the processes of knowledge creation and knowledge sharing in a quick, simple and inexpensive manner ⁴²² . The level of efficiency that the VCoP user perceives positively influences the degree of satisfaction ⁴²¹ .
Effectiveness	Research indicates that the VCoPs are highly effective and efficient means of creating and sharing knowledge ⁴²³ . Moreover, VCoP have demonstrated to be an effective means to address professional isolation ^{424, 425} . The level of effectiveness that the VCoP user perceives positively influences the degree of satisfaction ⁴²¹ .
Utility	The perceived usefulness and perceived ease-of-use are two factors demonstrated to play a significant role in the degree of VCoP user satisfaction ^{418, 426} .
Knowledge	The research indicates that with increased knowledge and understanding of the potential benefits of the VCoP, a higher level of activity can be observed within the community ^{417, 427, 428} .
Frequency of use	The degree of user involvement in the VCoP has been shown to be largely determined by the frequency of use and the accessibility of the ICT. The related studies indicate that individuals who routinely use technology and have experience of VCoP membership are likely to be more involved in the VCoP ^{420, 429} .
Place of use	Reports indicate that VCoP users make greater use of the VCoP in the workplace ²⁷⁸ . This is especially relevant in workplaces where access to the VCoP may be restricted by time-pressures or lack of adequate facilities.
Gender	There are conflicting studies indicating a difference between gender in the use of technology, and the associated levels of satisfaction ^{430, 431} .
Workplace	Studies have indicated that the workplace of VCoP users can influence their professional skills and their need and desire for new knowledge ^{278, 356} . These factors have been demonstrated to determine user level of involvement in the VCoP.
Professional specialisation	The user profile, in particular the degree of specialisation, has a significant impact on the reasons for participating in the VCoP and in the level of satisfaction ³³⁹ .

Online interaction is often measured by the level of contribution, which includes posting questions and providing feedback; however it has been argued that postings represent only one side of the vibrancy of a VCoP and it has been suggested that there are other ways of depicting online interaction, for example, whether people are visiting the VCoP^{295, 432}.

Kimball and Ladd reported that measuring outcomes of a VCoP can be problematic. Membership, activity levels and relationship maps have all anecdotally, provided useful proxy measures for VCoP

value. However, the authors suggest that specific “stories and anecdotes” appear to be the most useful type of communication for users of a VCoP to benefit from³⁹¹.

Social network analysis has been employed in studies to examine whether professional connections and relationships are being developed by health practitioners as they interact and share knowledge in a virtual environment^{339, 433}.

5.1.7 Social Network Analysis (SNA)

SNA can be used to quantify the connectivity and stability of online communities by measuring degree, closeness and “betweenness” centrality, reciprocity of relationships, and multiplexity⁴³⁴.

Social networks consist of webs of social exchanges that people share between each other. Each social network consists of individual actors as nodes, (these can be individuals or organisations) and relations between actors as ties (or links) between nodes. These relations can take many forms; they may represent the exchange of information, resources, money or support⁴³⁵. Not all nodes in a network are equal; rather, the degree, closeness and “betweenness” centrality, and multiplexity of interpersonal ties between each node affect the network’s structure and their position within it.

Degree centrality is the number of persons (or nodes) to which a particular person is directly linked; a higher score indicates a well-connected person⁴³⁶. This measure helps to identify key persons in a community, with the facilitator likely to score highly. A high average density score, indicates a high level of direct links or interactions between members of the community.

Closeness centrality recognises the importance of indirect connections for exchange of resources (such as knowledge) and measures the shortest path connecting a key node (community member, in this case) to any other node⁴³⁷. Betweenness centrality also takes into account the importance of indirect links in maintaining links between nodes not otherwise connected⁴³⁷. This, too, is relevant in terms of examining the flow of resources (such as information or knowledge)⁴³⁶. A community scoring highly in the knowledge exchange relationship would indicate high connectivity with little threat to knowledge exchange due to lost links. Reciprocity of each relationship can also be examined to identify bidirectional links, with suggestions that a high level of reciprocity is characteristic of a more stable network⁴³⁸.

Multiplexity can be examined as an indication of the strength of the link between members; with members linked by more than one relationship said to have stronger ties than those linked by one relationship^{436 439}.

Various softwares maybe be used to create visual representation of SNA in the form of graphs, one software commonly used in undertaking research in social science is NodeXL⁴⁴⁰. In employing such software, the graph density may also be calculated; this is a measure of how many members of a network interact with other members compare to the maximum number of interactions.⁴⁴¹ For example if there are two persons in a network and the only connection made is person 1 speaking to person 2 and person 2 does not respond, then the overall graph density is 0.5. i.e.(1) connection divided by (2) possible connections. The resultant figure represents how well connected a network is (maximum figure is 1).

The author used guidance from the literature to design, implement and assess the impact of a VCoP to support the HLCs' CoP identified in Chapter 4.

5.1.8 Realist evaluation

It has been suggested that a realist evaluation is well suited to explore complex interventions like CoPs where outcomes are determined through stakeholder action and interaction, which in turn is likely to be influenced by social and cultural norms.⁴¹⁰

A realist evaluation is a qualitative approach for testing and refining programme theories by exploring the complex and dynamic interaction between a given context, mechanism and outcome⁴⁴². It is a theory-driven evaluation; it aims to outline and provide: the *context* in which the intervention applies, the *mechanism* by which it works, and the *outcomes* which are produced⁴⁴³. A realist evaluation goes beyond focussing purely on inputs and outputs; it involves exploring and identifying the mechanisms by which the inputs are converted into outputs, and recognises the need for particular conditions (contexts) to be present for the causal mechanisms to be triggered and yield a particular outcome⁴⁴⁴.

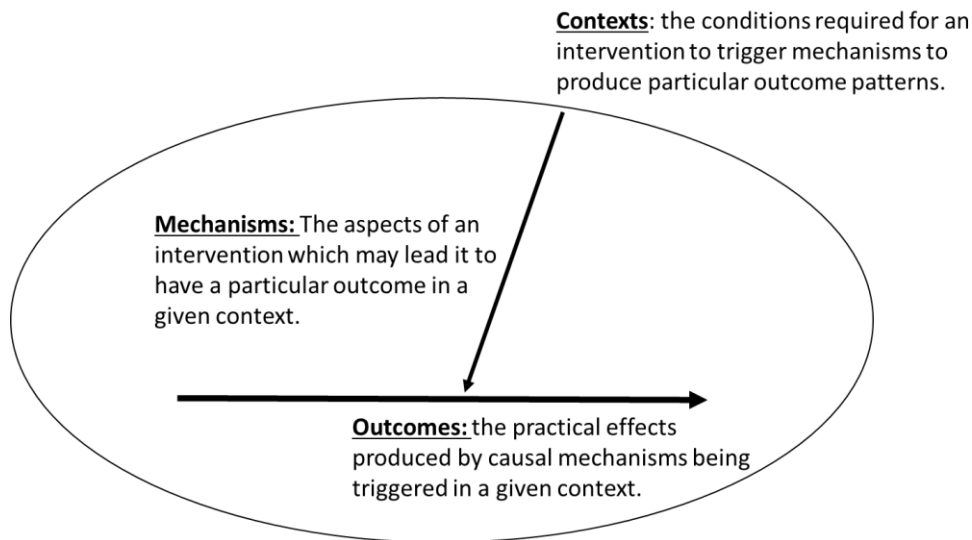
A realist evaluation technique (RET) begins with the development of a middle range theory, which establishes the relationship between contexts, mechanisms and outcomes to generate a potential CMO (Context, Mechanism, Outcome) configuration⁴⁴⁵. RETs do not set out to make a judgement about whether or not an intervention is effective.

Since CoPs are influenced by the social and cultural norms of participants, Ranmuthugala et al. proposed that RETs are most appropriate in their evaluation⁴¹⁰. The authors argue that when employing a realistic evaluation for a CoP, the *contexts* are the connections, interactions and knowledge flow, membership, level of maturity and activities of members. The *mechanisms* are

factors and resources that collective participation potentially offers members to influence change. The *outcomes* are not predefined in RETs.

Figure 5.3 illustrates how the RET links context and mechanism to outcomes.

Figure 5.3 Realist evaluation theory⁴⁴⁶



5.1.9 Aim and objectives

The aim of the research conducted in this chapter of the thesis was to describe the development of a platform to establish and host a VCoP to support the HLC CoP and evaluate its subsequent success in achieving this.

The research had the following objectives:

1. Development and implementation of a literature-informed online platform to support the existing HLC CoP
2. Exploring the HLCs' use and experiences of the platform using realist evaluation techniques to determine whether a VCoP has been established.

5.2 Methodology

5.2.1 Designing and implementing the VCoP

Following a review of the literature and consideration of the HLC recommendations for development of the existing networking opportunities (Chapter 4), a platform was developed and introduced to create a VCoP to support the existing HLC CoP.

A brief summary of the steps taken in developing the platform and the rationale for these steps, is outlined in Table 5.4.

Table 5.4 The rationales for the steps taken in designing and implementing the platform to support the HLC CoP.

Elements of development and introduction of the platform	Rationale
Facebook employed to support HLC CoP.	<p>The literature indicates that a platform to support the CoP should be: easy to learn and use, uncomplicated access, affordable³³⁵; Facebook offers these advantages^{367, 368}.</p> <p>Facebook facilitates dedicated space for small group interaction and settings to allow for confidentiality of personal information³⁷¹.</p> <p>Reports on the use of Facebook to successfully support CoP activities³⁷⁴⁻³⁷⁸.</p>
A communications officer was employed to deliver Facebook training and provide a user guide.	<p>Measures should be taken to ensure participants have the necessary IT skills to support mutual engagement in a VCoP²⁷⁵.</p> <p>There is a need to ensure that potential members have the necessary skills training to understand the features of the virtual environment in order to use it effectively³⁹⁰.</p>
Demonstration on accessing Facebook on portable devices	<p>If the community can be accessed from portable devices, clear instructions should be made available⁴¹⁵.</p>
Appointment and training of community facilitator	<p>It is the community facilitator's role to choose to seed discussions where possible in order to keep interaction vibrant³⁹².</p> <p>A lack of moderation increases the possibility of unconnected networks³⁹³.</p>
Face-to-face interactive training	<p>Trust is essential for collaboration and sharing information and primarily develops through face-to-face interactions^{396, 398}.</p>
Non-attendees sent a copy of the illustrated user guide containing instructions on how to join the Facebook group	<p>With a larger community size, new discussions and ideas will appear more frequently, augmenting online interaction⁴⁰⁷.</p> <p>Online interaction increases as new members join³³⁹.</p>

Facebook was used as a platform in supporting the VCoP. The local commissioners (Portsmouth City Council) were approached to obtain the contact details of the Marketing and Communications Officer (CO), whose role includes leading on behaviour change marketing for public health within Portsmouth

City Council, developing and delivering creative and engaging campaigns that play a role in improving the health of Portsmouth residents and supporting the City's regeneration.

A meeting was arranged between the CO and the author to design the content of a HLC training event, which was used to launch the HLC Facebook group.

Postal invitations were sent to all HLCs employed within Portsmouth's community pharmacies, inviting HLCs to the VCoP launch event.

In an attempt to encourage attendance, the VCoP launch event was arranged at a local community centre at a time during the week when HLCs would usually have their network events scheduled. The training event was led by the CO who used a PowerPoint presentation to demonstrate how to join the HLC Facebook group and carry out functions such as corresponding with other members, initiating discussions and posting media files onto the group page. The Facebook specific facilities such as *like*, *add a friend*, privacy settings and building a personal profile were also introduced. Instruction was also provided on how to access the Facebook group via a smartphone or tablet.

An illustrated guide was printed and provided to all attendees containing the instruction provided in the training session (Appendix 4.3).

The presentation also included direction on how, through interaction on the Facebook group, the existing HLC network can benefit. Following this, the role of the group facilitator/moderator was introduced and attendees were given the opportunity to volunteer to assume this role. Three individuals volunteered to perform this role; each of whom were referred to a specific section within the illustrated guide containing information relating to the moderator's role in a VCoP.

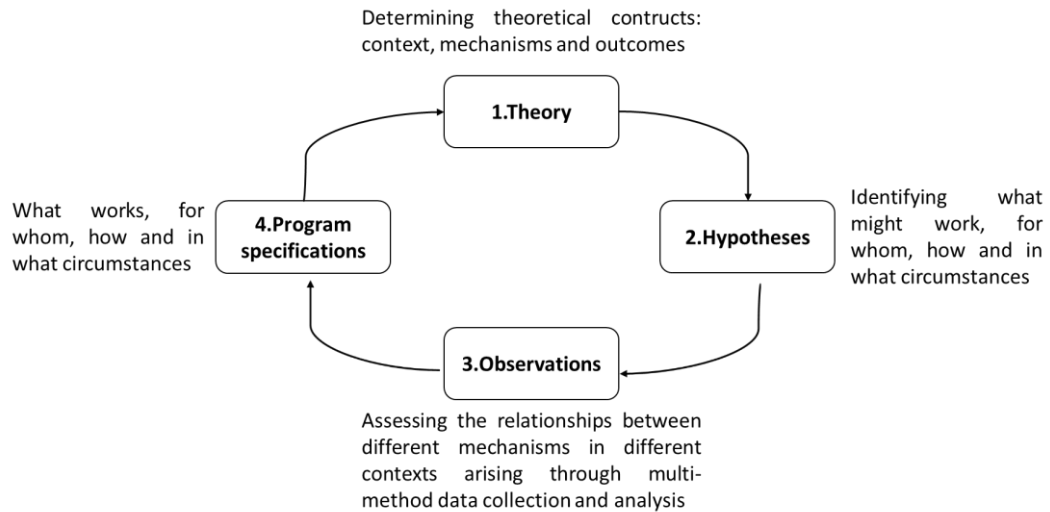
After the event, the illustrated guide was sent by post to all HLCs who were unable to attend the event, and an electronic version was made available on the HLC Facebook group.

5.2.2 Evaluating the VCoP using a realist evaluation

Four stages make up the RET as shown in Figure 5.4; each stage corresponds to a component of the realist evaluation cycle (theory, hypothesis generation, observations and programme

specifications)⁴⁴⁶. The stages are carried out in sequence such that the findings from each stage will inform the next stage, and the final stage will involve reviewing the findings from stage three to confirm, modify, or reject the theory-based hypothesis generated in stage two⁴⁴⁷.

Figure 5.4 The realist evaluation cycle⁴⁴⁶



In this study, both qualitative and quantitative methods were employed to collect data for inclusion in the RET. The data was collected over a nine month period and included semi-structured interviews, an online survey and observation of online interaction, through social network analysis.

A summary of the methods employed in each stage of this study is shown in Table 5.5.

Table 5.5 Four-stage approach to the realist evaluation employed in evaluating the HLC Facebook group

Stage	Activities	Analysis	Purpose
1. Theory	<ul style="list-style-type: none"> Literature review Semi-structured interviews with HLCs Formulate CMO configurations 	Qualitative <ul style="list-style-type: none"> Framework analysis – identify themes and categorise as outcomes, mechanisms, and contextual factors Formulate potential CMO configurations 	Provide the theoretical basis for the realist evaluation
2. Hypothesis generation	<ul style="list-style-type: none"> Generate hypothesis based on CMO configurations 	Rephrase CMO configurations into hypothesis	Formulate hypothesis to be tested during stage three
3. Observation	<ul style="list-style-type: none"> Online survey of HLC Facebook group members Observation of Facebook group activity by HLCs 	Quantitative <ul style="list-style-type: none"> Identify CMO configurations that occur with regularity Social Network Analysis 	Test and accept, reject, or modify hypotheses. Examine structure of professional and social relationships and flow of information and knowledge within the HLC Facebook group
4. Program specification	<ul style="list-style-type: none"> Review analysis from stage three 	Refine theorised CMO configurations based on testing hypotheses	Specify CMO configurations that explain how, when and why the HLC Facebook group can improve healthcare practice

5.2.2.1 Stage 1: Theory

To underpin the realist evaluation, the literature on the role VCoPs play in supporting the practice of healthcare practitioners was explored (as reported in Sections 5.1.3-5.1.7). This was done to identify characteristics of VCoPs, factors recognised to influence user involvement and outcomes achieved. The literature review provided adequate information to formulate contexts and potential mechanisms by which VCoPs support practice. A brief summary of these findings are presented in Table 5.6.

Table 5.6 Brief summary of the literature findings of the characteristics of VCoPs, factors recognised to influence user involvement and outcomes achieved.

Characteristic	Findings from the literature
<i>Membership and practice</i>	<ul style="list-style-type: none"> • Members have a shared goal, interest, need or activity³⁴⁰. • VCoP can support practice change and evidence-based practice²⁷⁶. • Membership and group size is not fixed^{339, 412}. • VCoP can establish a sense of professional identity³⁵⁶. • Users join voluntarily through requesting access from the community facilitator(s)³³⁹. • Membership can cross professional and or/organisational boundaries³³⁹.
<i>Activities and communication methods</i>	<ul style="list-style-type: none"> • Members engage in repeated, active participation and have access to shared resources. Members exchange information, support and services. The existence of a shared context of social conventions, language and protocols between members³⁴⁰. • Interaction is an important feature of VCoP identity^{420, 429}.
<i>Origin</i>	<ul style="list-style-type: none"> • A strategy to support CoPs, enhance professional networks, to share information and to engage with stakeholders³⁶²⁻³⁶⁵.
<i>Determinants of success</i>	<ul style="list-style-type: none"> • A committed facilitator⁴¹⁰. • Shared purpose⁴¹⁴. • Commitment and enthusiasm from the members^{419, 422}. • Workplace acceptance and support³⁶⁹. • Confidential information protected³⁶⁹. • Users receive specific ICT training to support engagement^{275, 388, 389}. • Uncomplicated access^{381, 382}. • Technology needs to be regarded as accepted and transparent means of communication^{386, 416}. • Trust between members is essential and can develop through face-to-face interactions³⁹⁶⁻³⁹⁹. • Regular communication and interaction between members⁴⁰³. • Topic relevance²⁹². • Infrastructure to support the access and integration of the VCoP into everyday practice^{278, 356}.

Based on the literature findings, an interview protocol was designed with the objective of identifying CMOs that were used to develop potential theories on CMO configurations explaining the role of the HLC Facebook group in supporting HLCs' practice.

The interview protocol consisted of two main parts: part one was designed to determine the user's motivation for joining the Facebook group and part two was to explore the users' experiences of using the group. A pilot with two community pharmacy teacher practitioner staff employed at the University of Portsmouth took place to establish if the interview protocol was clear and understandable. Minor linguistic changes were made following this.

It should be mentioned that within three months of the launch of the HLC Facebook group, commissioner funding to support the HLC network meetings was withdrawn. Furthermore, the pharmaceutical advisor employed by the commissioners, who had contributed significantly to the HLC meetings, reduced her working hours and was no longer able to support the HLC networking opportunities. Consequently, the HLCs ceased their face-to-face meetings and were no longer able to benefit from the advantages these meetings provided.

Six months following the implementation of the HLC Facebook group, an invitation for participation in a telephone interview with the researcher, was posted on the group's Facebook page. The invitation detailed an outline of the intended study. This invitation was re-sent after seven days to identify any further potential participants.

The telephone interview was selected in these circumstances since the HLCs no longer routinely met face-to-face, which would have made arranging focus groups challenging; the telephone interview can be used with minimum disruption and permits considerable flexibility⁴⁴⁸. The researcher was aware of limitations of employing telephone interviews, in that the separation between the interviewer and interviewee can present challenges for interpersonal communication, specifically in the formation of trust⁴⁴⁹ and with interviewees typically providing less detail and elaboration than in face to face interviewing⁴⁵⁰.

Following the recruitment of participants, individuals were contacted by the author via the Facebook instant messenger to arrange a suitable time and date to conduct the telephone interview. A study information sheet was sent to each participant prior to the telephone interview, which also informed participants that their responses would be anonymised and kept confidential (Appendix 4.1).

After an introduction and confirming the identity of the participant on the telephone, the interview commenced. The telephone interviews were digitally recorded and professionally transcribed verbatim through the online academic transcription service, Way With Words. Transcripts were imported into NVivo10. The highly structured nature of the qualitative data lent itself to Framework Analysis, which the author used to systematically code and analyse the data, using a matrix to summarise and compare the transcripts by participant and theme²¹³. The framework was informed but not mandated by the aforementioned literature review of VCoPs and their employment in healthcare. The value of this approach is that the data were ordered into descriptive 'chunks' which aided theme focused analysis; the analyst looks down the columns to examine all interviewees' responses in relation to a particular issue, while the matrix maintained the context of the data and aided the search for explanation by looking across the rows. The themes were partly drawn from the

topic guide and later refined to include emerging and unexpected material in the data. The author identified and coded the data which was then reviewed by a second member of the research team; a discussion then took place between the two researchers to agree on how the data should be interpreted. Through these discussions, the data were categorised into contexts, mechanisms or outcomes.

