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Rethinking presence:

A grounded theory of nurses and teleconsultation

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SUMMARY

Introduction

Ensuring the provision of equitable, high quality care is becoming progressively more challenging in a context of an ageing population, increased prevalence of long term conditions and a prolonged period of public spending austerity. In response to these challenges, commissioners and providers have explored and piloted a range of innovative approaches to service delivery, including those that involve the utilisation of information technologies.

One such modality – teleconsultation – is the utilisation of video to facilitate real-time, remote consultation between healthcare practitioners and patients. Though teleconsultation has been used as an approach to care since the 1970s, it has grown in prevalence of late, due to reduced costs, improved connectivity and greater social acceptance of video-mediated interaction. Teleconsultation is used within the acute sector (e.g. to expedite specialist stroke or burns care) and to support people living with long term conditions within the community. However, despite evidence of feasibility, clinical benefit and patient acceptance, there is little understanding of how the use of video impacts on the role of those nurses who are involved in teleconsultation.

Research aim, objective and question

The study aimed to explore the use of teleconsultation by nurses, with the specific objective of developing a theory that provides a framework for understanding nurses' use of video-mediated interaction. The specific research question answered by the study was 'how do nurses use teleconsultation?'

Method

The study adopted a constructivist grounded theory approach, supplemented by the use of some Straussian analytical approaches, to explore the use of teleconsultation by nurses.

At the outset of the work, a targeted scoping review of the literature was completed to validate the importance of the research area and to enhance theoretical sensitivity. Registered Nurses (RNs) with experience of using teleconsultation were sampled selectively at the outset of the study, and sampled theoretically once findings began to emerge. Data were collected using semi-structured interviews exploring RNs' experiences, knowledge and feelings surrounding teleconsultation. Interviews were recorded, transcribed and subjected to three-stage, non-linear analysis. Open, axial and selective coding was completed to identify a core category and associated subcategories that provided a framework for a grounded theory of nurses and teleconsultation.

Results

Theoretical saturation occurred after 17 interviews. Participants worked within a range of clinical contexts and used teleconsultation in different ways. Two broad categories of teleconsultation were identified: Nurse-Patient (N-P) teleconsultations, in which the RN and patient were remote from each and interacted via video; Nurse/Patient-Practitioner (NP-Pr) teleconsultations, in which the RN and the patient were physically proximal, while another practitioner (usually a doctor) joined the triad via a video-link.

The core category identified from the data was 'nursing presence'. Whilst this is a well-documented concept in nursing practice, the grounded theory of teleconsultation required it to be re-thought and re-conceptualised. Four subcategories of nursing presence were identified, each with their own defining characteristics:

- **Operational presence**: The nurse's role in ensuring the provision of healthcare services or meeting statutory organisational targets. Includes a range of administrative, organisational and technical activities.

- **Clinical presence**: The delivery of specific healthcare functions or tasks, such as assessing a patient or providing advice on clinical management.

- **Therapeutic presence**: Those elements of nursing activities within teleconsultations that support the patient and/or carer, but are peripheral to the specific object and function of the consultation. These might include provision of reassurance or support, and other activities that build and cement the nurse-patient therapeutic relationship.

- **Social presence**: Supporting, through teleconsultation, the sense that the patient has someone 'there' with them. In addition, this relates to social elements of the interaction with no direct clinical or therapeutic purpose.

The four subcategories offered a holistic, comprehensive insight into the roles played by the nurse during teleconsultation. However, the degree to which presence could be achieved was dependent upon three influencing factors:

- **Enablers:** Those characteristics of teleconsultation that enhance the degree of presence that can be achieved. The main enablers identified during the study were the ability to deliver services regardless of distance and the added value of sight during interactions.

- **Constraints:** Elements of teleconsultation that limited the degree of presence that nurses can offer. Examples include technical failure and the loss of touch.

- **Compensation:** Strategies put in place by nursing staff or others to mitigate the constraints of teleconsultation and optimise the degree of presence delivered. The use of the physically proximal 'third party' was the most apparent compensatory mechanism. Others include enhanced frequency of interaction (termed 'temporal compensation') and education for staff, patients and carers.

Implications for practice and research

From a practice perspective, the grounded theory offers guidance for the future development and delivery of teleconsultation services. The study has highlighted the importance of reliable technology that is fit for the purpose for which it is being utilised. Training and education for all stakeholders within teleconsultations is paramount, as is an understanding of the limitations of video-mediated interactions.

From a research perspective, the study raises a number of areas that require further investigation. From the perspective of teleconsultation itself, the area most in need of study is the experience of patients and their carers. Though some work has been published elsewhere on this subject, further study is warranted as a result of the findings from this doctoral thesis.

More broadly, further study is required of the reconceptualised model of nursing presence. Validation work is required in different areas of technology-mediated nursing care (e.g. telephone triage), to explore whether the same framework can be applied, albeit subject to different influencing factors. Study of the framework within more traditional areas of nursing practice is also recommended, to explore whether the grounded theory of teleconsultation is a valid tool for reconceptualising the general role of the nurse.

Conclusion

This study has identified the range of ways in which nurses utilise teleconsultation to enhance the care of their patients. It has identified that nurses will provide different types of presence during teleconsultation. The degree of presence will depend on specific characteristics of video-mediated communication and strategies employed by nurses to optimise the quality and value of the interaction.

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Finally, I would like to thank the nurses who volunteered to be interviewed for this study and the managers who provided me access to their staff. The grounded theory discussed within this thesis is built from the words and experiences of those nurses. Without their willingness to talk candidly, coherently and confidently about their use of teleconsultation, the development of such a theory would never have been possible.

DEDICATION (AND A SHORT ANECDOTE)

Some months ago, my two daughters were asking me if I had finished my PhD yet. In the course of my response, I mentioned that I was still writing my thesis, to which the youngest replied *"Isn't that just a posh word for poo?"*

Given that this was the first time I had recognised that *thesis* and *faeces* were (at least to the ears of a 10 year-old) homophones, it seemed only right that the end-product of my work should be dedicated to those who had pointed it out.

This work is therefore dedicated to Bethan and Niamh, for making me laugh.

GLOSSARY OF TERMS

Bandwidth: The rate at which data can be transferred. To facilitate a smooth, reliable video-mediated interaction, high bandwidth communications are necessary.

Electronic Intensive Care Unit: Use of teleconsultation to provide specialist, remote support for critical care nurses.

Fidelity: The accuracy with which video technology reproduces an image. To facilitate detailed remote examination of patients (e.g. wound assessment), high