The end product of this stage was possible CMO configurations that explained the role of the HLC Facebook group in supporting the practice of the HLCs.

5.2.2.2 Stage 2: Hypothesis generation

This second stage involved rephrasing the CMO configurations theorised in stage one ready for testing in stage three. The hypotheses were framed around the theoretical associations between specific CMOs that could contribute to different outcomes of VCoPs, depending on the context in which the VCoP operated.

5.2.2.3 Stage 3: Observation

The hypotheses developed in stage two were used to generate statements for wider testing as part of an online survey to all HLCs employed in Portsmouth's community pharmacies during stage three. These statements were converted into a set of twelve questions by the author and were then reviewed by a second member of the research team. The twelve questions required the HLCs to indicate their level of agreement on a Likert scale about their participation in the HLC Facebook group (1= Strongly disagree – 5= strongly agree). Testing the hypotheses was intended to help identify CMO configurations that appeared regularly, and provide possible explanations for the role of the Facebook group in supporting the HLCs. The survey also collated information of the context of the HLC's participation in the VCoP; for example, the length of time being a member of the VCoP, age, practice setting, and frequency of use. The questions were piloted with two community pharmacy teacher practitioner staff employed at the University of Portsmouth, to establish if the questions were clear and understandable; minor grammatical and wording changes were made to the questions.

The survey was posted via the HLC Facebook group for all registered members to access.

The second part of the third stage involved obtaining contextual information on the connections, relationships and knowledge exchange that occurred within the HLC Facebook group. These are essential elements of a VCoP and form the context in which the hypotheses were tested.

Social Network Analysis (SNA) methods were utilised to explore the contextual information about connections, relationships and knowledge exchange within the Facebook group, represented by the strength of ties⁴¹⁰. SNA was also used to visualise the nature of cohesiveness, the formation of sub-groups and cliques and the density of the overall methods of interaction amongst the Facebook group users in order to document the development of the VCoP.

In facilitating the SNA, the author undertook the following process:

1. A NodeXL⁴⁴⁰ spreadsheet was generated of the names of the persons who had posted on the Facebook group (either an initiating post or a response to a posted item) since it was introduced (November 2015) until the end of the study period (August 2016). Each person was assigned a number and the Facebook group was also attribute an identified within the spreadsheet. (The purpose of this was to record posts to the Facebook page rather than a communication between persons)
2. Each post was then recorded on the NodeXL spreadsheet, this included details of who initiated the post and recorded all individuals who had responded. For example Person 1 posts a picture on the Facebook page would be recorded as an interaction between “person 1 and Facebook page”; if person 2 decided to respond to the picture, this would be recorded as an interaction between “person 2 and person 1”. This process was carried out for all of the posts that took place during the study period. (This was checked for accuracy by a second member of the research team)
3. Using the NodeXL functions, a SNA graph was plotted, whereby all of the interactions that took place are presented in a visual format; each individual is represented as a circle of a specific size. The size of the circle represents the level of activity within the Facebook group and the lines connecting the circles represent specific interactions that took place.
4. The SNA chart was then analysed to identify key knowledge brokers (i.e. those individuals who significantly contributed to interaction within the group) and active members who were connecting in the community⁴⁵¹. Further NodeXL functions were employed to quantify the connectivity and stability of the community by measuring degree, closeness and “betweenness” centrality, reciprocity of relationships and multiplexity.
5. Further analysis of posts took place to categorise the posts according to specific themes, count the number of interactions per month and to collate the “seen” data for each of the posts (the

“seen” data identifies how many of the group members have seen the post). This information was collated and was repeated by a second member of the research team for accuracy.

5.2.2.4 Programme specification

The final stage of the evaluation involved reviewing the theorised role of VCoPs in supporting healthcare practitioners and potential CMO configurations derived from stage one, in light of the findings in stage three. The CMO configurations that were supported with regularity were used to form possible explanations for the role of the HLC Facebook group in providing support to the HLCs.

5.2.3 Ethics approval

This research received a favourable opinion from the Portsmouth NHS Local Research Ethics Committee (ref 10/H0501/6) 22/01/10 (Annexe 1).

5.3 Results and discussion

The HLC Facebook group launch event was attended by 22 HLCs in November 2015. During the session, attendees were able to access Facebook and join the Facebook group via their personal electronic devices. As of the end of November 2015, there was 29 registered users in the group.

5.3.1 Stage 1 results: Developing theory - HLC Semi-structured interviews

Six HLCs volunteered to participate in telephone interviews to discuss their experiences using the HLC Facebook group; one of these individuals had also volunteered for the group facilitator role at the launch event. Interviews lasted between 25-40 minutes. The six interviews were conducted between August and October 2016.

The following major themes were identified from the interview transcripts.

Motivations for membership

All respondents explained that a significant motivation in joining the HLC Facebook group was to experience feeling part of a professional community. This was illustrated by the following quotations.

“I really enjoy meeting and networking with the other HLCs at the meetings and we have made our own little community now, we learn about new services and talk about what we do together- which I am really happy to be part of. So, joining the Facebook group was to make that feeling stronger and to stay in touch more often” HLC1

“Going to the meetings and working with the other champions (HLCs) was what it was all about, that’s what made me feel like I was a HLC and made me think what I should be doing, that’s why I joined, to be part of the group and know what I should be doing” HLC2

“I just feel that we have our own little group going; we all help each other, and I really like that, so I joined the group even though I don’t really use Facebook” HLC3

The aspiration that the Facebook group would facilitate further learning to help HLCs improve their practice was identified as a common theme in the HLCs responses.

“I know that there are some of the champions who have been doing this a lot longer than I have and have more experience at doing the services and talking to the customers, so I wanted to see what I can learn from them” HLC2

“We’ve only got a small team in the pharmacy and there isn’t time to read up on the new things that are happening or time to do some extra reading; at least with Facebook you can see what everyone else is doing and what they are talking about and you can ask questions and learn from that” HLC4

“I am always looking to learn and whenever I go to the meetings I am always asking how I can try new things to see if I can sign-up more patients (to pharmacy services), XXXX always spends time to give me some advice, on Facebook I can see if there is anyone else who can help me” HLC5

Further motivation which was mentioned was a desire to build closer relationships with local HLCs to develop opportunities in designing collaborative health promotion campaigns. It was also alluded to that on occasion, HLCs are not able to attend the face-to-face meetings; thus Facebook could be used to communicate important information relevant to the HLC role.

These findings are consistent with the literature which suggests that shared interests are the main purpose VCoPs exist⁴⁵². It is also proposed that community members can deepen their expertise by closely working with other members undertaking similar roles⁴⁵³. Porter introduces the idea that

interactions in such communities create a sense of belongingness, shared values, and mutual understanding⁴⁵⁴; this resonates strongly with the HLCs' motivations for joining the Facebook group.

The research confirms that VCoPs are often used as knowledge management tools and hold significant value in facilitating the sharing of ideas to enhance practice^{279, 295}; the HLCs interviewed seemed to recognise this in articulating their motivations to join the Facebook group.

Activities and communication

The HLCs discussed their personal usage of the Facebook group by describing the activities and communications they had been involved in.

It was evident from the HLCs' responses that they perceived the Facebook group to be useful in sharing information and resources related to community pharmacy services, which respondents report they access for further learning.

"If I'm ever stuck because I don't know where to get the stock for the smoking cessation equipment or the alcohol awareness scratch cards then I can quickly ask on the group and I will get an answer the same day, sometimes someone local will pop round and deliver what I need" HLC4

"I've used it (the Facebook group) for getting local signposting information when I can't help the customer myself, and I want to know where I can send them for help" HLC3

"I will check it regularly (the Facebook group)... the articles and educational material is useful to me and I would say I do learn quite a lot from the stuff that is posted on there" HLC1

All of the HLCs spoke of their use of the Facebook group to stay up to date with HLP developments and checking for posted information of communications relating to impending meetings, health campaigns (both nationally and locally-initiated) and media reports relating to HLPs and the wider community pharmacy profession.

"XXXX (HLC Facebook group facilitator) posts a lot of stuff about what's happening with HLP in other areas of England which is interesting to read, and she puts stuff up whenever there is a national health promotion project to try to get us all doing something together in our pharmacies" HLC6

"I always check when somebody has put something up because a lot of the time it's really useful, like when the next meeting is (HLC network meeting) and what it's going to be about. Also some of the

girls (HLCs) post news articles about pharmacy and tells us what we could be doing to help things like obesity and drinking problems” HLC2

“I use it mainly to check what people have posted on the group. I don’t always get the information in the post but XXXX (HLC Facebook group facilitator) always puts up important information about what is happening locally and how community pharmacy can get involved” HLC5

A further theme was that of using the Facebook group to seek advice and ideas of peers in designing and raising awareness of a pharmacy health promotion campaign. Two of the interviewees cited this to be a reason for accessing the HLC Facebook group.

“I’ve been in touch to see what everyone else was doing with Stoptober (National Quit Smoking campaign). I know that some of the pharmacies do really well with that and I was looking for ideas..... I got some really good ideas back on getting more people signed up and what I should say (recruitment process)” HLC3

“I’m quite new to the HLP stuff, but I saw the photos on Facebook of what other pharmacies have done with the health promotion stands and putting up posters and I wanted to something similar” HLC2

Interestingly, questioning individual HLCs on how often each of them posted an item or initiated a discussion on the Facebook group revealed that three of the six interviewee’s activities comprised of responding to initiated discussions or commenting on posted items; and one of the interviewees admitted that they only access the Facebook group to read information and do not contribute at all.

Further to this, it was commented on that in more recent months, the HLCs had not accessed the Facebook page as often as before due to a reduced online activity within the group. The interviewees discussed possible reasons for this later in the interviews.

“Over the last few months, I’ve noticed less and less people are posting things and that’s a shame because I think people (HLCs) will lose interest if there’s nothing happening and will not bother anymore” HLC1

“I think it’s since XXXX (the local pharmaceutical advisor) retired and we stopped having the meetings, and I know that XXXX (HLC Facebook group facilitator) went off sick, it seems as though not many people are using it anymore..... I still check it (HLC Facebook group) occasionally just in case I’ve missed something but recently nobody has posted anything” HLC2

In discussing the use of the Facebook group to access information, the literature recognises that VCoPs provide two types of information. The first type is described as explicit which includes documents such

as journals, media reports and conference papers. The second type is described as implicit information, which is information provided by the community members, gathered through their experience and expertise⁴⁵⁵. In the author's study, community members shared both types of information with other members by interacting with them, for the purpose of enhancing knowledge and keeping up to date with developments in the area of HLP. In other words, this study has demonstrated that members of VCoP can learn from, discuss about, and contribute to the community's explicit information, and they can share their implicit information for the purpose of enhancing knowledge. Similar observations have been reported in related studies^{456, 457}.

Further, Allen *et al.*⁴⁵⁵ provided ten reasons why individuals chose to join and participate in a VCoP, all of which were identified to an extent, in the responses of the HLCs. These reasons are: asking and answering questions; chatting with experts; solving problems; making connections with other community members; creating sub communities around a special interest topic; participating in collaboration; networking; construction of knowledge baseline and sharing best practices.

The HLCs' reference to user participation in the Facebook group is also discussed in the literature. Herring⁴⁵⁸ indicated that online communities should comprise a core of regular participants, actively engaged with each other through what he refers to as "self-sustaining participation". Preece and Maloney also allude to this in identifying five important characteristics of virtual communities. The five characteristics they refer to are: *members have a shared goal, interest, need or activity; members engage in repeated, active participation; members have access to shared resources; exchange of information, support and services; and members have a shared context of social conventions, language and protocols*³⁴⁰. In the analysis of the HLC interview transcripts, the first four characteristics can be recognised; however no reference to a shared context of social conventions was mentioned. Despite this, it does not necessarily mean that this was not a characteristic of the virtual community; it has been reported that such an attribute may remain unrecognised or unreported by community members although clearly evident in the analysis of their interaction⁴⁵⁹.

To explain the variable level of participation, the literature suggests that VCoPs are composed of both observers, who are persons still considering whether the community is a right fit for them, as well as participants, who have begun to reflect on what they have to contribute to the community⁴⁶⁰. Blanchard and Markus⁴⁵² further identify two types of distinctive online participants in virtual environments. They claim that there are active participants who embrace activities related to posting and responding to messages and passive participants who primarily focus on the reading of messages. Wang and Yu⁴³² use the term *lurkers* to classify participants who not only just read posts but also to apply to those observers who may not be ready to join the community yet. This lack of visible presence

may leave the researcher and indeed other community members, unaware of the extent of involvement of all the community members.

In essence, these studies indicate that any VCoP is likely to be composed to varying degrees of lurkers, observers, passive and active contributors. More particularly, because online interaction is often measured by who contributes, posts questions and provides feedback at the expense of other types of behaviour, like reading and viewing posts, having a high number of lurkers/observers and passive contributors (when compared to active contributors) who read but do not post, might imply that online interaction is low⁴³².

Strategies to compensate for this effect of “participation inequality” have been suggested in the literature; extending membership criteria and continued communication to attract new members are two strategies recommended⁴⁶¹. Work on participation inequality reveals that it is common to observe a 90-9-1 rule where 90% are lurkers, 9% are contributors who post from time to time and 1% post very often⁴⁶¹.

Barriers and facilitators

The HLCs reported what they perceived to be the challenges in utilising the Facebook group in a way that could support their role in continued involvement in the HLP project.

Several of the challenges discussed were mentioned by all six of the interviewees. These included the absence of a strong facilitator or leader to promote continued regular interaction through the posting of relevant material, the loss of face-to-face meetings and the lack of endorsement from employers of the HLC role. These aspects were exemplified by the following observations.

“Its not easy, especially when there aren’t many people in the group who say much, XXXX (HLC Facebook facilitator) seemed to bring everyone together and get people talking, we did have some interesting conversations about electronic cigarettes and people were posting articles and information. But I’ve noticed that XXXX isn’t posting stuff anymore, I don’t know why, but things have got a lot quieter recently” HLC3

“It’s a real shame they stopped the meetings (HLC network meetings), I don’t think the Facebook group can replace the meetings. The meetings gave us time away from the pharmacy and time to spend talking about our ideas and we could focus on HLP stuff for the time we were there. I remember I would come away from those meetings feelings motivated with lots of ideas..... The Facebook group can work but we need to have the meetings too” HLC5

“Since the meetings have stopped I do feel that the HLC role has become less important; we’ve lost focus. My manager in the pharmacy says that HLP has passed and doesn’t give me time away from dispensing and serving customers... we are short-staffed, but we have always worked this way and I would be given some time to change the health stand (health promotion stand in the pharmacy) but now it does feel that there is less support for HLP” HLC2

“I’ve tried to use the computer at work to log onto the Facebook group because I had some questions and I wanted to see about arranging a visit to our local church group with XXXX pharmacy down the road, but my manager said that I shouldn’t use Facebook at work because we would get in trouble” HLC6

These thoughts of the HLCs strongly reflect findings from McDemott’s analysis of online communities⁴⁶². He recognised four factors to be community challenges. The first factor is the involvement of *thought leaders*; these are individuals who either have important specialised knowledge or who are well-connected and influential members of the network. These individuals can build energy in the community and encourage the involvement of other members. The concept of *thought leader* can be compared with great similarity to Brennan and McGowan’s work³⁹². They describe the community’s moderator or facilitator’s role, as someone to choose to seed discussions where possible in order to keep online interaction vibrant and to ensure that networks and connections are developed by community members.

Stuckey and Smith³⁹³ also recognise that the presence of “leadership” within the VCoP is the most significant factor implicated in the ability to sustain the community and this may be in the form of a moderator, facilitator or list owner. Significant to the observations reported in this study, Ranmuthugala concluded that the moderator may be the single most important point in an online community, whose departure or absence may result in the break of flow of information and interaction⁴¹⁰.

The second of the factors discussed by McDermott is that of personal relationships between community members. He concludes that the key for ongoing interaction and collaboration through an online community is the contact members have with each other, and the social connection that comes paired with it. It is evident from the HLCs’ responses that since the face-to-face meetings were de-commissioned, the level of interaction and contribution of activity on the Facebook group had diminished.

Thirdly, McDermott mentions the development of an active passionate core-group is important in helping to support the creation of a VCoP. In introducing the Facebook group, an opportunity was

provided for HLCs to take on the role of group facilitator; the rationale for permitting numerous individuals to volunteer for this post, was to enhance the prospect of creating a core-group of influential members. Three HLCs volunteered to accept this role, and were provided information on the role of a facilitator in an online community. However, despite this attempt to create the core-group of community members, it was later identified in the interviews that although there had been significant efforts to promote interaction in the Facebook group by these facilitators, illness and change of employer meant that two of three appointed facilitators were no longer contributing activity to the Facebook group.

The final factor reported by McDermott was the creation of forums of thinking together as well as a place to share information. In discussing this factor, McDermott emphasises the need for community members to not only share information with each other, but also communicate regularly. Through the HLCs' responses, it is clear that the lack of regular communication within the Facebook group was a reason for reducing their involvement.

The topic of employer support is one that has been recognised in the related literature. Allen⁴⁵⁵, in identifying the factors that determine the success of an online community alludes to the amount of time permitted by organisations for users to access the community. Similarly, McDermott⁴⁶² reports that the organisational support in terms of time and encouragement for participation can be a challenge to the functioning of an online community. This factor was made evident in the HLC's claims of not being permitted usage of the computer at work to access the Facebook group and the lack of support from the manager in not allocating time to update the health promotion stand and carry out other specific HLP activities.

5.3.2 Stage 2 results: hypothesis generation

The coded data derived from the interview transcripts were categorised into contexts, mechanism or outcomes. Table 5.7 presents a list of possible CMO configurations that potentially explain the role of the HLC Facebook group in supporting HLC practice.

Table 5.7 Preliminary list of CMOs that potentially play a role in the HLC Facebook group supporting HLC practice.

Contexts:

- A common goal is shared amongst the members of the HLC Facebook group
- Members are committed to supporting the HLP project

<ul style="list-style-type: none"> • Varying levels of expertise is represented in the membership
<p><u>Enabling mechanisms:</u></p> <ul style="list-style-type: none"> • Creating social capital • Uncomplicated and supported access to the Facebook group • Fosters trust and respect through frequent face-to-face interactions • Facilitate access to more experienced community members • Facilitates knowledge exchange between members • Alleviates sense of professional isolation • Endorsement and support from the organisation • Supportive sponsoring agent(s) <p><u>Disabling mechanisms:</u></p> <ul style="list-style-type: none"> • Lack of opportunity to meet face-to-face and establish/maintain connections • Lack of clear focus among group members on specific goal • Lack of contribution of community members
<p><u>Outcomes-</u></p> <ul style="list-style-type: none"> • Introduced a new approach or method in work practice • Developed a new method or approach to solve a work-related problem • Decreased time to problem solving • Developed a new system or approach to improve services. • Reduced professional isolation • Intra-professional collaboration • Encourage evidence-based practice

5.3.3 Stage 3 results: Observation (Online survey and Social Network Analysis of Facebook activity)

Fifteen responses to the online survey were received from the HLCs. Table 5.8 indicates the CMO configuration statements (derived from the preliminary CMOs Table 5.7) tested as part of the online survey exploring users' experience of participating in the HLC Facebook group. The median score and interquartile range was calculated for each of the statements, the results of which can be found in Table 5.8.

Table 5.8 CMO configuration statements tested as part of an online survey exploring users' experience of participating in the HLC Facebook group.

Participating in the HLC Facebook group has allowed me to do the following:	Median score (n=15)	Interquartile range
1. Introducing a new method or approach to solving a problem that I experienced in my practice	4	2
2. Providing me with expertise to progress my learning	4	2

3. Allow me to keep abreast with the latest developments to my role as a HLC	4	2
4. Being able to bounce ideas/good practice with other HLCs	4	2
5. Supporting me to share issues in practice	5	1
6. Getting access to a wide range of evidence based resources to aid my professional practice	3	1
7. A positive impact on my career development	3	2
8. Helping on at least one occasion in my ability to solve a work-related problem	4	2
9. Attending the HLC face-to-face meetings helped to establish links with other HLCs	5	2
10. The commitment of the other members of the Facebook group encouraging my contribution to the group	4	2
11. Access to a trusted colleague that I can turn for advice when needed	4	2
12. Getting access to information that demonstrates success of evidence-based practice makes it more likely that I will adopt evidence-based practice in my own work	4	1

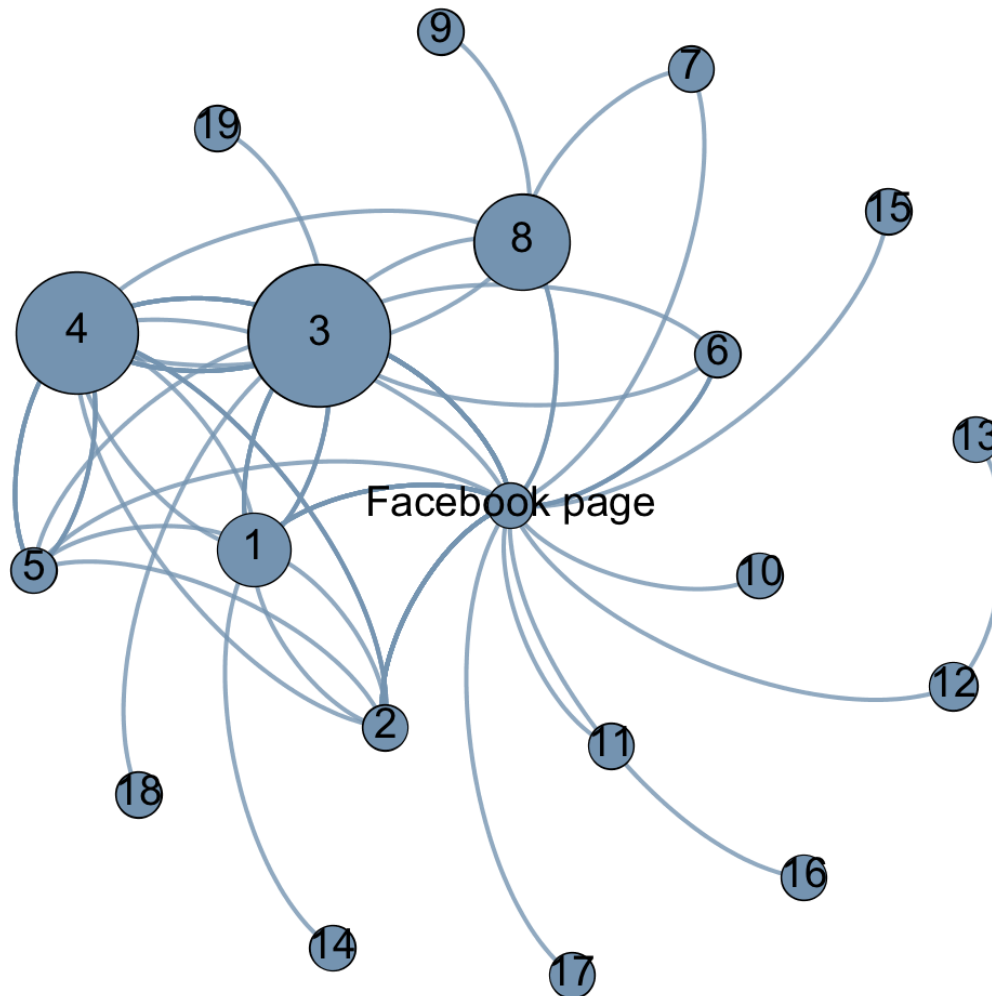
Of the 12 CMO configurations derived from stage 2, all but three of the statements scored a median of 4, indicating that HLCs 'agree' with the majority of the statements. The statements regarding whether the HLC Facebook group has provided access to a wide range of evidence based resources to aid professional practice and whether the HLC Facebook group has had a positive impact on career development reported a median score of 3. This indicates that the respondents had a close to neutral opinion with regards to these two statements. Furthermore, the interquartile-range of all of the statements reveal a score of 2 or less thus indicating a consistent level of agreement amongst the HLCs.

Apart from the online survey, a NodeXL spreadsheet was generated of the HLCs' activity on the Facebook group. This included posts that each HLC had made to appear on the HLC Facebook group as well as interactions that took place between HLCs.

Over the nine month period, 19 HLCs had contributed 203 distinct items, in the form of posting information or interacting with other HLCs.

The relationship in Figure 5.5 shows how 19 of the 29 registered HLC Facebook group users (each user is represented as a number) posted and replied to each other in the Facebook group. The circles with a larger diameter indicate that these members contributed a greater interaction in the Facebook group.

Figure 5.5 HLC Facebook activity generated from a NodeXL spreadsheet



Overall the emerging community had an overall graph density of 0.234 (maximum score = 1), thus indicating a lack of connections made between members of the Facebook group. This figure suggests that despite a relatively high level of activity of over 200 items in the Facebook group, few connections and relationships have developed among users in the community in its first nine months, with informal clusters of HLCs becoming evident within the group. Despite the limited connection, three users (3,4 and 8) had the greatest betweenness centrality measures of 32.6, 25.8 and 17 respectively (NodeXL analysis). Significantly, two of these individuals were HLC Facebook facilitators.

In Figure 5.5, these *betweenness* measures show the users with the greatest number of persons (or nodes) to which they have interacted. These users are 3 and 4, both of whom were HLC Facebook facilitators. The literature indicates that these individuals are key persons in the community and are

important to identify because their activities are likely to challenge the development of knowledge silos and help create broader connections across otherwise disconnected communities⁴³⁶.

Table 5.9 provides information of the items and activities posted on the HLC Facebook group categorised by theme.

Table 5.9 Items and activities posted on the HLC Facebook group by the HLCs

Description of item or activity posted on the HLC Facebook group	Number of posts
Information relating to developments of the HLP project	6
Information relating to local or national health campaigns	6
Request for help with regards to a work-related problem	13
Seeking collaboration to run health campaign	7
Seeking advice on a practice-related issue	8
Advertising of local training events	5
Media reports relating to the community pharmacy profession	4
Posting of guidelines for professional practice	3
Seeking ideas to run health promotion campaign	5
Multimedia (photos, videos, press article) of HLP recognition in Portsmouth.	3

The HLC Facebook group was used for diverse purposes by the HLCs, consistent with those reported in the HLC interviews and subsequently discussed in Section 5.4.1.

The SNA only captured the communication that took place between individual members and that which was posted onto the Facebook group page. Facebook also records the number of ‘likes’ attributed to a particular activity, which is a function that expresses one’s agreement or positive relationship⁴⁶³ as well as the number of users who have accessed the group and seen a particular activity (recorded as ‘seen’). Significantly, it was evident that the number of ‘likes’ and ‘seens’ attributed by users to specific HLC Facebook posts are markedly greater than written responses (attributed to the 203 distinct items there were 484 ‘likes’ and 756 ‘seens’). This suggests that there are community members who access the Facebook group to read posted information and view activities but do not contribute to the interaction with their fellow community members. This observation is consistent with Nielsen’s proposal to explain ‘participation inequality’ within an online community and the presence of lurkers, observers, passive and active contributors⁴⁶¹.

Further observations of the level of activity on the HLC Facebook group revealed a gradual dwindling since April-May 2016, approximately six months post-introduction (November 2015-April 2016, mean number of 31.4 items/month posted on the Facebook group, May – August 2016, mean number of 5.4 items/month posted on the Facebook group). This observation is consistent with the reports of the HLCs and also coincides with the de-commissioning of the HLC meetings as well as the departure of the group facilitators.

These findings may be explained by observations made in previous studies which have demonstrated that technology itself will not make a VCoP successful⁴⁶⁴. Further, it has been proposed that the facilitator, and also the core-group of VCoP community members, need to guide the community at least for the first four months after implementation, which can be a commitment of approximately one hour a week³³³.

5.3.4 Stage 4 results: Programme specification

The theorised role of VCoPs in supporting the practice of HLCs and potential CMO configurations derived from stage one were reviewed in light of the findings in Stage Three of the evaluation.

The observations reported in the SNA of Stage 3 resonate strongly with the results of the online survey. There is evidence present in both sets of data that HLCs have used the Facebook group to support their practice in delivering HLP activities; namely conducting community pharmacy services and arranging health promotion promotions and activities.

However, it should be recognised that a limitation of the SNA software utilised in stage three of the evaluation was that the data captured was a 'snapshot' of the activity recorded on the Facebook group over a nine-month period. The SNA software did not demonstrate how the level of activity varied over time. Consequently, the data included in the realist evaluation may not accurately represent the current activity of the VCoP.

The literature attempts to explain the variable activity of a VCoP in proposing the five phases that can be applied to the establishment of a successful VCoP²⁷⁹. The following make up the five phases: 1. Beginning; 2. Growing; 3. Maturing; 4. Maintaining, 5. Transformation.

There is strong evidence from the findings reported in this chapter, that the HLC VCoP has entered phase 4 – *The Maintaining Phase* of the VCoP five phase model, which has been attributed the following description:

The VCoP enters into this stage when there is a significant change to the environment in which the VCoP was introduced. This could come about in the following circumstances: end of project, discontinuation of funding or completion of intended project outcomes. In these circumstances it has been acknowledge that it can be challenging for the VCoP to continue to function. In order to continue to function, efforts should be made to enhance user motivation by setting goals, attracting new members through face-to-face events and disseminating newsletters²⁷⁹.

The VCoP was launched and attained 29 registered members; this included a core-group of community members who interacted frequently and benefitted from their involvement. However, the observed recent dwindling of activity following a number of challenges faced by the VCoP appeared to contribute to its reduced benefit.

5.3.5 Summary

This study describes the development of a platform to establish and host a VCoP to support the HLC CoP and evaluating its subsequent success towards achieving this.

Informed by the literature, a virtual platform was created through the employment of a designated HLC Facebook group. By means of realist evaluation techniques, this study identified some of the benefits that the designated Facebook group can offer to support knowledge sharing and networking for its members. The final stage of the realist evaluation provided evidence for the establishment of a VCoP.

However, this study recognised that a VCoP is a fragile concept and changes to the environment in which the VCoP developed can significantly affect its functioning.

This study described a protocol that uses mixed methods to examine systematically and understand how and why a Facebook group can support a HLC CoP. Realist evaluation is being used increasingly in the healthcare sector, recognising the fact that programs and interventions requiring behavioural change operate within a complex social and cultural context and that the operating context plays an important role in determining impact. In such circumstances, the traditional approach of evaluating success based on whether or not a pre-defined outcome is achieved does not provide decision makers with sufficient information to assess the value of a program outside the context in which it was tested. There is a need for methods that are able to tease out the mechanisms by which a program results in change, and study the interactions between these causal mechanisms and context.

5.4 Conclusion

This study is the first to report on an attempt to introduce a VCoP to support HLCs, who are often professionally isolated and lacking networking opportunities. The study comes at a time of looming financial cuts to community pharmacy designed to make the sector more “efficient” through changes in the roles of community pharmacists and pharmacy teams. This imminent environment of change is likely to result in new responsibilities for pharmacy staff, yet potential support strategies have yet to be reported⁴⁶⁵.

The realist evaluation which the findings of this study are drawn from, suggests that it is possible to establish a VCoP capable of sustaining commitment to deliver HLP activities and provide a platform for HLCs to share advice and ideas in the scope of their practice. The results after nine months of online interaction were promising and demonstrate that with proper facilitation and opportunity for face-to-face meetings, a designated Facebook group can become a mechanism that can equip HLCs with the motivation and knowledge to support their practice in delivering HLP activities.

Chapter 6 : Investigating the sustainability of the HLP project in Portsmouth's community pharmacies

6.1 Introduction

In Chapter 3 the implementation of the HLP project within Portsmouth's community pharmacies was investigated. The stages and activities of the implementation process were identified and discussed within the context of the concepts included in the General Implementation Framework (GIF). The findings indicated that few pharmacies had entered a stage of sustainability, whereby provision of HLP services had become embedded into daily practice. It was concluded that a possible reason for this was that insufficient time had passed since the introduction of the HLP project for pharmacies to reach the sustainability phase of implementation.

In this chapter, the community pharmacies were re-visited four years after the study in Chapter 3 was conducted, and a method consistent with that described in Chapter 3 was used to explore the sustainability of the HLP project within Portsmouth pharmacies.

6.1.1 What does sustainability mean in the context of HLPs?

The 2014 NHS England report, *"Sustainable, Resilient, Health People and Places"*⁴⁶⁶ recognised that the NHS, public health and social systems are not sustainable without radical transformation. Supporting the strategies proposed to address sustainability challenges, is the development of new models of care implemented at a local level; and designed with a sustainable development plan. The report recognises sustainability as a factor underpinning high quality care and encourages service commissioners to develop criteria that recognise innovative approaches of delivering care that costs less and reduces inequalities. The HLP project is one such model of care that will be required to demonstrate its sustainability.

It is well established in the literature that implementing innovative practices can be challenging⁴⁶⁷. Moreover, it has also been recognised that many innovations that are initially successful, fail to become part of routine practice of host organisations or communities.

Significant resources have been invested by Government agencies and community organisations to research into evidence-based practices, implementation of clinical guidelines and quality-improvement innovations^{182, 468}. To date, the majority of studies in this area have focused on identifying the factors essential for successful initial implementation. More recently, stakeholders and policy makers are increasingly concerned with the sustainability of innovative programmes and complex interventions.

Within the context of healthcare, sustainability has been described as falling into one of three components: (1) continued benefits to those who received health services when the programme started and to new participants when the supporting funds are discontinued; (2) continued implementation of a programme activities in an organisation following the discontinuation of the programme financial support; and (3) community empowerment to improve their own health by continuing the activities of a finished programme⁴⁶⁹. Due to the complexity of this area of implementation science, researchers have argued that the concept of sustainability should be studied as a distinct and dynamic phenomenon^{469, 470}. Although the literature identifies a series of factors that generate favourable conditions for successful implementation (discussed in Chapter 3), it has been observed that their presence or influence may become less prominent as time passes⁴⁷¹⁻⁴⁷³. This can result in innovations, which demonstrated successful implementation, later failing to continue as originally implemented. A number of factors that may contribute to the discontinuation of a particular intervention have been proposed. The development or discovery of more effective, efficient, or compatible practices may render an intervention redundant¹⁵⁶. Adaptations, partial continuation of a programme or intervention, or integration of new practices may occur following the introduction of an innovation. These may occur in response to new evidence, changes in priorities or resource availability, or other contextual influences; all may play a significant role in whether an intervention remains valuable. Alternatively, the challenge to sustain an effective intervention at an adequate standard of quality, intensity, or scope once implemented, may be at odds with the original goals and intentions of the adopting organisations⁴⁷⁴⁻⁴⁷⁶. New ideas may be incorporated into existing interventions rather than undergoing full integration⁴⁷⁷; this can leave the intervention susceptible to erosion over time⁴⁷⁸. Unintentional disengagement may transpire should local conditions change; this could result from issues relating to staffing, resources, or competing demands⁴⁷⁰. Should failure to obtain the desired outcomes result from these processes, the value of the intervention may be undermined which may make discontinuation a greater possibility⁴⁷⁹. Consequently, consideration of these processes at the design stage has been recommended to promote the sustainability of interventions at a level that is sufficient to achieve the desired outcomes²³⁶.

6.1.3 The sustainability of interventions in healthcare settings

The main challenge that exists in studying the literature pertaining to sustainability is that often interventions do not continue through the process of implementation unchanged. Adaptations to the design are made to enhance their suitability for different contexts; these contexts may differ significantly from those in which the intervention was originally designed and developed^{236, 469}. Consequently, an intervention may undergo multiple adaptations and serve a purpose other than that initially intended. This observation has been identified within the healthcare literature^{232, 236, 480}. Models of sustainability have been put forward that attempt to incorporate differing priorities and perspectives on this issue²³². Some of the models proposed, focus on the intervention and articulate the series of factors or influences that enhance the prospects for the sustainability of a particular intervention⁴⁸¹. Whereas within other models, emphasis is placed on the relationships between the wider environment factors, contextual influences, and the characteristics of the intervention^{482, 483}. For example, employing the former approach may focus on the factors contributing to preservation, fidelity, or discontinuation of an intervention. Whereas the latter approach would attempt to explore ways in which the intervention and the local context mutually adapt and evolve and how this process impacts sustainability⁴⁸⁴.

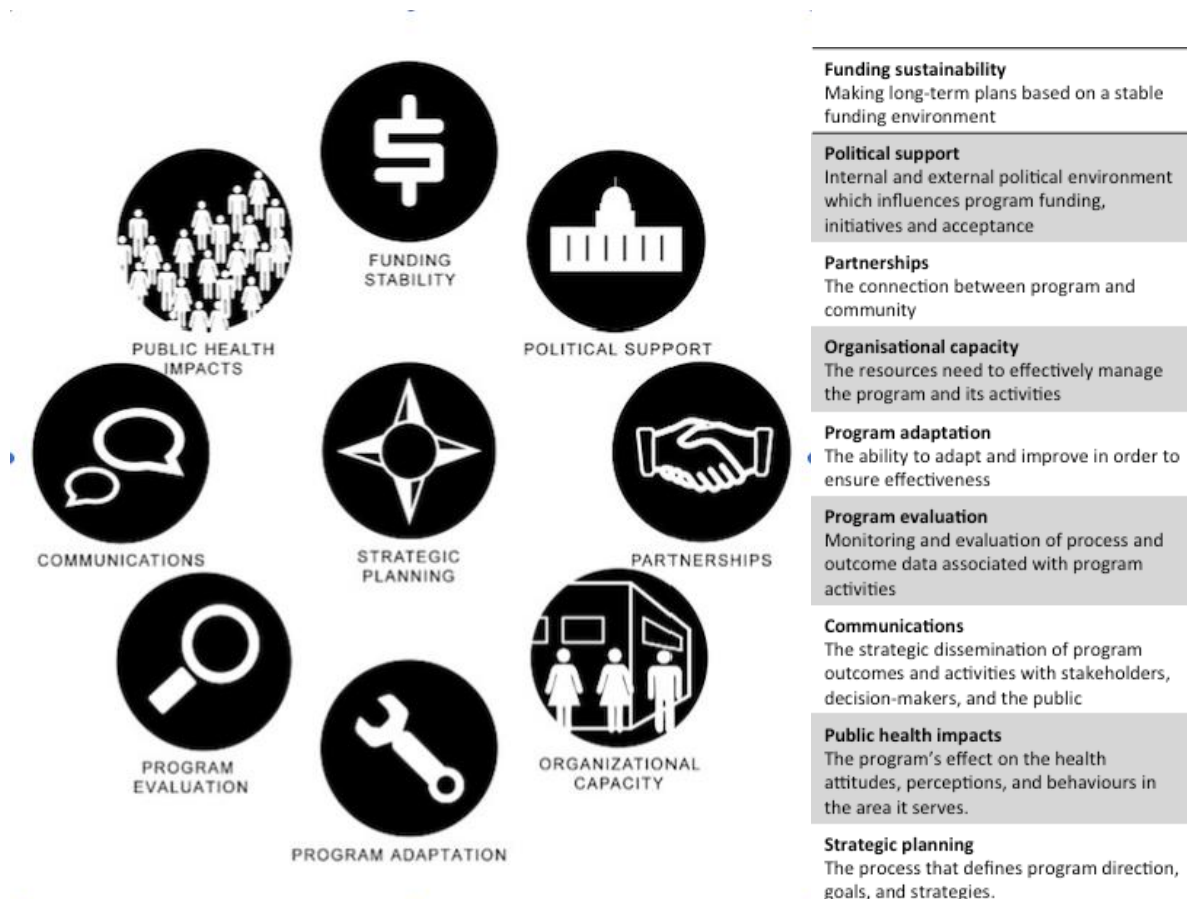
Many studies have investigated interventions, procedures, or programmes that were implemented to achieve specific programme-, patient-, or population-level benefits. Stirman *et al.*²³² reviewed this work and identified those studies where sustainability outcomes were discussed or where influences on the sustainability of these interventions were reported²³². The authors identified that most of the studies included in the review did not provide an operational definition of sustainability, which did not allow for a consistent interpretation of study outcomes. In many cases, “partial sustainability” was reported whereby only some elements of the original intervention continued to operate. The authors also revealed that in order to assess sustainability, many studies attempted to identify the employment of “*sustainability strategies*”²³² at the provider level, such as training and supervision, audit and feedback, building triggers into the process of care, checklists, or reminders and efforts to align the intervention and setting⁴⁸⁵⁻⁴⁸⁷.

Further to Stirman *et al.*'s work and with the increasingly important challenge facing commissioners around sustainability, Schell *et al.* conducted a similar review but focussed on public health interventions⁴⁸⁸. The study also identified that over time, a programme can sustain various elements, including its activities, community-level partnerships, organisational practices and benefits to

customers. These were termed sustainability outcomes and the authors suggested that each of these may be investigated to assess sustainability, since they reflect the various ways that a programme can continue to have its intended effects. But further to this Schell *et al.* investigated the literature to identify how a programme can position itself to best ensure that these sustainability outcomes can be realised. The authors introduced the term sustainability capacity to demonstrate this concept which recognises the existence of structures and processes that allow a programme to effectively implement and maintain its activities.

Following the review of the public health literature, Schell *et al.* identified nine core influences of an intervention’s capacity for sustainability⁴⁸⁸. These are illustrated and defined in Figure 6.1.

Figure 6.1 Graphic framework for sustainability of public health programmes/interventions⁴⁸⁸.



Schell *et al.* propose that sustainability capacity is a critical element of a public health programme and without it, money and resources will be wasted, trust between the programme (or programme providers) and the community may be damaged, and the programme may be limited in its ability to

achieve its public health goals. They suggest that programmes with a higher capacity for sustainability may be better prepared when faced with threats such as funding cuts or infrastructure changes.

6.1.4 Sustainability capacity of the HLP project

The literature has begun to report the various benefits of adopting the HLP project^{326, 330, 331}, however the sustainability capacity of the HLP project has yet to be investigated.

Following *Schell et al.*'s initial work in developing the conceptual framework, researchers have produced an assessment instrument to measure the capacity for programme sustainability, the Programme Sustainability Assessment Tool (PSAT)⁴⁸⁹. The tool has since undergone consistency and reliability testing in a sample of 592 respondents representing 252 public health programmes, and it was proposed that the PSAT has the capability to capture the distinct elements of programme sustainability as articulated in the Framework for Sustainability of Public Health Programmes (Figure 6.1).

The assessment tool is administered as a paper instrument and comprises of 40 items organised within eight domains, (each domain having five items). The eight domains being political support, funding stability, partnerships, organisational capacity, programme evaluation, programme adaptation, communications and strategic planning. (The PSAT used in this study can be found in Appendix 6.1) Respondents rated the extent (1, no extent to 7, a very great extent) to which a programme or intervention has or does what the items describes. Table 6.1 illustrates an example.

Table 6.1 Example of one of the 40 items included in the Programme Sustainability Assessment Tool

Organisational capacity domain	Not at all	To a very little extent	To a little extent	To a moderate extent	To a good extent	To a great extent	To a very great extent	Not able to answer
	1	2	3	4	5	6	7	
The HLP project is well integrated into the operations of the pharmacy.								

The Program Sustainability Assessment Tool is a copyrighted instrument of Washington University, St Louis, United States. All rights reserved and is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike Licence. This licence allows researchers to adapt, tweak, and build upon the initial study non-commercially, as long as Washington University is credited. Further, the use, download, reproduction, reprint, or modification must be for non-commercial, educational or personal use only.

The PSAT has since demonstrated its utility in evaluating sustainability capacity in the eight specified domains^{490, 491}.

6.1.5 Aim and objectives

The research reported in this chapter explored whether the HLP project was a sustainable intervention within Portsmouth's community pharmacies and to investigate the factors that influenced its sustainability.

The research had the following objectives:

1. Administering the Programme Sustainability Assessment Tool (PSAT) to community pharmacy staff to evaluate the sustainability capacity of the HLP project across eight specific domains.
2. Investigating the reported challenges, and the strategies employed by community pharmacy staff to enhance the sustainability efforts of the HLP project.

6.2 Methodology

This study investigated the experiences and opinions of the community pharmacy staff employed within Portsmouth's accredited HLPs, to address the research objectives stated in Section 6.1.5.

The PSAT was adapted by the researcher to be used within this study in the context of evaluating the sustainability capacity of the HLP project. Since the second objective of the study objectives was to investigate the reported challenges and strategies, exploratory qualitative interviewing and thematic framework analysis were deemed as the most appropriate approach to collect this data. In addition, qualitative interviewing are the most appropriate method to allow exploring participants' views and experiences in depth,²⁰⁵⁻²⁰⁷ in order to better understand the sustainability capacity of HLP in community pharmacy, with data being collected over a relatively short period of time.

Other methodological approaches were also considered but later discarded, deemed as inadequate to meet the objectives of this research. These approaches included ethnography, grounded theory and phenomenology. An ethnographic approach was inadequate for this research, as it would have involved observing pharmacists in their natural environment (i.e. pharmacies) over a long period of time, and using the observational data collected as evidence to explain the phenomenon under investigation¹⁸⁸⁻¹⁸⁹. Not relying on explicit accounts from the participants, it would not have been possible to capture participants' individual accounts and viewpoints about their workplace in order to investigate the sustainability capacity of the HLP project.

A grounded theory approach was also deemed as inadequate as it involves collecting data when there is little or no evidence about the phenomenon under investigation, and without any theoretical assumptions previously established¹⁹². This research draws on the assumption that a series of factors influence whether or not innovations implemented within healthcare settings become sustainable, based on previous evidence collected by a review of the literature.

A phenomenological approach was initially considered as it is also concerned with individual perspectives and experiences, using a small sample size over a long period of time¹⁹⁴. However, similarly to grounded theory, this approach does not follow pre-established theoretical assumptions, and data is difficult to analyse as it does not necessarily fit into categories. In addition, participants are expected to be invested in the research for extended periods of time and on several different occasions, in order to draw meaning from the data. Given the limited time frame to collect data for this research, qualitative interviewing and thematic framework analysis were deemed as more adequate when compared to phenomenology, as participants were only needed to participate once.

Regarding data collection, semi-structured qualitative interviews were deemed as the most adequate method for this research, as they provide flexibility in terms of the data collected²⁰⁵.

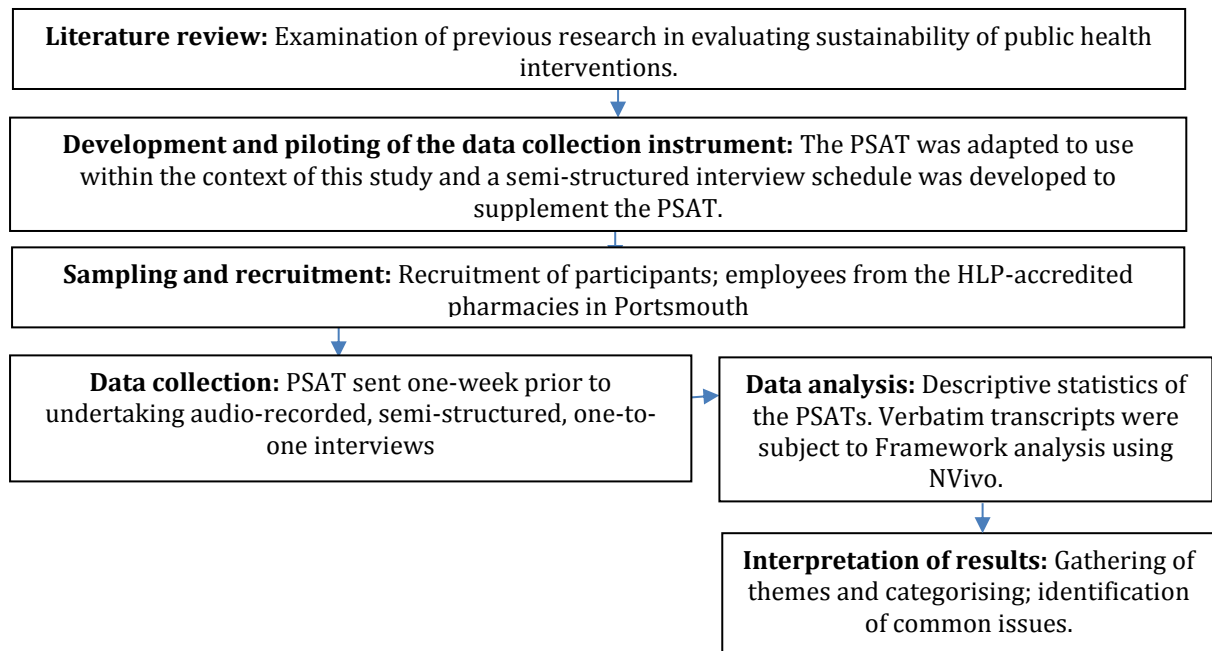
6.2.1 Overview of the study method

A semi-structured interview protocol was designed to supplement the items in each domain of the PSAT. Both the adapted PSAT and the interview protocol were piloted prior to use with two community pharmacy staff involved in delivering HLP activities.

Pharmacy staff were contacted by phone and via the HLC Facebook page. A paper-copy of the PSAT was posted to participants, to complete prior to carrying out one-to-one, semi structured interviews.

Descriptive statistics were used to categorise then summarise the data obtained from the completed PSATs. Interviews were transcribed verbatim and subject to framework analysis using the conceptual framework of public health programmes. Figure 6.2 illustrates an overview of the study methodology.

Figure 6.2 Overview of study methodology to investigate the sustainability of the HLP project



6.2.2 Data collection

The sample population for which the research questions were appropriate were staff employed at HLP accredited community pharmacies in Portsmouth.

A written version of the PSAT was used to assess the perceived sustainability capacity of the HLP project in the eight domains. However, due to the tool’s brevity and simplicity, previous studies utilising the PSAT have encouraged as well as administering the PSAT, to discuss the domains with the respondents to capture nuances in local settings^{490, 491}. Therefore, open-ended questions were developed by the author for each domain to address this limitation e.g. Describe the strengths and weaknesses you see in terms of funding stability to maintain the HLP project”. These questions formed the interview schedule and were set around elements of the sustainability of interventions; developed and informed by the related literature (Sections 3.1 and 6.1).

The interview schedule and PSAT were piloted in an interview with a pharmacist and a HLC involved in delivering HLP activities. There were no major changes to the questions following the pilot

interview, although the term 'political champion' was recognised to cause potential confusion with the HLC role so was replaced with 'political advocate'. Consequently, these data were included in the data analysis.

A list of HLP-accredited community pharmacies was obtained from Portsmouth CCG. Despite this study taking place four years after the initial implementation study (Chapter 3), the list of HLP accredited pharmacies had remained the same with no further additions.

The reason for excluding non-HLP accredited community pharmacy employees was that it was very unlikely that there were pharmacies actively involved in the HLP project who had not yet achieved accreditation in the six years since the introduction of the project. Moreover, the aim of this study was to investigate sustainability of the HLP project within community pharmacy, thereby effectively excluding non-HLP accredited pharmacies from the study criteria.

Contact was made with each of these pharmacies via telephone. A study invitation was also posted on the HLC Facebook group. In each case, a mutually convenient time was arranged to conduct the interview with willing respondents and a study information sheet (Appendix 6.2) was sent by mail prior to visiting the pharmacy. A paper copy of the PSAT was also mailed to respondents one week prior to the interview, inviting them to complete the closed-ended questions and to consider their responses to the open-ended questions (Appendix 6.1).

Interviews were carried out face-to-face in the private consultation room or staff room of the community pharmacy. The interviews were audio-recorded; respondents were asked to state their role and the number of years since HLP-accreditation. Respondents then reported their responses to the PSAT items and then responded to the open-ended questions.

Following the interview the paper-copy of the PSAT was collected from the respondent. Interviews were transcribed verbatim and checked for accuracy by a second member of the research team.

6.2.3 Data analysis

The responses to the interviews were grouped under the eight domains of the PSAT and were subjected to framework analysis (see Table 3.7, Chapter 3).

The completed PSATs were collated. Microsoft Excel was used to insert all of the PSAT scores and to calculate mean values for each of the 40 items from each of the respondents. An overall domain score was obtained by averaging the scores for the five items associated with each domain.

To determine cross-site domain scores, an average of the domain scores collected from each of the PSATs was calculated; standard deviation was also calculated to assess variability by domain.

Mean and standard deviation descriptive statistics were utilised in analysing the PSAT scores in this study in line with the designer's recommendations and its use in previous studies^{490,491}.

6.2.4 Ethical approval

This research received a favourable opinion from the Portsmouth NHS Local Research Ethics Committee (ref 10/H0501/6) 22/01/10 (Annexe 1).

6.3 Results

Staff from 12 of the 17 HLP-accredited community pharmacies in Portsmouth agreed to be interviewed. Interviews took place between November 2016 and January 2017. Those HLP-accredited pharmacies which declined to participate in the study cited the following reasons: no longer pursuing involvement in the HLP project (three pharmacies) and the staff who were involved in supporting the project no longer employed at the pharmacy (two pharmacies).

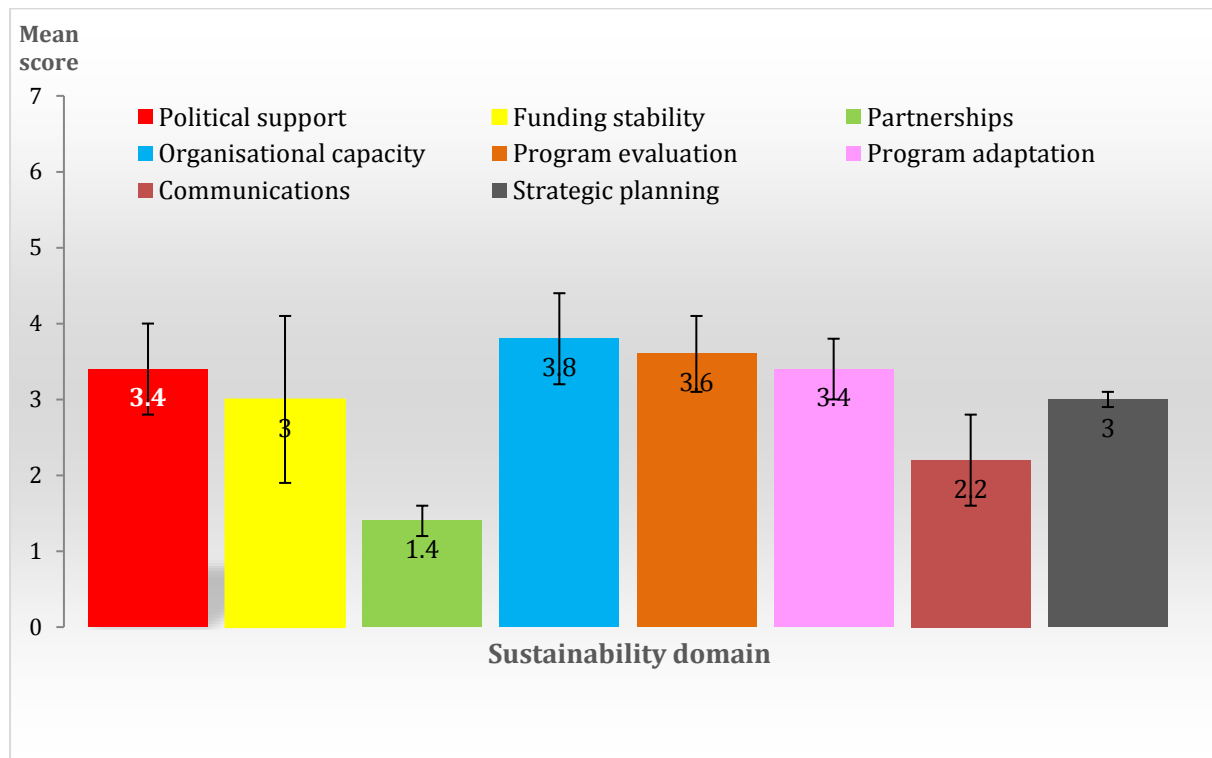
A total of 12 interviews (one member of staff per pharmacy) were conducted with pharmacy staff (eight HLCs and four pharmacists). All 12 of the interviewees had contributed to the initial study investigating the implementation of HLP in Portsmouth community pharmacies (Chapter 3). Five of the respondents were employees of different independent pharmacies and seven were employed at multiple chain pharmacies; all of the pharmacies had been HLP-accredited for 3-4 years.

The interviews ranged in length from 30 minutes to 40 minutes.

6.3.1 PSAT domain scores

All 12 staff completed the PSAT prior to undertaking the individual interviews. Figure 6.2 presents the mean domain scores and the standard deviation of the PSAT responses received from participants employed in Portsmouth's HLP-accredited pharmacies.

Figure 6.3 The Mean PSAT Sustainability Capacity scores by domain, as attributed by the pharmacy staff employed in Portsmouth's community pharmacies (n=12).



The domains of Organisational Capacity (mean = 3.8) and Programme Evaluation (mean =3.6) produced the highest scores and Partnerships (mean =1.4) produced the lowest score. The mean score across all eight domains was 3.0, thus indicating that respondents perceived that the HLP project to be sustainable to a *little extent*. The consistency of the responses to the PSAT was high, as indicated by a standard deviation (SD) of less than one in all but one of the domains (Funding stability SD = 1.1).

Presented below are the responses to the interview questions, which were designed to provide an opportunity for respondents to expand on their responses. Further, the responses facilitated further investigation into individual implementation factors and strategies employed within the HLP accredited pharmacies to promote sustainability.

Political support (cross-site mean, 3.4, SD = 0.6)

One of the biggest challenges to political support for sustainability was the change in the commissioning structure of the Primary Care Trust, from when the HLP project was first introduced, to the CCG and Local Authorities- a change that took place in April 2013. Respondents claimed that

the change resulted in a loss of influential community pharmacy advocates and that the new organisational structure of the commissioners reduced the potential influence of advocates of the HLP project to garner resources. With the loss of advocates for the HLP project, it was reported that there was a lack of an external group increasing the awareness of the project within the local community and amongst other local stakeholders. The scrutiny of funding for HLP services seemed to increase with the new commissioners; it was perceived that the commissioning arrangements became more focussed on targets, and that community pharmacy services no longer had their own designated funds, exemplified by the following observations:

“when it first came out (the HLP project), I remember that there was XXX (local pharmaceutical advisor), XXXX (HLP project team lead), XXXX (PCT communications officer) and XXXX (Local Pharmacy Committee lead) all involved in making this happen; they were always there at the events and we would get newsletters telling us what is being done locally to get this off the ground and how it’s going to change community pharmacy, but after the offices changes and the funding became more of an issue (introduction of service tendering); its fallen by the wayside (the HLP project) and I know people have retired, but they haven’t been replaced; it’s a real shame because I thought we were going somewhere with this (the HLP project)” Pharmacist 1.

Further to this, other healthcare professionals and community groups were commissioned to provide services which were included in the HLP project (e.g. smoking cessation), which reduced customer demand through increased competition. It was felt that the change in commissioners had an impact at the organisational level. Pharmacy management soon recognised the potential for instability of HLP services and therefore shifted its focus from marketing and target-setting to supporting more secure funding streams such as recruiting customers to the Electronic Prescription Service, flu vaccinations and Medicines Usage Reviews (MUR).

“the fact that a lot of the services are being offered everywhere else doesn’t help... we don’t have the same number of people coming in interested in the services, but I have to say that e-cigs (electronic cigarettes) probably has something to do with that” HLC1

“it’s not really secure anymore (the HLP project)... ‘like’ you can’t be guaranteed that services are going to continue and there’s so much else that we are told to focus on with these electronic sign-ups and MURs and in the winter it’s the flu jabs.... I don’t think it a priority anymore for XXXX (name of the pharmacy)” . HLC 2

Funding stability (cross-site mean, 3.0, SD = 1.1)

The current funding situation of community pharmacy was discussed as a challenge to the sustainability of the HLP project. Since the HLP project was introduced into Portsmouth's community pharmacies, some HLP services had been de-commissioned, other initiatives had been introduced and later de-commissioned (such as the HLC meetings) and payment structures for the re-imburement of services had been altered on a frequent basis. It was perceived that this lack of funding stability has influenced the organisational support to the HLP project in terms of resources and staffing hours.

"I guess it's difficult for the owners because when you are running a business you need to forecast for these things (HLP project), you can't say that you will employ extra staff to do X, Y and Z if you don't know if X, Y and Z are going to continue... and there is that feeling with the services (HLP services)"
Pharmacist 2

The reduced revenue to community pharmacy through national funding and high number of new pharmacies opening which added extra competition for the NHS prescription aspect of the business, were also identified as contributors to a reduced emphasis on organisations investing resources into supporting HLP services and focussing efforts to securing prescription business.

"I know that the cuts (national cuts to the pharmacy contract) have hit hard and its worrying because there is a lot of competition around us... a lot more than before.... and I think we've taken the approach that we have to do our best to protect what we've got and what brings us the most money (referring to the NHS prescription revenue)" HLC 4

Partnerships (cross-site mean, 1.4, SD = 0.2)

Respondents reported that following the introduction of the HLP project, there was a sense that community pharmacy was becoming better integrated with local stakeholders and community organisations. This came about through shared training sessions, a HLP marketing strategy to increase awareness of community pharmacy services, and the community outreach events that were initiated by the local commissioners and facilitated by local community pharmacy staff. These opportunities provided the chance for community pharmacy staff to develop a greater understanding of the local health services structure and meet staff involved in delivering these services. Furthermore the community outreach activities provided staff the opportunity to work alongside their peers from other pharmacies in a context which improved their knowledge of health inequalities within their local community (e.g. providing health checks within commercial centres, organising health promotion stands at local events).

Despite this, respondents reported that very few similar opportunities had been arranged in recent times, and local restructuring of services, of which staff felt poorly informed, had created confusion

amongst community pharmacy staff regarding the continuing remit of local services. Consequently staff felt that they had returned to a situation in which they were professionally isolated.

“I feel that I had a good understanding of what services there are around us, and I was confident that if a customer came into the pharmacy and we didn’t have the help they needed, I could point them in the right direction and I knew what sort of service they’d receive.... I can’t say the same now.... So many changes have happened locally that we are not told about, we seem to have been forgotten..... and I’ve had customers that I’ve try to refer on to different services; they’ve come back and told me that they (the service) don’t take referrals or that it’s not available any more” HLC 1

Few respondents were able to identify other organisations or individuals who had invested in the success of the HLP project. Although it was perceived that the contribution of General Practitioners (GPs) may assist the sustainability efforts of the HLP project through appropriate patient referral and raising awareness of the project, respondents recognised that GPs are often too busy or lack interest and/or awareness.

“GPs can help but they don’t or they won’t.... I know they are so busy and there’s so much else for them but it’s the same old story, customers listen to their doctors and if we had them on our side (GPs) I think it would solve half the problem” Pharmacist 2

The HLCs involved in the interviews stated that the cessation of HLC networking meetings had also contributed to the perception of isolation and reduced interaction with community organisations as well as the collaborative work HLCs undertook in the community.

“They stopped the meetings (local commissioners decommissioned the HLC network meetings) and it felt like we were back to square one... we don’t get out of the pharmacy anymore (reference to lack of networking opportunities)” HLC 6

Organisation capacity (cross-site mean, 3.8, SD = 0.6)

Respondents described numerous organisational strengths promoting implementation and sustainability, including the free provision of material resources to deliver HLP services from commissioners (e.g. carbon monoxide meter for the smoking cessation service and various consumable items) and support from branch managers in attempts to integrate the provision of HLP services into workflow. HLCs also commented on the recognition of their role from branch pharmacists and managers, indicating that this was demonstrated through increased autonomy in managing and delivering HLP services and being included in branch strategic planning discussions.

“In terms of the owners and the manager and the pharmacist, they’ve always been supportive and encourage me and XXXX (a second HLC) to take the lead on HLP and even let us dictate how best to run the services and the promotions with things like training and staff meetings (to inform the pharmacy team of HLP implementation plans)” HLC 5

Respondents from all pharmacies spoke of the on-going challenge of organisations’ multiple competing priorities. Commonly cited challenges were a lack of staff coupled with on-going recruitment freezes, lack of internal funding for HLC training and a lack of support from an organisational level. Further, nearly half of the respondents reported a higher staff turnover, since the introduction of the HLP project, whereby long-serving staff had become unwilling or unable to extend their role from the traditional activities of providing advice and recommending OTC remedies.

“To be honest you’ve got your two types of staff, the ones who are motivated and get excited by talking to customers and learning new things, and I have to say that that is most of us here, and there’s the other ones who have sort of taken this job part-time to wind down their career but haven’t coped with all the change and new bits to the job that weren’t there when they started.... A lot of the time, they end up leaving” HLC 6

A strategy discussed to help in overcoming some of these challenges, was that HLCs proactively trained new members of staff within the pharmacy in customer recruitment and the process for delivering HLP services.

“It hasn’t been easy but we love what we do so we get on with it and when someone new joins the team, it doesn’t take them long to learn because we all pitch in (providing training).... nobody asks us to but that’s where the enjoyment is; watching people learn and then seeing them help the customers.... It’s very rewarding when you see that” HLC 2

Programme evaluation (cross-site mean, 3.6, SD = 0.5)

Programme evaluation was carried out in most of the pharmacies through collecting customer feedback and seeking regular input from staff; the results of which informed planning and implementation of services.

“We use the feedback slips to collect patient feedback after they’ve been through a service with us, and if there is anything we can use to improve the service and make it better for the patient, then we usually discuss it as a team and put things in place.... Although if I’m honest, it was XXX and XXX (the HLCs) who starting this idea and they get on and make the changes themselves” Pharmacist 1.

Commissioners, to streamline service claims, introduced PharmOutcomes, a web-based platform for pharmacies to record service data. The software facilitated access to data relating to historical and current levels of specific service provision for the local community pharmacies. Respondents indicated that they accessed these data to obtain service reports and compare their performance to other local pharmacies. HLCs mentioned that during the HLC network meetings they sought advice from HLCs employed at pharmacies where they had noticed strong service provision data, to inform their own service evaluation.

HLCs felt that the HLC network meetings provided a form of quality evaluation through the presentations from practitioners affiliated to specific HLP services (e.g. a member of the local Alcohol Awareness team delivered informal training and a presentation on the potential role of community pharmacy to recognise and signpost suitable customers to their service, and described the planning and implementation of the pharmacy Alcohol Awareness Service). However since the cessation of the HLC network meetings, these activities had not continued.

There was no evidence of a mechanism whereby evaluation results were shared with local stakeholders or the public; which was of concern to some respondents who commented that this could limit the effectiveness of evaluation on sustainability.

"I don't know if there is any sort of HLP monitoring still happening, if there is, it's not really shared with us.... I hope there is because we need that data as evidence to show what community pharmacy is capable of" HLC 6

Programme adaptation (cross-site mean, 3.4, SD = 0.4)

The adaptability of the HLP project was discussed both at the project design and service delivery level. At the project design level, respondents agreed that periodically, the project adapted to the health needs of the local population with the introduction of new services. However, it was suggested that commissioners could provide further support to pharmacies struggling with the delivery of specific services, to identify strategies and propose specific adaptations that may enhance customer recruitment and service delivery.

"I think they (commissioners) could do more to help us with patient recruitment.... Whether its training or suggesting way that we can offer the services in a more flexible way... like maybe helping us to go out to a local community centre and setting up a stall once a week" HLC 3

Many respondents had taken it upon themselves to adapt services to boost customer engagement and accommodate workflow, thereby promoting sustainability of HLP services. Examples of this included introducing an appointment based system for customers to attend regular service appointments e.g. weight management, smoking cessation, and a text message reminder system to customers enrolled on specific HLP services to alert them of their next appointment.

Communications (cross-site mean, 2.2, SD = 0.6)

The communications domain recorded the lowest but one score of all the domains. Respondents expressed their frustration at the lack of a continued communication strategy to disseminate key information relating to developments of the HLP project to pharmacy teams and to raise awareness of the project to local stakeholders as well as the local community. Further, respondents were unaware of communications of the project's success to stakeholders at a regional or national level.

"Communications seem to have dried up (relating to HLP updates), the marketing of HLP was short-lived anyway, but recently I don't feel that we have been kept updated with what's happening in Portsmouth and I can't say that I've noticed anything happening at a national level" Pharmacist 4

Communication was seen as having the potential to enhance sustainability, primarily by enhancing political and financial support for the project. Although, it was reported, that over the past 18 months, the level of communication from the commissioners regarding the project had reduced; before this, it was felt that greater efforts were made by the commissioners to raise local awareness of the project. One respondent described how specific communications describing the success of the project had garnered national recognition, which had increased the internal political support to continue efforts with the project.

"I think going forward if we want to make this work, which I think we can (HLP project), because we are starting to realise that community pharmacy has so much to offer, I think we need to get everyone on board, GPs, community groups, and other local services and have a strong marketing campaign to make a lot of noise to the local community..... and then I think success will bring more success, we will (community pharmacy) be noticed again locally and nationally and it will get them (policy makers) thinking about community pharmacy again" Pharmacist 3

Strategic planning (cross-site mean, 3.0, SD = 0.1)

Two pharmacies claimed that considerable resources had been invested into the strategic planning for the sustainability of the HLP project. A second private consultation room was installed in one pharmacy to accommodate the delivery of HLP services; various equipment was bought to support HLP services e.g. a networked laptop to access pharmacy Patient Medication Records; and multiple staff were sent to undertake the HLC training course. However, the overriding impression of respondents was that sustainability was not considered from the outset of the project and although attempts were made by the commissioners to implement strategies to promote sustainability earlier in the implementation process, their effectiveness was short-lived and poorly disseminated.

“The HLP is a great idea, and I don’t think the planners thought it would be the success it has been because there doesn’t seem to be a continuation plan.... OK so we get everybody accredited as a Healthy Living Pharmacy, but then what? Where are the public awareness campaigns? Don’t get me wrong, they (local commissioners) have tried to keep it going, first with the champions meetings, which were good but you only found out they were happening at the last minute, and then there is still talk of using the HLPs in Portsmouth in some way but nobody quite know how” Pharmacist 2

Two of the respondents discussed the potential for periodic self-reaccreditation against the HLP project criteria. They said that any such effort would need to be integrated into a holistic sustainability strategy since they perceived that many of the local pharmacies, due to a lack of local attention given to the project, had recently lost focus or interest in the project. Consequently other activities had taken priority within pharmacies and public awareness of the project was lacking, therefore it would be unlikely that the HLP branding would play a significant role in differentiating one pharmacy from the next.

“I know there’s been talk of self-accreditation, which I think is still in the pipeline... but I think there is more to it than that because it doesn’t mean much if you’ve got the sticker (HLP branding) on your window but nobody knows what it means.... And I think as well there’ll probably be a bit of scepticism because a lot of the pharmacies put the work in to be recognised as an HLP and it seems they have been forgotten about..... I think some of them would have lost interest” HLC 2

6.4 Discussion

The PSAT was used to evaluate the sustainability capacity in eight domains of the HLP project in Portsmouth's accredited HLPs with added open-ended questions for further investigation.

The analysis revealed that many of the pharmacies involved in this study had undertaken activities associated with the sustainability stage of the implementation process; these included activities relating to monitoring, adaptation, and training and supervision. However, it became evident through further discussion that these activities in most cases, were no longer part of routine practice and consequently the supportive conditions to promote consistent service outcomes had deteriorated.

The relative strengths of each domain were similar. All eight domains across the pharmacies scored less than 4, indicating a perceived deficiency in all the domains and suggesting that the HLP project demonstrated poor sustainability capacity.

The partnerships domain was rated with the lowest score in this study. This finding indicates a lack of established links between the HLP project and the local community and stakeholders. This finding is consistent with findings of a recent (April 2016) NHS England commissioned review of community pharmacy services¹⁵⁰. The report discusses the identified barriers to providing clinical services in community pharmacy and cites poor integration with other parts of the NHS and weak relationships between GPs and pharmacy, as two of the three most important barriers.

The third barrier identified in the report related to specific issues around commissioning and regulation; a finding, which resonates strongly with the data obtained in this study, particularly relating to political support and funding stability domains. However, it could be argued from the qualitative analysis of the open-ended questions that the issue of commissioning influenced all of the domains. This observation that multiple domains seem to be connected is consistent with the empirical literature on sustainability²³² and supports conceptual models of interactive relationships among influences on sustainability⁴⁹². Gruen *et al.*⁴⁸² and Greenhalgh *et al.*¹⁶⁹ report that the sustainability of an intervention is dependent on a complex set of inter-relationships between various organisational, social and political systems impacting broad scale change, which is evident in the findings of this study.

The domains which achieved a marginally higher score in this study were organisational capacity and programme evaluation. The analysis revealed that staff initiative and motivation was strongly linked to both of these domains. Staff proactively sought means of evaluating their performance through requesting customer feedback, viewing service provision data, and seeking advice from other staff. They also sought to enhance organisational capacity by undertaking staff training and adopting increased responsibility within the pharmacy. The motivation and commitment of pharmacy staff

towards the HLP project has been recognised elsewhere within the thesis (see Chapter 3), and is consistent with recent HLP evaluations elsewhere in the UK^{327, 331}; however also in line with the content of these reports is the recommendation that pharmacy staff need to be supported and given the tools and training to sustain their involvement in the project.

The analysis of the data revealed that pharmacies had at some point been involved in undertaking implementation activities (monitoring, adaptation, and training and supervision) and had employed strategies to promote the sustainability of the HLP project within the pharmacy. However it became clear through further discussion that these activities were no longer routine practice. It should be noted that this study took place five years after the introduction of the HLP project in Portsmouth and four years after the initial investigation of the implementation of the HLP project (Chapter 3). This is significant because, although it has been advocated that sustainability is the final phase in an intervention's implementation process^{480, 493}. Moulin *et al.*'s Generic Implementation Framework (GIF) proposes that the implementation process is non-linear and recursive in nature, (illustrated by the double arrows and overlapping circles in Figure 3.1). This would suggest that similar to other stages of the implementation process, should interventions reach the sustainability stage and then be subject to particular influencing factors, the intervention may begin to demonstrate characteristics consistent with the preparation or operation stages.

Strengths and limitations

The PSAT was designed to be used in a wide variety of public health programmes and robust studies have demonstrated its reliability in assessing a programme's capacity for sustainability^{489, 491}; however, the tool has been used only with the assessment of chronic disease programmes. This study is the first to employ the PSAT in a community pharmacy setting and to assess the sustainability capacity of a community pharmacy intervention.

Secondly, all data were self-reported by a small number of individuals employed at 12 of the 17 HLP-accredited community pharmacies in Portsmouth. Self-reported assessments can be inaccurate⁴⁹⁴, and these individuals did not represent all stakeholders. Inclusion of other stakeholders in this study, such as commissioners, organisational leaders, programme leaders and community representatives may have revealed additional strengths and weaknesses in each of the domains. The perspectives of such stakeholders may vary from those of individuals immersed in the work, and they may provide insight on other aspects of the project.

Thirdly, the data collected represents a period during which HLP services continued to be commissioned; however the funding to support the development of the project, e.g. the HLC meetings and local HLP marketing, had ended. Ideally, research on sustainability is conducted at multiple time points²³² both before and after the end of funding but due to time constraints of the researcher, this study could only be carried out at one point.

Finally, although the PSAT has been used in this study in primarily a descriptive manner, the findings indicate the potential for PSAT to be used prescriptively to determine weaker areas of sustainability capacity, which may inform targeted strategies to remedy them.

6.5 Conclusions

The findings of this study demonstrate the usefulness of the PSAT for guiding a mixed-methods evaluation of sustainability capacity. Although the authors used open-ended probes during the development of the PSAT, the published tool consists of only likert-scale style questions however the qualitative questions added to this study facilitated a more insightful investigation. Evaluators and researchers have used the PSAT in similar way to assess the design of an intervention and also the strategies employed to promote sustainability during the implementation process.

This study has shown that despite the attempts of commissioners and community pharmacy teams to maintain the HLP project as a successful programme to tackle local health inequalities through designated activities, the goal remains elusive.

This study provides further evidence of the poor integration of community pharmacy into the wider NHS as well as demonstrating the impact of contractual issues and commissioning constraints on community pharmacy.

Study findings may inform policy makers, commissioners, organisational leaders and practitioners that from the outset, interventions should consider sustainability in their design. Specifically, with community pharmacy interventions, which need to be designed and delivered in a way that is integrated both in terms of the NHS and public health systems and structures.

Chapter 7 : Overall discussion

7.1 Focus of the study

The work undertaken has successfully achieved the intended aims of this project in investigating and reporting on the implementation and sustainability of the HLP project in community pharmacies within Portsmouth.

7.2 Summary of results

- The use of implementation science in this study has demonstrated its potential use to guide formative evaluation and to enhance the implementation success of innovation within community pharmacy. Through the adoption of theoretical models, this study has described the various stages recognised in implementing innovation within UK community pharmacy, as well as facilitating the mapping of the various barriers and enablers to each of the stages.
- This study recognised the willingness of community pharmacy teams to adopt and implement innovation; and to develop and participate in various strategies in order to enhance the sustainability of an innovation.
- Through the investigations, community pharmacy support staff have demonstrated their potential to deliver an extended public health role and leadership activities to be considered as significant contributors to the implementation of innovation within community pharmacy.
- Through the desire of community pharmacy staff for a professional identity and their enthusiasm to undertake developmental activities and contribute to the learning of their peers, a HLC community of practice (CoP) developed. The CoP was supported through face-to-face meetings, which demonstrated to serve as opportunities for idea-sharing and seeking advice to advance with HLP activities.
- The introduction of a HLC FaceBook group to support the emerging CoP presented its use as a central information point and as a facility for HLCs to seek ideas and advice. However, following the decommissioning of regular meetings and departure of key individuals

supporting the local HLP agenda, the use of the FaceBook group lessened and consequently became of less value in supporting the HLC role.

- The sustainability of community pharmacy innovations should be considered within their development; contractual issues, commissioning constraints and the community pharmacy's lack of integration in the wider NHS are key factors that should be considered.

The study has shown that the HLP project was successfully adopted and implemented into the majority of community pharmacies within Portsmouth. Through employing the use of implementation science literature, the evaluation of the HLP implementation process was reported on. The Generic Implementation Framework facilitated the identification of the implementation concepts that were specific to the HLP project. The implementation stages were used as themes and thematic analysis was performed for the data under each stage, revealing that factors varied across the different stages of the implementation process. The major influences associated with the implementation process included those of *direction and impetus, internal communication, community fit, staffing and support*, all of which were linked to the HLC role.

The HLC role was subsequently investigated and revealed the emergence of a community of practice developing, which motivated a continued involvement in the HLP project and contributed to their professional development. However, further investigation identified that resource support and leadership were required for this community of practice to remain effective and this was demonstrated through a HLC Facebook group, set up to supplement the activities of the community of practice, which became redundant following withdrawal of commissioner support.

The HLP project's capacity for sustainability was measured five years after it was introduced. In that time various restructuring of the local commissioner, increased financial pressures of community pharmacy and the lack of integration of community pharmacy within the wider NHS appeared to be detrimental factors contributing to the project's lack of capacity for sustainability.

7.3 Existing research and importance of the findings

Appendix 7 summarises the current literature reporting on HLP. With the exception of one study conducted by the research team in Portsmouth, the published studies do not include service delivery data from community pharmacies but focus on the self-reported impact of introducing HLP. The

majority of the literature consists of snap shot studies involving small samples of community pharmacy staff conducted in specific geographical areas of England. Although, a minority of studies report on the barriers and facilitators of implementing HLP, there is no evidence of adopting implementation theory to further evaluate reported observations. Further to this, there are no reports attempting to analyse the potential of HLP to serve as a platform for sustained community pharmacy involvement in addressing local health inequalities.

The emergence of data indicating the significant contribution of the HLCs in the implementation of the HLP project and exploration of their specific role adds to the limited literature on this group of healthcare professionals. The few previous studies describing the role and attitudes of pharmacy support staff towards community pharmacy services are consistent with the findings of this work. Furthermore, recent evaluations of the HLP project elsewhere in the UK have reported similar observations^{129, 326, 330, 331}.

There is a dearth of literature reporting the implementation of innovation within community in the UK. At the time of commencing this study, the author identified two other studies^{495, 496} and since then, one further study has been published⁴⁹⁷. However in all of the studies, there was no evidence that implementation theory was employed to guide the evaluation which resulted in key implementation concepts not investigated or not reported on. Further to this, none of the three studies discussed the sustainability of the innovations being investigated but focussed on stakeholder's perceived barriers and facilitators of implementing the innovation, which were broadly consistent to those identified within this study. Therefore the results within this study describe for the first time the implementation process of innovation within community pharmacy in the UK, articulating the overarching influences associated with the process, the specific factors that may be encountered at each stage and strategies that may be employed to enhance the process.

Regarding the sustainability of innovations within community pharmacy, the findings confirm what has been reported in the recent NHS England Community Pharmacy Clinical Service Review document¹⁵⁰ and further emphasises the need for sustainability planning at the development stage of innovation design. The findings add to those of the report by providing the perspectives of community pharmacy staff on the sustainability of the HLP and detailing their perception of sustainability across eight domains of the Programme Sustainability Assessment Tool.

Specific to the HLP project, which has been rolled out in pharmacies across England, there is little in the published literature reporting on the sustainability of the project. The 2013 evaluation of the HLP pathfinder programme¹²⁹ included the views of various stakeholders involved in HLP projects across

England. Project management personnel were concerned about the sustainability of the project following the pathfinder programme since they had recognised that support for project management was an important aspect of the drive for further roll out, and this support could not be guaranteed to continue, as indicated by the following quote:

“Sustained managerial support for the project is essential to maintain regular contact with pharmacies” HLP project manager Buckinghamshire and Milton Keynes.

Further published reports have investigated the views of community pharmacy staff, including HLCs, on the barriers and facilitators of performing the HLC role³²⁵ and the views and attitudes of pharmacy support staff on the HLP³³¹ which have supported the findings of this work.

7.4 Application to current practice

In July 2016, Public Health England published new HLP Quality Criteria; available to community pharmacies to undertake self-assessment and linked to funding through the NHS national community pharmacy contract⁴⁹⁸. The criteria have been revised and include the following: HLPs must:

- show evidence of workforce development;
- operate in premises that are fit for purpose;
- and prove it has engagement with the local community, other health professionals, social care and public health professionals and local authorities.

The dissemination of these new criteria is a recent development and therefore has not been investigated within this work.

On initial assessment, it can be seen that the revised criteria attempts to overcome the challenge in commissioning the project, whereby the delivery of specific services is no longer a requirement; and funding is delivered through the NHS national community pharmacy contract, which may help to overcome some of the challenges pharmacies were facing with the previous criteria.

However, Roberts *et al.*¹⁷² identified that within the literature of implementing community pharmacy services, commissioners place significant focus on remuneration as the single most important factor to overcome implementation challenges but often this does not make implementation more successful. Change management research supports the notion that recognising and understanding social trends and forces affecting an organisation is essential in facilitating change management^{180, 181}.

This study identified and discussed important social trends and forces affecting community in relation to the eight domains of the Programme Sustainability Assessment Tool (Section 6.3.1) that this criteria does not address. An example of this is *communications*; the HLP sustainability study within Portsmouth, was conducted between November 2016 and January 2017, by which time the HLP Quality Criteria had been published; yet all participants were unaware of its existence, thereby demonstrating the need for a more effective communication strategy.

7.5 Implications and recommendations for further work

Implementation theory has proved insightful in understanding the challenges of community pharmacy service implementation. The theoretical models employed within this research have been developed from work undertaken in the fields of public health and general practice; it has not been reported that the area of pharmacy practice has been considered in their development. Future research evaluating innovation within community pharmacy may consider the application of implementation theory to build upon the dearth of pharmacy practice literature employing this approach.

In the area of developing services, the findings from this study emphasise the importance of considering sustainability at the design stage of service development. Further, this work identifies specific implementation factors and strategies that may influence the implementation process within community pharmacy; consideration of these in service design may enhance the implementation process.

Moreover, this study has identified the potential of community pharmacy support staff to significantly contribute to the implementation of community pharmacy services; often overlooked, this group of healthcare professionals should be considered and included within plans for future innovation within community pharmacy.

In regards to the HLP project, further research is needed to establish the benefits of HLP accreditation to customers, the local health care services and the community pharmacy itself. This may include economic analysis of pharmaceutical care since the literature review revealed that such economically led data to support the development of community pharmacy services is lacking. The creation of a credible economic basis would help decision makers to settle on future courses of action and will provide a counterfactual that can be used for the evaluation of any future interventions into primary care.

Finally, the recent release of the HLP self-accreditation criteria provides an opportunity to evaluate the potential impact this will have on the long-term sustainability of the project.

7.6 Limitations of the study

This study has a number of possible limitations. The evaluation of the implementation and sustainability of the HLP project relied on self-reported evidence through collecting qualitative data from community pharmacy staff; however self-reports may be subject to bias and may not represent the extent of views and experiences of all community pharmacy staff and the various stakeholders involved in the project. The inclusion of stakeholders, such as other local healthcare providers or customers of the pharmacies, may have provided a different perspective. However, the focus of this work was to conduct investigations based on the views and experiences of those directly involved in implementing the project. Informal meetings were held with members of the HLP project team to obtain a greater understanding of the local political situation regarding the commissioning of the project. This information was used for the purpose of planning the studies included in this thesis and have been reported on briefly in the introduction of each of the chapters.

The research undertaken sought to investigate the implementation of the HLP project, and therefore has not reported on the benefits of the HLP project to the public. Although, some of these data have been collated and published; early on in the research, it was identified that obtaining service provision data from pharmacies was challenging due to its commercial sensitivity. Furthermore, previous research has focussed on reporting patient outcomes and cost-effectiveness of community pharmacy services and the associated barriers and facilitators, yet the implementation and sustainability of innovation within community had not been investigated.

Finally, with the recent development to the HLP project criteria, evaluation of its implementation and the subsequent impact on the sustainability using the methods employed by the author will add to the knowledge in this area.

7.7 Overall conclusions

This research has revealed in detail the complexity of implementing and sustaining innovation within community pharmacies. The qualitative data has reported the willingness of community pharmacy teams to adopt and to adapt in order to provide further opportunities for their customers to access health and well-being activities; this was particularly evident of community pharmacy support staff who flourished in a champion role.

However, a series of external factors (contractual constraints, commissioning arrangements and lack of integration within the NHS) have demonstrated their potential to pose significant challenges to the sustainability of such innovations. The consideration of these three factors, in the design stage of the implementation process is essential in the development of sustainable innovations. Further, this study has successfully demonstrated the potential use of implementation theory to address existing sustainability plans for the HLP project.

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Annex 1 Letter for Ethics Committee confirming favourable opinion

DC/mk/hph/sta

04 February 2010

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University of Portsmouth
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ISLE OF WIGHT, PORTSMOUTH & SOUTH EAST HAMPSHIRE RESEARCH ETHICS COMMITTEE

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Dear Dr Portlock

Study Title: Healthy Living Pharmacies: An Evaluation of Their Feasibility
REC reference number: 10/H0501/6
Protocol number: 1

The Research Ethics Committee reviewed the above application at the meeting held on 22 January 2010.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>. Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is responsibility of the sponsor to ensure that all the conditions are complied with before the

Annex 2 UPR16 Form


FORM UPR16

Research Ethics Review Checklist



Please include this completed form as an appendix to your thesis (see the Postgraduate Research Student Handbook for more information)

Postgraduate Research Student (PGRS) Information		Student ID:	268021
PGRS Name:	Zachariah Nazar		
Department:	Pharmacy & BMS	First Supervisor:	Professor David Brown
Start Date: (or progression date for Prof Doc students)	October 2012		
Study Mode and Route:	Part-time <input checked="" type="checkbox"/>	MPhil <input type="checkbox"/>	MD <input type="checkbox"/>
	Full-time <input type="checkbox"/>	PhD <input checked="" type="checkbox"/>	Professional Doctorate <input type="checkbox"/>
Title of Thesis:	Investigating the implementation and sustainability of the Healthy Living Pharmacy project.		
Thesis Word Count: (excluding ancillary data)	59,782		
<p>If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study</p> <p>Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).</p>			
UKRIO Finished Research Checklist:			
(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: http://www.ukrio.org/what-we-do/code-of-practice-for-research/)			
a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES	<input checked="" type="checkbox"/>	
	NO	<input type="checkbox"/>	
b) Have all contributions to knowledge been acknowledged?	YES	<input checked="" type="checkbox"/>	
	NO	<input type="checkbox"/>	
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES	<input checked="" type="checkbox"/>	
	NO	<input type="checkbox"/>	
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES	<input checked="" type="checkbox"/>	
	NO	<input type="checkbox"/>	
e) Does your research comply with all legal, ethical, and contractual requirements?	YES	<input checked="" type="checkbox"/>	
	NO	<input type="checkbox"/>	
Candidate Statement:			
I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)			
Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):	10/H05012/6		
If you have <i>not</i> submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:			
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>			

Signed (PGRS):		Date: 23/05/2017
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Appendices

Appendix 2.1 The factors affecting service delivery in community pharmacy

Appendix 2.1 The factors affecting service delivery in community pharmacy

Authors	Study objectives	Method	Facilitators	Barriers	Conclusions	Limitations
Bell, H.M. McElnay, J.C. Hughes, C.M. Woods, A. (1998) ³	To ascertain attitudes and opinions towards the concepts of pharmacy services and their implementation	In-depth interviews with 20 community pharmacists	Improving public perception of pharmacy, professional training, remuneration, good working relationship with other healthcare professionals, access to patient medication records, private counselling area, collegial interaction, extra staffing resource	Lack of time, little financial incentive, lack of private counselling area, low public expectation of pharmacy profession, poor relationship with GPs, lack of access to patient medication records, lack of competency	Suggested support required to overcome barriers: improving public relations, professional training, support from Government and professional bodies, remuneration, money to employ additional staff, utilisation of continuing education courses, working with other healthcare professionals	Self-reported data, small sample size
Bell, H.M. McElnay, J.C. Hughes, C.M. Woods, A. (1999) ⁴	To investigate how community pharmacists currently use their time, to see if lack of time to implement pharmacy services really is a barrier to provision of extended patient care services	Self-reported work sampling study with 30 pharmacists	Improved time management, use of trained dispensary staff	Amount of pharmacist time devoted to non-professional activities	Study found that 22% of pharmacists' time was devoted to non-professional activities which could have been performed by non-professional members of the team. Authors recommended time management and use of staff would increase scope for pharmacists to integrate pharmacy services into routine practice	Small sample size

Appendix 2.1 The factors affecting service delivery in community pharmacy

Authors	Study objectives	Method	Facilitators	Barriers	Conclusions	Limitations
Tully, M.P. Seston, E.M. Cantrill, J.A. (2000) ⁵	To assess the strong motivators and barriers to the implementation of prescription monitoring and review services by community pharmacists either in pharmacies or in GP practices	Two part Delphi survey to a purposive sample of 120 community pharmacists	<p>**Improving the public and GPs' perception of pharmacists, experiencing professional fulfilment and personal challenges</p> <p>**Motivators rather than facilitators</p>	Time consuming nature of services, locum difficulties, the prohibitive cost and unwillingness of pharmacy owners or GPs to fund services	Overcoming the logistical and financial barriers to services may not be sufficient. Also need to address internal rivalries, and the structure and culture of the profession	Self-reported data, pre formed questionnaire, study based on single service (medication review), purposive sample, results not generalisable
Rutter, P.R. Hunt, A.J. Jones, I.F. (2000) ⁶	To investigate community pharmacy managers perceptions of their role in providing healthcare to patients and to compare these with their aspirations for future	Two focus groups with 14 pharmacy managers from one area of UK national pharmacy chain	Delegation of services from prescribers to pharmacists, more formalised and open channels of communication with prescribers, moving away from performing technical duties, better qualified and trained staff, provision of additional pharmacy support, enhanced working environment	Time, inappropriate levels of staff, lack of patient time, perceptions of others (healthcare professionals and general public), poor communication with head office, legal restrictions, current remuneration structure	Empowering staff (through skill mix) would allow the pharmacist more opportunity to interact with patients and at the same time free them from routine dispensing	Self-reported data, small sample size, group polarisation effect of focus groups (enhanced as participants worked in same area so likely to know each other), main researcher was company employee

Appendix 2.1 The factors affecting service delivery in community pharmacy

Authors	Study objectives	Method	Facilitators	Barriers	Conclusions	Limitations
Ruston, A. (2001) ⁷	To identify the characteristics of community pharmacists that influence adoption of an extended role in order to inform ways in which they could organise their businesses to achieve successful re professionalisation	Postal questionnaire to 731 community pharmacists	Fostering levels of autonomy, promoting uptake of post registration education to provide the knowledge, skills and confidence required, establishing ways for pharmacists to leave premises and work with other professionals outside the pharmacy, having regular contact with health authority pharmaceutical advisor	Shortage of time, insufficient remuneration, shortage of staff, no locum cover, lack of contact with other healthcare professionals, lack of confidence, shortage of skills	Involvement in extended role activities more to do with pharmacist professional orientation than the setting in which they work. Data suggest that may be quite some time before extended role becomes a true reality for community pharmacists	Self-reported data, no clear explanation of how correlations between reports of activities and business / pharmacist characteristics of the respondent were made
Krska, J. Veitch, G.B.A. (2001) ⁸	To obtain the views of key pharmacists in Scotland on a systematic approach to pharmacy services and on the factors important in its development	Interviews with 11 policymakers and five leading edge pharmacists	Remuneration, time, support staff, consultation space, improvement to computer systems to support documentation, access to appropriate literature to support decision making, training on application of practice, good relationships with GPs to facilitate access to medical information, perception of patients and healthcare professionals, structured research on benefits of pharmacy services, implementation of repeat dispensing, patient registration at pharmacy	Not measured	Authors recommend that planning of future services needs to involve community pharmacists. Also suggest that views obtained on repeat dispensing, patient registration, access to patient data and remuneration could be of importance to Scottish legislators, and may require legislative changes. Time management, pharmacy layout, access to literature and training may be issues for individual contractors to address	Small sample size, many of those interviewed were known personally to interviewer, and all were aware of funding source – which may have led to bias

Appendix 2.1 The factors affecting service delivery in community pharmacy

Authors	Study objectives	Method	Facilitators	Barriers	Conclusions	Limitations
Blenkinsopp,A Celino, G. (2003) ⁹	To establish current and planned local community pharmacy services, to identify drivers and barriers to local community pharmacy development, to determine the extent to which community pharmacy development was planned.	Postal questionnaire completed by 203 PCT pharmacy advisors / chief pharmacists	Relationship with PCT and local pharmaceutical committee, new pharmacy contract, support of GPs, profile of community pharmacy in PCT, attitude of community pharmacists	Access to funding, pharmacy resource at PCT, confidence in community pharmacists to deliver, attitude of community pharmacists, outcome of Office of Fair Trading report	Authors concluded that local relationship / leadership issues appear to be driver and barrier to service development	Viewpoint of PCT commissioners of services only
Bradley, F. Elvey, R. Ashcroft, D. Noyce, P. (2006) ¹⁰	To identify factors which PCTs consider to be barriers and drivers to the commissioning of services from community pharmacies	Questionnaire completed by 216 PCTs	Pharmacy contract, relationship with PCT, awareness of community pharmacists within PCT, PCT capacity, attitude of pharmacists, PCT capability, experience of commissioning pharmacy services, confidence in pharmacists to deliver, other contractual options, evidence of the effectiveness of the service, support of GPs, access to funding	Access to funding, PCT capacity, PCT reconfiguration, support of GPs, availability of training, evidence of effectiveness of service, other contractual options, confidence in pharmacists to deliver, experience of commissioning services, PCT capability, attitude of pharmacists, relationship with PCT	Collaboration across PCTs was found to be widespread. Whilst PCT reconfiguration should address capacity issues, was also viewed as a large barrier to commissioning services.	Self-reported data, views of commissioners from the PCT perspective only

Appendix 2.1 The factors affecting service delivery in community pharmacy

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10. Bradley F, Elvey R, Ashcroft D, Noyce P. Commissioning services and the new community pharmacy contract:(3) Uptake of enhanced services. *Pharmaceutical Journal.* 2006;277.

Appendix 3.1 Databases searched and key terms used

Search terms used for Online University of Portsmouth Library database

Literature review				
Search term	AND function	Scope	Databases	Limitations
Community pharmacy	implement* adopt* introduc* innovat* managing change* healthy living HLP deliver*	Studies from 1996 to current	University of Portsmouth library hosted by EBSCO, includes PubMed, Medline, Embase, ResearchGate, Scopus, Cinahl, International Pharmaceutical Abstracts.	Studies in English
Exclusions				
Studies published before 1996; studies not in English				

Appendix 3.2 Study information sheet and consent form



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St Michael's Building, White Swan Road, Portsmouth.
Zachariah.nazar@myport.ac.uk

Supervisor: Professor David Brown.
david.brown@port.ac.uk

11th November 2011

Dear Sir/Madame

The University of Portsmouth would like to invite you to take part in a research project investigating the introduction of the Health Living Pharmacy project into Portsmouth's community pharmacies. The following information sheet explains why this research is being carried out and what it involves.

What is the purpose of this study?

The study aims to explore different stakeholders' experiences and views on introducing the Health Living Pharmacy Project (HLP) into Portsmouth's community pharmacies, focusing on the challenges faced and the strategies that have been employed in order to progress with accreditation. Its findings will inform current and future support for the HLP project.

Who is carrying out this study?

The research is being undertaken by Zachariah Nazar, Research Associate within the Pharmacy Practice department at the University of Portsmouth.

What does it involve?

One-to-one interviews (face-to-face) will be carried out with pharmacy staff; (all member of staff employed in the pharmacy are invited to participate). The interviews take approximately one hour and will be audio-recorded, transcribed verbatim and analysed to ascertain people's views. All data collected will be anonymised and remain confidential at all times. A final report, containing only anonymised data, will be disseminated at conferences and by publication.

Can I change my mind?

You are free to withdraw from this project at any time without having to supply reasons. If you decide to do so, the data collect prior to withdrawal can be removed from the study.

What are the benefits of taking part?

You will be actively contributing towards the limited research available in this area.

Please contact Zachariah Nazar (Zachariah.nazar@myport.ac.uk)
to ask any questions and discuss your participation in this project



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11th November 2011

Stakeholders' experiences and views on introducing the Healthy Living Pharmacy project into Portsmouth's community pharmacies

Thank you for your co-operation in this project that aims to elicit the experiences and views of different stakeholders on introducing the Healthy Living Pharmacy project into Portsmouth's community pharmacies.

With this form you give consent to participate in this study by being interviewed. It also assures you of confidentiality, meaning that nothing said by you will be repeated to other individual(s) and all information gathered will be kept anonymous and confidential. People's names and sensitive information will be removed from any data collected so as it will not be possible to identify you in any reports or outputs.

Please read the statements below carefully:

1. I confirm that I have read and understood the project information sheet and have had the opportunity to ask questions.
2. I understand that I can choose not to take part in this study or withdraw from it if I wish, without giving any reason.
3. I understand that the researcher will treat all of my comments in confidence.
4. I agree for the interviews in which I participate to be audio-recorded.

Please sign below if you are happy with the way it has been explained to you and agree to participate in this project. Thank you for participating in this project.

Name of participant:

Signature: Date:

Appendix 3.3 Final interview schedule

Interview schedule:

Is this pharmacy involved in the HLP project?

Section 1: Addresses the *exploration* stage of the implementation process

1. Can you tell me how and why you decided to engage/not engage in the HLP project.
 - When considering involvement in the HLP project, what were you looking for?
 - How did you decide if it is a good idea?
 - Did you feel any pressure to get involved in the project? And if so, from whom?
 - Who made the decision to get involved?

Section 2: Addresses the *preparation* stage of the implementation process

2. After deciding, what were your next steps?
 - Did you start working towards the accreditation criteria immediately after making the decision?
 - Is someone leading the implementation process? Are all staff involved or particular staff?
 - Do you have any specific support for HLP services?
 - How were you able to accommodate services in the pharmacy?
 - Did you hit any barriers? And how did you overcome them?

Section 3: Addresses the *operation* stage of the implementation process

3. What challenges have you faced to get to where you are with HLP and how have you overcome these challenges?
4. What qualities or attributes do you think are present in this pharmacy that have enabled it to progress with HLP and how have these been supported?
5. What does it feel like to work here? What has changed to accommodate the HLP project?
6. What skills have you developed in order to be able to successfully deliver the HLP role?
7. What sort of benefits do you get from being an HLP and how have you recognised this?

Section 4: Address the *sustainability* stage of the implementation process

8. Would you describe HLP as routine day-to-day practice in your pharmacy? What barriers do you face to sustain HLP activities or increase the range of services you offer here?
 - What would make it routine?
9. Any other comments.

Appendix 3.4 Interview check list

Interview check list

Date:	Time:	Venue:
Participant name(s):		

Pre-interview:

- Check batteries and test equipment
- Check venue (table and chairs, suitable level of privacy, make other staff aware of interview)
- Set up equipment

Introductory phase:

- Welcome the interviewee: domestic arrangements if applicable (switch off mobile phones)
- Interviewee to introduce themselves and explain briefly their role.
- Explanation of the study (including purpose, anonymity, audio-recording, noises)
- Explanation of process of the interview (note taking, can give examples)
- Address any questions
- Completion of consent forms
- Check time available

Opening of the interview:

- Explaining the purpose of the interview and interviewer's roles.
- Explaining that they can use examples of own personal experience.
- Switch on the audio-recorder.

Appendix 3.5 Analysis of influencing factors according to the CFIR across the stages of implementing the HLP project

	Stages of implementation process			
	Exploration	Preparation	Operation	Sustainability
INNOVATION				
Intervention source				
Evidence strength & quality	X			
Relative advantage	X			
Adaptability	X	X	X	
Trialability				
Complexity	X			
Design quality & packaging				
Cost	X			
OUTER SETTING				
Patient needs & resources	X	X	X	
Cosmopolitanism				
Peer pressure				
External policy & incentives	X		X	X
INNER SETTING				
Structural characteristics	X	X	X	
Networks and communications		X	X	X
Culture	X	X	X	X
Implementation climate	X	X		X
Readiness for implementation	X	X		X
INDIVIDUALS				
Knowledge and beliefs about intervention	X	X	X	
Self-efficacy			X	X
Individual state of change	X	X	X	X
Individual identification within organisation				
Other personal attributes	X	X	X	X
PROCESS				
Planning	X	X	X	
Engaging	X	X	X	
Executing		X	X	
Reflecting & evaluating			X	

Appendix 3.6 Implementation strategies

Analysis of implementation strategies:

	Strategy	Utilised	Not-utilised
1	Access new funding	X	
2	Alter incentive/allowance structures	X	
3	Alter patient/consumer fees		X
4	Assess for readiness and identify barriers and facilitators	X	
5	Audit and provide feedback	X	
6	Build a coalition	X	
7	Capture and share local knowledge	X	
8	Centralise technical assistance	X	
9	Change accreditation or membership requirements		X
10	Change liability laws		X
11	Change physical structure and equipment	X	
12	Change record systems	X	
13	Change service sites		X
14	Conduct cyclical small tests of change	X	
15	Conduct educational meetings	X	
16	Conduct educational outreach visits	X	
17	Conduct local consensus discussions		X
18	Conduct local needs assessment	X	
19	Conduct ongoing training	X	
20	Create a learning collaborative	X	
21	Create new clinical teams		X
22	Create or change credentialing and/or licensure standards		X
23	Develop a formal implementation blueprint	X	
24	Develop academic partnerships		X
25	Develop an implementation glossary		X
26	Develop and implement tools for quality monitoring	X	
27	Develop and organise quality monitoring systems	X	
28	Develop disincentives		X
29	Develop educational materials	X	
30	Develop resource sharing agreements	X	
31	Distribute educational materials	X	
32	Facilitate relay of clinical data to providers	X	
33	Facilitation	X	
34	Fund and contract for the clinical innovation	X	
35	Identify and prepare champions	X	
36	Identify early adopters		X
37	Increase demand	X	
38	Inform local opinion leaders	X	
39	Intervene with patients/consumers to enhance uptake and adherence	X	
40	Involve executive boards		X
41	Involve patients/consumers and family members		X
42	Make billing easier	X	
43	Make training dynamic	X	
44	Mandate change	X	
45	Model and simulate change	X	
46	Obtain and use patients/consumers and family feedback	X	
47	Obtain formal commitments	X	
48	Organise clinician implementation team meetings		X
49	Place innovation on fee for service lists/formularies		X
50	Prepare patients/consumers to be active participants		X
51	Promote adaptability	X	

52	Promote network weaving	X	
53	Provide clinical supervision		X
54	Provide local technical assistance	X	
55	Provide ongoing consultation	X	
56	Purposely re-examine the implementation		X
57	Recruit, designate, and train for leadership	X	
58	Remind clinicians		X
59	Revise professional roles	X	
60	Shadow other experts		X
61	Stage implementation scale up	X	
62	Start a dissemination organisation		X
63	Tailor strategies	X	
64	Use advisory boards and workgroups		X
65	Use an implementation advisor		X
66	Use capitated payments		X
67	Use data experts		X
68	Use data warehousing techniques		X
69	Use mass media		X
70	Use other payment schemes		X
71	Use train-the-trainer strategies	X	
72	Visit other sites	X	
73	Work with educational institutions		X

Appendix 4.1 Study information sheet and consent form



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13th November 2013

Dear Sir/Madame

The University of Portsmouth would like to invite you to take part in a research project investigating your involvement in the Health Living Pharmacy project. The following information sheet explains why this research is being carried out and what it involves.

What is the purpose of this study?

The study aims to explore the experiences and views of Healthy Living Champions (HLCs) on their involvement in the Health Living Pharmacy Project (HLP). The research will be focusing on your role as a HLC and you will explore your ideas for sustainability of the HLP project. Its findings will inform current and future support for the HLP project.

Who is carrying out this study?

The research is being undertaken by Zachariah Nazar, Research Associate within the Pharmacy Practice department at the University of Portsmouth.

What does it involve?

Focus groups (face-to-face) will be carried out with Healthy Living Champions. The focus group takes approximately one hour and will be audio-recorded, transcribed verbatim and analysed to ascertain people's views. All data collected will be anonymised and remain confidential at all times. A final report, containing only anonymised data, will be disseminated at conferences and by publication.

Can I change my mind?

You are free to withdraw from this project at any time without having to supply reasons. If you decide to do so, the data collected prior to withdrawal can be removed from the study.

What are the benefits of taking part?

You will be actively contributing towards the limited research available in this area.

Please contact Zachariah Nazar (Zachariah.nazar@myport.ac.uk)
to ask any questions and discuss your participation in this project



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With this form you give consent to participate in this study by being interviewed. It also assures you of confidentiality, meaning that nothing said by you will be repeated to other individual(s) and all information gathered will be kept anonymous and confidential. People's names and sensitive information will be removed from any data collected so as it will not be possible to identify you in any reports or outputs.

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3. I understand that the researcher will treat all of my comments in confidence.
4. I agree for the interviews in which I participate to be audio-recorded.

Please sign below if you are happy with the way it has been explained to you and agree to participate in this project. Thank you for participating in this project.

Name of participant:

Signature: Date:

Appendix 4.2 Interview schedule and topic guide

Interview schedule & topic guide:

Topic 1: Identifying the self-reported roles and activities undertaken by the HLCs

1. Can you describe your role as a HLC
 - What activities do you undertake in the capacity of a HLC?
 - What are your responsibilities as a HLC?
 - Is your role different now that you are a HLC? If so how is it different?

Topic 2: The HLCs' motivations and experiences in attending the HLC meetings

2. Do you attend the HLC networking meetings?
 - Why do you chose to attend these meetings?
 - Can you describe what you take away from these meetings, if anything?
 - What do you do at these meetings?
 - Can you describe any positive aspects of these meetings?
 - Can you describe any negative aspects of these meetings?
 - Do you learn anything in attending these meetings? If yes, what have you learnt?
 - How would you describe the environment at these meetings?
 - Do you speak with other persons present at these meetings? What do you tend to speak about?
 - Can you describe the relationship you have with other HLCs attending these meetings?

Topic 3: Sustainability of the HLP project

3. Does attending these meetings affect HLP activity in the pharmacy? If so, how?
 - Does attending these meetings affect your HLC role? If yes, how?
 - How do you feel community pharmacy activity in the HLP project can be sustained?
 - Do you feel that these meetings can contribute to sustained activity in the HLP project?
How can this be achieved?

Facebook Tutorial

An Introduction to Today's Most Popular Online Community

Introduction to Facebook



- Facebook is the most popular social network, in the U.S. and internationally.
- In October 2011, more than half of the world's Internet users (55 percent) engaged with Facebook.
- Around the world, approximately 3 in every 4 minutes spent on social networking sites were spent on Facebook and about 1 in every 7 minutes spent online took place on Facebook in 2011.

*Source: "It's a Social World: Top 10 Need-to-Knows About Social Networking and Where It's Headed," comScore

Facebook users can:

- Find and add friends.
- Find and follow companies, entertainers, politicians, and more.
- Create rich profiles with information about their interests, job history, education, religion, politics, relationship status, location (past and present), and favorite music, movies, and companies.
- Create and share photo albums, event invitations, and basic blog posts.
- Share videos, links to online articles, photos, and more.
- Send instant messages and private messages and post public messages or messages to friends only.
- Play online games and use other online applications or "apps" for short.
- Use privacy settings to control what information is shared with whom.
- "Check in" to physical places online by mapping their location in a tag in a status update.
- Donate to charity; sign online petitions.
- Create free pages for a company, business, or group.
- Find and join groups.

Step 1: Sign Up for Facebook

facebook

Email: Password: [Log In](#)

Keep me logged in [Forgot your password?](#)

Facebook helps you connect and share with the people in your life.

Sign Up
It's free and always will be.

First Name:

Last Name:

Your Email:

Remember Email:

New Password:

I am: Select Sex:

Birthday: Month: Day: Year:

why does need to provide my birthday?

By clicking Sign Up, you agree to our Terms and that you have read and understand our Data Use Policy.

[Sign Up](#)

Create a Page for a celebrity, band or business.

Note: You do not have to share your real name or real birthday, but you do have to use a valid email address!

Step 2: Find Friends from Your Email Contacts

facebook [Home](#) [Search](#) [Find Friends](#)

Step 1 Import your contacts **Step 2** Profile information **Step 3** Add pictures

Are your friends already on Facebook?
Many of your friends may already be here. Searching your email account is the fastest way to find your friends on Facebook.

Windows Live Hotmail
Your Email: [Find Friends](#)

Yahoo! [Find Friends](#)

AOL [Find Friends](#)

Other Email Service [Find Friends](#)

[Skip this step](#)

Note: You can skip this step.

Step 3: Fill Out Your Profile Information

The screenshot shows the Facebook profile setup interface. At the top, the Facebook logo is on the left, and navigation icons are on the right. Below the logo is a progress bar with three steps: Step 1 (Find your friends), Step 2 (Profile Information), and Step 3 (Profile Picture). Step 2 is currently active. The main content area is titled "Fill out your Profile info" and includes the text "This information will help you find your friends on Facebook." Below this are three input fields: "High School:", "College/University:", and "Employer:". At the bottom left is a "< Back" link, and at the bottom right is a "Skip" link followed by a "Save & Continue" button.

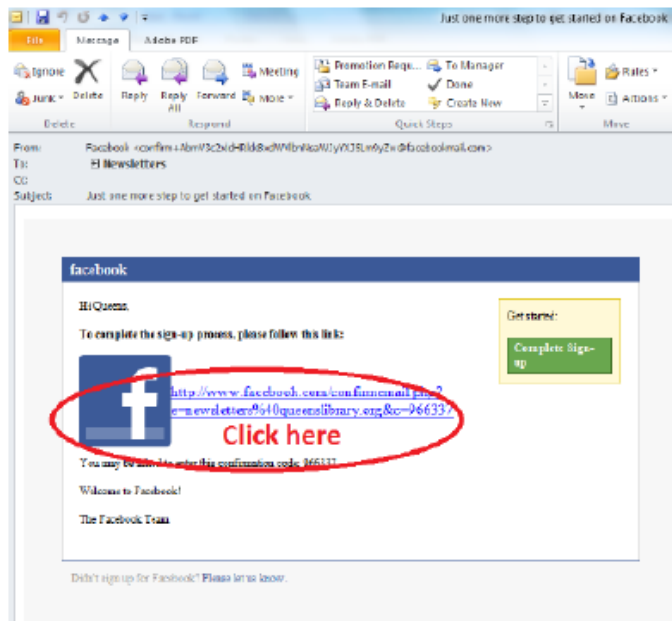
Note: You can skip this step.

Step 4: Upload Your Profile Picture

The screenshot shows the Facebook profile setup interface. At the top, the Facebook logo is on the left, and navigation icons are on the right. Below the logo is a search bar and a "Find Friends" link. Below the search bar is a progress bar with three steps: Step 1 (Insert your contacts), Step 2 (Profile Information), and Step 3 (Profile Picture). Step 3 is currently active. The main content area is titled "Set your profile picture" and features a placeholder image of a person's silhouette. To the right of the placeholder are two options: "Upload a Photo from your computer" and "Take a Photo with your webcam". At the bottom left is a "< Back" link, and at the bottom right is a "Skip" link followed by a "Save & Continue" button.

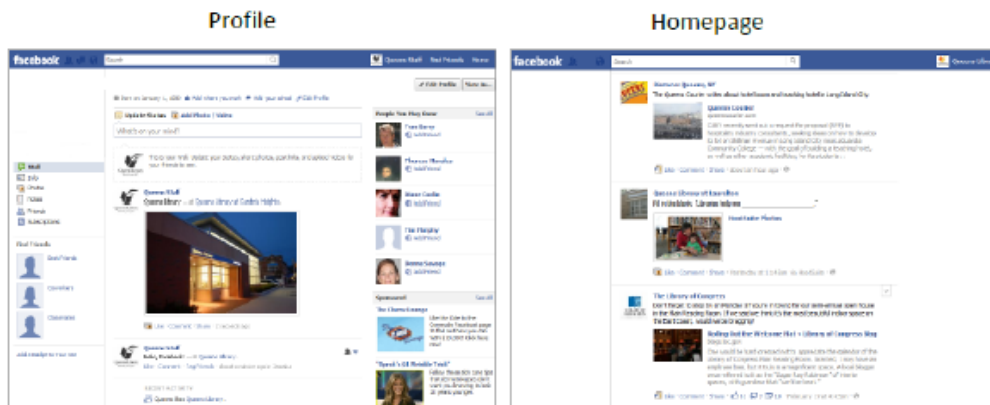
Note: You can skip this step.

Step 5: Confirm Your Email Address



Note: You will not be able to edit your account or use Facebook until you complete this step.

Facebook Profile vs. Facebook Homepage



This is where you can edit what information you share with your friends, including date of birth, work history, interests, and more. This is also where you can write updates to your friends and share photos, links, and videos.

This is a list of recent updates from the individuals and companies you have chosen to follow on Facebook. At the top of the page, below the search box, you can also write updates to your friends and share photos, links, and videos.

More Ways to Find Friends

There are many places to search for friends. As a new user, you'll be prompted to search for them in the sign-up process and as you first log in. As you browse Facebook, it will recommend friends for you to add in various places across the site. A quick shortcut for searching for finding friends can be found in the "Favorites" list on the left-hand side of your Facebook homepage.

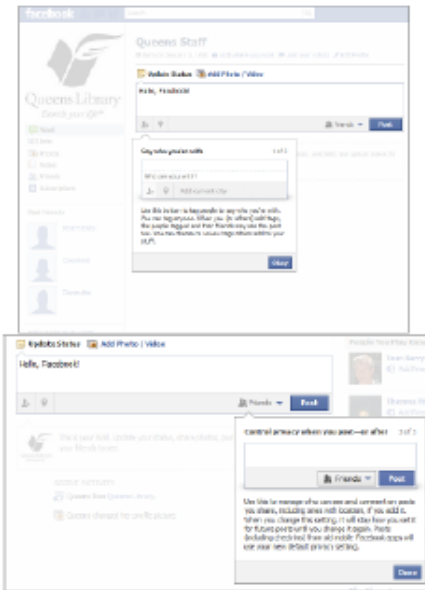
Editing Your Profile

Any place you see your name or your profile picture on Facebook is an opportunity to navigate to your Facebook profile page.

Once you're on your profile, you can edit it by clicking "Edit Profile," including your basic information, profile picture, education and work history, philosophy, activities and interests, contact information, and what arts, sports, and entertainment you like. You can also edit individual profile fields by clicking the "Edit" links directly on your profile.

Writing a Status Update

You can post a status update—a message that gets shared with all of your friends—on your Facebook homepage or profile by entering text under “Update Status,” in the box that asks the question “What’s on your mind?” Begin typing and “What’s on your mind?” will disappear.



The first time you post a message, you will be guided through the process. In addition to writing a message, you can:

- 1) **Tag a friend in your post:** If you tag a friend in your message, she will be notified that you mentioned her on Facebook, and anyone who sees the post will see you’ve tagged her. Tagging someone could indicate you’re together as you’re posting this update, but you can also tag someone to indicate you’re thinking of them or sharing information you think they’ll like to see.
- 2) **List where you are:** You can map your location by country, state, city, street address, or by landmark,
- 3) **Control the privacy of your post:** As you post an update, you can choose whether this message should be public (for anyone to see), for your friends, or for a specific group of friends.



An example of a completed status update.

Controlling Your Privacy

1. **As you post a status update:** Choose whether this message should be public (for anyone to see), for your friends, or for a specific group of friends.



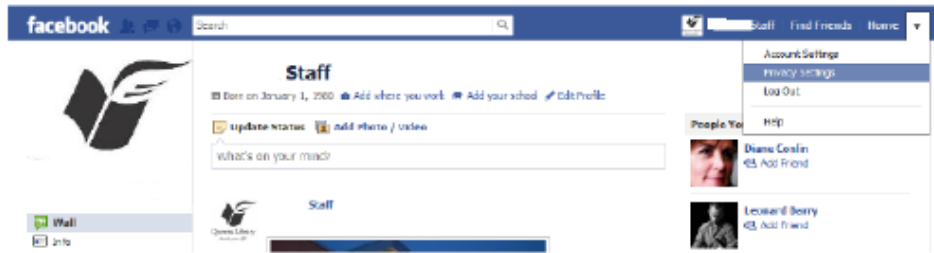
2. **After you’ve posted an update:** Hover your mouse to the far right of your update until an icon of two people with a drop-down arrow appears. Click on this icon, and you’ll have the option to make this update visible to the public (anyone on Facebook or anyone who finds your page), your friends, or a certain list of friends.



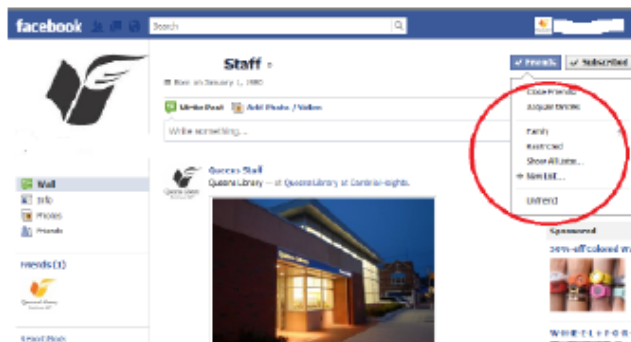
3. **Control how an individual sees your profile:** Click “View as...” on the upper right corner of your profile page.

Type in the name of a specific friend and control what they can and cannot see by removing specific updates from your profile.
Note: All other friends will still see these updates.

Updating Your Privacy Settings



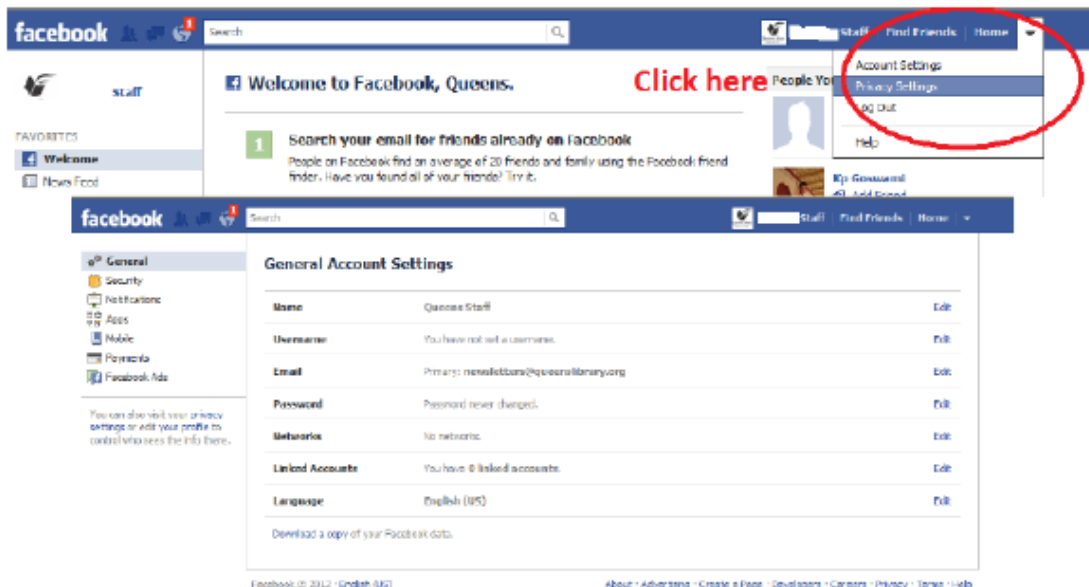
Select the drop-down arrow next to “Home” at the top of Facebook and click on “Privacy Settings.” The default is set so that any update will only be public to your Facebook friends. You can also customize this—by creating customized lists like “family,” “acquaintances,” “privacy,”—or set it so that all updates are public.



Facebook’s default lists are “Close Friends,” “Acquaintances,” “Family,” and “Restricted.” To add someone to one of these lists, click on their profile page, then click on “Friends,” and select the list to which you would like to add them. You can also create custom lists by clicking on a friend’s profile, clicking on “Friends,” and selecting “+ New List...” from the drop-down menu. Visit www.facebook.com/help/friends/lists for more information.

Editing Your Account Settings

You can change the password, display name, email address, password, language, and more settings associated with your account at any time by navigating to “Account Settings.” You can get here by clicking on the drop-down arrow located next to “Home” at the top of any Facebook page and selecting “Account Settings.”



Posting Photos and Videos

You can post photos, videos, and photo albums from your Facebook homepage or profile by clicking “Upload Photo / Video” (this will

prompt you to find photos or videos you have saved on your computer) “Use Webcam” (this will walk you through the process of taking a photo or video using your personal device’s webcam), or “Create Photo Album” (this allows you to upload multiple photos from your computer at a time).



Example of a photo update. This cannot be edited, but can be deleted.



Example of a photo album: You can tag individuals, write individual photo captions and give the album, a name and description and tag its location. This can be edited, added to, and deleted at any time.

Sending Messages



You can compose private, direct messages to Facebook friends as well as to individuals on Facebook who accept messages from people who are not their friends, by clicking “Messages,” an option under “Favorites” on the left-hand side of Facebook’s homepage. You can also message someone by clicking on their profile, and selecting “Message,” an option on the upper right-hand side of their profile. Messages can have multiple recipients and can include links.

On the “Messages” page you will also notice the option to use Facebook Chat to send instant messages to friends who are online at the same time as you are. This feature is also available in the lower right-hand corner of any Facebook page by clicking “Chat.”

You can also use Facebook to send and receive chats as text messages and to use video chatting.

Must-Know Facebook Vocabulary

Profile: This is where individual members share information about themselves, including their interests, job history, education, religion, politics, relationship status, location (past and present), and favorite music, movies, companies. This information can be updated at any time, but often does not change on a regular basis.

Wall/Timeline: This is where members' most recent updates are showcased: photos they've uploaded, events they've attended, friends they've added, and more. "Timeline" is a new Facebook feature and will most likely replace the "wall." To see older activity on the "wall," users had to scroll endlessly through recent posts. With "timeline," users can click to specific months and years to see Facebook activity from that time period.

Status: Most people use this space to update their friends on what is happening right now. They'll post photos, mention what they're doing, where they are, or who they're with; ask questions. For example, they'll post things like "Home sick," "Stuck in traffic," "At the park with my family," "I love this new Brad Pitt movie," and "Just voted!" These updates can be as short as one character and as lengthy as thousands of characters.

Page: This is how you refer to the accounts of brands and celebrities. Don't go referring to your personal profile as a "page" and you'd better not be caught calling a company's page a "profile"! People will know you're a Facebook newbie if you confuse these two terms.

Comment: A reply to a status update or a note on a photograph. For example, if your loved one shares a photo you enjoy, you can click "Comment" and write a message. Note: Depending on your privacy settings, this may be visible to more than just your loved one.

Like: To click the thumbs-up button below a recent update to indicate support or approval of the recent activity.

Share: If someone has posted a photo, website link, or status update that one of their friends likes, the friends can click "share" to then share it with their own Facebook friends.

Likes: This is a section of your profile that shows off what entertainers, politicians, brands, and companies you like or endorse. When you want to follow a brand or entertainer, you "like" their page.

Check In: Users can map their physical location at any given time by tagging their location in a status update.

Chat: Facebook has its own instant-messaging service. Anyone you have added as a friend will have the ability to IM you, unless you sign out of the chat.

Poke: This is a fun way to let someone know you're thinking about them without writing them a private message or commenting on their recent activity. The exact meaning of a "poke" is unknown, and there have been some speculations, but it's usually a light, harmless way to contact someone.

Notes: If you want to write a longer message for all your friends to see, the "Notes" application on Facebook will allow you to create and write basic blogs.

Events: Snail-mail invitations? Evites? No way. Facebook invitations are the way to go. Facebook invitations are an easy way to keep your Facebook friends informed up upcoming events. You can easily share information about the event—a description, directions, time and date, photos—and require invites to RSVP.

Unfriend/Defriend: This is when—either by your choice or the other party's choice—a Facebook friendship ends. This is the act of removing or blocking a one-time Facebook friend. Note: The former friend will not be notified that this has happened.

App: These are online tools and games available through Facebook, often built by people and companies who do not work for Facebook, called third-party apps. Most are free but some require giving the app permission to access your personal Facebook data.

Life event: A new feature of "Timeline," this is a way to let your friends know about important events that happened before you joined Facebook or events you had otherwise not noted on Facebook, including a marriage, graduation, promotion, etc.

Activity log: This is an index of every action you have ever made on Facebook that is visible to your friends. (I.e., it will show that you changed your Facebook photo, but not that you changed your Facebook password.)

"It's Complicated": This is a way to indicate an ambiguous relationship status made popular by Facebook.

Role of group facilitator

- Introduces the goals and agenda for meetings
- Work with other group members to plan meetings, events and collaborative work.
- Guide the group's discussion to allow all group members to benefit
- Ensure content is applicable and of high quality
- Manage the participation, energy and group dynamics in the group
- Encourages all group members to contribute to discussion and activity
- Set ground rules for online activity within the group
- Update links and resources within the group
- Add comments, "forum seeding", "back-channel engagement", rewards & incentives
- New member welcome & induction
- Introduce campaigns, newsletter, e-bullitins.

Appendix 6.1 The Programme Sustainability Assessment Tool administered to assess HLP sustainability capacity

Programme Sustainability Assessment Tool (PSAT)

Note: The Programme Sustainability Assessment Tool (PSAT), a set of 40 quantitative items, was developed by the Washington University, St Louis, Missouri. If you would like more information about the original framework or the PSAT, you can visit <https://sustaintool.org>.

This document contains the adapted PSAT items for the purpose of carrying out this study, plus open-ended probes that were developed by researchers at the University of Portsmouth.

What is the purpose of this tool?

This tool will help us better understand a range of specific factors that can affect the HLP's project current capacity for sustainability. Your responses will identify sustainability strengths and challenges.

The Process for Data Collection

Prior to your interview, please answer the five multiple-choice questions in each section and think about how you would answer the "probes" in each section. These probes, designed to enrich and expand upon your responses, will be asked during your interview. If your answers to the probes during the interview don't fully explain your multiple-choice answers, you will have the opportunity to describe why you chose certain numbers. Please keep in mind that there are no right or wrong answers; we want to understand the factors that, in your view, most affect the sustainability of the HLP project.

You are assessing the Healthy Living Pharmacy (HLP) project.

In the following questions, you will rate the HLP project across a range of specific factors that affect sustainability. Please respond to as many items as possible. If you truly feel you are not able to answer an item, you may select "NA."

For each statement, circle the number that best indicates the extent to which the HLP project has or does the following things.

Political Support: Internal and external political environments that support the HLP project	Response Categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer NA
1. Political advocates support the HLP project.	1	2	3	4	5	6	7	NA
2. The HLP project has strong champions with the ability to garner resources.	1	2	3	4	5	6	7	NA
3. The HLP project has political support within the larger organisation.	1	2	3	4	5	6	7	NA
4. The HLP project has political support from outside of the organisation.	1	2	3	4	5	6	7	NA
5. The HLP project has strong advocacy support.	1	2	3	4	5	6	7	NA

Probes:

- Who are your champions or advocates? In what ways do they advocate for the HLP project (or have they advocated, or you hope they will do)? Can you provide an example?
- Describe the political support—or lack thereof—that exists within the organisation. Include internal existing policies or recent or impending internal policy changes that support or impede the HLP project’s sustainability.
- Describe the political support—or lack thereof—that exists *beyond* the organisation. Include *external* existing policies or recent or impending external policy changes that support or impede the HLP project’s sustainability.

Funding Stability: Establishing a consistent financial base for the HLP project	Response Categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer
1. The HLP project exists in a supportive state economic climate.	1	2	3	4	5	6	7	NA
2. The HLP project implements policies to help ensure sustained funding.	1	2	3	4	5	6	7	NA
3. The HLP project is funded through a variety of sources.	1	2	3	4	5	6	7	NA
4. The HLP project has a combination of stable and flexible funding.	1	2	3	4	5	6	7	NA
5. The HLP project has sustained funding.	1	2	3	4	5	6	7	NA

Probes:

- Describe the current funding situation
- Describe your efforts to obtain funding, past and future.

Partnerships: Cultivating connections between the HLP project and its stakeholders	Response categories							Not able to answer
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	
1. Diverse community organisations are invested in the success of the HLP project.	1	2	3	4	5	6	7	NA
2. The HLP project team communicates with community leaders.	1	2	3	4	5	6	7	NA
3. Community leaders are involved with the HLP project.	1	2	3	4	5	6	7	NA
4. Community members are passionately committed to the HLP project.	1	2	3	4	5	6	7	NA
5. The community is engaged in the development of HLP project goals.	1	2	3	4	5	6	7	NA

Probes:

- What organisations or individuals are invested in the success of the HLP project? Why?
- How do you see partner organisations or community members contributing to the sustainability efforts?
- How important is it to have community leaders involved with or committed to the HLP project?
- Are there partnership structures such as coalitions or networks created by the project that may be sustained? If so, describe them.

Organisational Capacity: Having the internal support and resources needed to effectively manage HLP project and its activities	Response categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer
1. The HLP project is well integrated into the operations of the organisation.	1	2	3	4	5	6	7	NA
2. Organisational systems are in place to support the various HLP project needs.	1	2	3	4	5	6	7	NA
3. Leadership effectively articulates the vision of the HLP project to external partners.	1	2	3	4	5	6	7	NA
4. Leadership efficiently manages staff and other resources.	1	2	3	4	5	6	7	NA
5. The HLP project has adequate staff to complete the HLP project's goals.	1	2	3	4	5	6	7	NA

Probes:

- Describe the internal support and resources you currently have for this HLP project, and how has this changed?
- Describe the strengths and weaknesses you see in terms of the organisational capacity to maintain this HLP project

HLP project Evaluation: Assessing the HLP project to inform planning and document results	Response categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer
1. The HLP project has the capacity for quality programme evaluation.	1	2	3	4	5	6	7	NA
2. The HLP project team reports short term and intermediate outcomes.	1	2	3	4	5	6	7	NA
3. Evaluation results inform HLP project planning and implementation.	1	2	3	4	5	6	7	NA
4. HLP project evaluation results are used to demonstrate successes to funders and other key stakeholders.	1	2	3	4	5	6	7	NA
5. The HLP project team provides strong evidence to the public that the programme is effective.	1	2	3	4	5	6	7	NA

Probes:

- Describe how the HLP project has used evaluation findings to strengthen the project and its sustainability
- Describe how you foresee the role of evaluation going forward
- Who have you shared your evaluation results with?

HLP project Adaptation: Taking actions that adapt HLP project to ensure its ongoing effectiveness	Response categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer
1. The HLP project team periodically reviews the evidence base.	1	2	3	4	5	6	7	NA
2. The HLP project team adapts strategies as needed.	1	2	3	4	5	6	7	NA
3. The HLP project adapts to new evidence.	1	2	3	4	5	6	7	NA
4. The HLP project proactively adapts to changes in the environment.	1	2	3	4	5	6	7	NA
5. The HLP project team makes decisions about which components are ineffective and should not continue.	1	2	3	4	5	6	7	NA

Probes:

- The questions above refer to the HLP project as you have implemented it. Provide an example or two that demonstrates adaptability of the HLP project.

Communications: Strategic communication with stakeholders and the public about the HLP project	Response categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer
1. The HLP project team has communication strategies to secure and maintain public support.	1	2	3	4	5	6	7	NA
2. HLP project team communicate the need for the HLP project to the public.	1	2	3	4	5	6	7	NA
3. The HLP project is marketed in a way that generates interest.	1	2	3	4	5	6	7	NA
4. The HLP project team increases community awareness of the project.	1	2	3	4	5	6	7	NA
5. The HLP project team demonstrates its value to the public.	1	2	3	4	5	6	7	NA

Probes:

- Describe your communication tools and strategies
- How important is it that the HLP project demonstrates its value to the public?

Strategic Planning: Using processes that guide the HLP project's direction, goals, and strategies	Response categories							
	Not at all 1	To a very little extent 2	To a little extent 3	To a moderate extent 4	To a good extent 5	To a great extent 6	To a very great extent 7	Not able to answer
1. The HLP project plans for future resource needs.	1	2	3	4	5	6	7	NA
2. The HLP project has a long-term financial plan.	1	2	3	4	5	6	7	NA
3. The HLP project has a sustainability plan.	1	2	3	4	5	6	7	NA
4. The HLP project's goals are understood by all stakeholders.	1	2	3	4	5	6	7	NA
5. The HLP project clearly outlines roles and responsibilities for all stakeholders.	1	2	3	4	5	6	7	NA

Probes:

- Describe the HLP project's sustainability plan
 - How was it developed?
 - What does the plan entail?
 - Is the plan formalised in writing?
- Describe how you foresee the work of the HLP project in the future.

Appendix 6.2 Study information sheet and consent form



School of Pharmacy & Biomedical Science.
St Michael's Building, White Swan Road, Portsmouth.

Zachariah.nazar@myport.ac.uk

Supervisor: Professor David Brown.

david.brown@port.ac.uk

4th November 2016

Dear Sir/Madame

The University of Portsmouth would like to invite you to take part in a research project investigating the sustainability of the Health Living Pharmacy project in Portsmouth's community pharmacies. The following information sheet explains why this research is being carried out and what it involves.

What is the purpose of this study?

The study aims to explore different stakeholders' experiences and views on the sustainability of the Health Living Pharmacy Project (HLP) into Portsmouth's community pharmacies, focusing on the challenges faced and the strategies that have been employed in order to continue with involvement in the project. Its findings will inform current and future support for the HLP project.

Who is carrying out this study?

The research is being undertaken by Zachariah Nazar, Research Associate within the Pharmacy Practice department at the University of Portsmouth.

What does it involve?

A questionnaire assessing your perceptions of HLP sustainability will be sent to participants for completion. Following this, one-to-one interviews (face-to-face) will be carried out with pharmacy staff; (all members of staff employed in the pharmacy are invited to participate). The interviews take approximately one hour and will be audio-recorded, transcribed verbatim and analysed to ascertain people's views. All data collected will be anonymised and remain confidential at all times. A final report, containing only anonymised data, will be disseminated at conferences and by publication.

Can I change my mind?

You are free to withdraw from this project at any time without having to supply reasons. If you decide to do so, the data collected prior to withdrawal can be removed from the study.

What are the benefits of taking part?

You will be actively contributing towards the limited research available in this area.

Please contact Zachariah Nazar (Zachariah.nazar@myport.ac.uk)
to ask any questions and discuss your participation in this project



School of Pharmacy & Biomedical Science.
St Michael's Building, White Swan Road, Portsmouth.

Zachariah.nazar@myport.ac.uk

Supervisor: Professor David Brown.
david.brown@port.ac.uk

4th November 2016

**Stakeholders' experiences and views on the sustainability of the Healthy Living Pharmacy project
in Portsmouth's community pharmacies**

Thank you for your co-operation in this project that aims to elicit the experiences and views of different stakeholders on the sustainability of the Healthy Living Pharmacy project in Portsmouth's community pharmacies.

With this form you give consent to participate in this study by being interviewed. It also assures you of confidentiality, meaning that nothing said by you will be repeated to other individual(s) and all information gathered will be kept anonymous and confidential. People's names and sensitive information will be removed from any data collected so as it will not be possible to identify you in any reports or outputs.

Please read the statements below carefully:

1. I confirm that I have read and understood the project information sheet and have had the opportunity to ask questions.
2. I understand that I can choose not to take part in this study or withdraw from it if I wish, without giving any reason.
3. I understand that the researcher will treat all of my comments in confidence.
4. I agree for the interviews in which I participate to be audio-recorded.

Please sign below if you are happy with the way it has been explained to you and agree to participate in this project. Thank you for participating in this project.

Name of participant:

Signature:

Date:

Appendix 7: HLP literature review

Authors	Study objectives	Method	Conclusions	Limitations
Kennington. E, Shepherd. E, Evans. D, Duggan. C (2013)	Explore the benefits of Healthy Living Pharmacies for commissioner and contract/employer.	Content analysis of reported commissioner's comments from the 14 pathfinder reports. Quantitative survey delivered to contractors/employers to report HLP benefits.	Commissioners see value in the HLP project. Employers/ contractors perceive benefits to the business and staff productivity through HLP involvement.	Commissioner's data extracted from reports- no study design was implemented. Employers/contractors benefits were self-reported.
Kennington. E, Shepherd. E, Evans. D, Duggan. C (2013)	Explore the public experiences of Healthy Living Pharmacies across England	Survey delivered to customers of HLP-accredited pharmacies located in the 20 pathfinder sites.	HLP services are well received with endorsement and acceptability.	Half of the pathfinder sites did not contribute to the study. Survey did not address health outcomes.
Nazar. Z, Brown. D, Portlock. J (2013)	Qualitative analysis of stakeholders' perspectives on the impact of HLP involvement.	32 semi-structured face to face interviews with pharmacist and non-pharmacist staff in Portsmouth.	Successful implementation of HLP is dependent upon skill mix including introduction of the HLC role. HLP involvement contributed to enhanced motivation and improved job satisfaction.	Only pharmacy staff were included in the study in one geographic location.
Brown. D, Portlock. J, Rutter. P, Nazar. Z (2014)	Assess the early impact of HLP in Portsmouth on service provision and staff engagement.	Quantitative data, derived from pharmacy records, on service delivery by HLP and non-HLPs. 38 face to face semi-structured interviews with pharmacy staff.	Data indicated largely successful introduction of HLP and the potential to improve customer health. Staff interviews suggest that successful implementation depend on achieving right skill mix and adequate funding.	Qualitative data was limited to community pharmacy staff. Quantitative data provided a snapshot of service delivery but no baseline.

Appendix 7: HLP literature review

Rutter. P, Vryaparj. G (2014)	Explore the views of HLCs on their role and to identify barriers and facilitators in performing the role.	14 semi-structured face to face interviews with HLCs in Dudley, UK.	HLCs held positive perceptions of the role and derived job satisfaction. Ongoing support and training were perceived as important facilitators.	Study sample consisted of 14 of the 29 HLCs in one geographic location.
White. S, Brooks. D, Hopps. A (2014)	Comparative study exploring the views of pharmacists versus non-pharmacist staff of HLP involvement.	18 semi-structured interviews with pharmacist and non-pharmacist staff in from HLPs in Staffordshire.	There were reported benefits to both pharmacist and non-pharmacist staff. HLCs appeared to have benefited to a greater extent through role expansion and professional recognition.	Small sample size, no correlations between reports of benefits and business were made.
Donovan. G, Paudyal. V (2014)	Perspectives of HLP support staff on integration of public health activities into traditional pharmacy roles.	21 semi-structured face to face interviews with HLCs and non-HLC staff in Northumberland.	Contextualisation of fully integrating public health activities into the day to day role of support staff was lacking.	Small sample size in one geographic location. Self-reported, no reference to actual level of service provision.
Sheket. O, White. S (2015)	Follow-up study of the views of community pharmacy staff on HLP.	9 semi-structured interviews (from the 18 staff interviewed 12 months earlier) in Staffordshire.	Continued benefits reported with regards to relationships with other health care professionals, perceived footfall and enhanced job satisfaction.	Small sample size – half the sample lost to follow up. HLP service delivery not investigated. Self-reported.
Machridge. A, Krska. J (2015)	Investigate customer views on the impact of HLP	Questionnaires distributed to community pharmacy customers	Customers of HLPs are more aware of some pharmacy-based services, but pharmacy staff are not perceived to differ in their proactivity in promoting services.	Low response rate (15%) from eight community pharmacies.

Appendix 7: HLP literature review

Firth. H, Todd. A, Bambra. C (2015)	Explore the barriers to implementation and progression of HLP.	26 semi-structured face to face interviews with pharmacists, HLCs and commissioners from North England.	A key enabler identified was workforce development including HLC training. Low awareness amongst pharmacy users was recognised as a barrier as well as time investment.	Limited to one area of the UK. Self-reported, level of implementation not investigated.
Donovan. GR, Paudyal. V (2015)	Explore the views of pharmacy support staff on the HLP initiative	21 semi-structured face-to-face interviews with pharmacy support staff from 12 accredited HLP pharmacies in Northumberland.	Involvement of pharmacy support staff from the outset promotes staff engagement and motivation. Staff perceived further training is required around proactive customer engagement.	Limited to one geographical area in the UK. No reporting of level of HLP implementation.
Kayyali. R, Khan. S, Micallef. R (2016)	Investigating the perceived impact of health champion training on community pharmacy support staff	Pre (n=354) and post (n=54) training quantitative surveys based on training content and knowledge.	The training had a positive impact on confidence and attitude towards delivery of public health services as well as increased awareness of signposting opportunities. No positive impact was reported on public health.	Self-reported outcomes collected post-training session, no follow-up was reported.
Nazar. Z, Brown. D, Portlock. J, Rutter. P (2016)	Investigating the sustainability of HLP from the perceptions of HLCs	Questionnaire delivered to the HLCs in Portsmouth.	HLCs reported that a platform to facilitate interaction in between face-to-face meetings and a designated committee responsible for communication and dissemination would promote sustained involvement in HLP activities.	Limited to one geographical area and study sample included only HLCs.

Appendix 7: HLP literature review

White. S, Poole. J, Rutter. P, Cork. T, Visram. S (2016)	Investigating customer views of receiving health interventions from HLP accredited community pharmacies.	7 semi-structured face to face interviews with customers who had received a public health intervention or advice from a HLC.	Positive opinions of the service received.	Small scale, health outcomes not reported.
Kayyali. R, Singh Grewal. J, Micallef. R (2016)	Evaluation of the delivery and content of health champion training	22 semi-structured interviews with pharmacists, LPC & Public Health leads in South London.	Positive perceptions of training provided was reported to improve staff confidence.	Health champions were not included in the study sample. Self-reported perceived outcomes.
Nazar. Z, Portlock. J, Brown. D, Rutter. P (2016)	Investigate the impact of networking opportunities on the HLC role in Portsmouth.	Two focus groups involving 20 HLCs.	Network meetings provided HLCs with professional development, continued encouragement and opportunities for collaborative work.	Limited to one geographical area. Self-reported activities- the impact on service delivery was not investigated.
Cooper. R, Tsoneva. J (2017)	Explore HLC perceptions of their role.	A focus group of 7 HLCs and 6 semi-structured face-to-face interviews.	Tensions with existing commercial business demands and lack of awareness amongst customers and other pharmacy staff were identified as barriers.	Small study sample. Activities of the HLCs were not reported.
Nazar. Z, Portlock. J, Brown. D, Rutter. P (2017)	Investigate HLCs' experiences of using Facebook to support professional development activities.	10 semi-structured interviews with HLCs in Portsmouth.	HLCs reported that the Facebook group pages contribute a positive role as an information point for troubleshooting and sharing ideas. There was little evidence to suggest enhanced service delivery.	Small study sample. Self-reported study conducted only once with no reported follow-up.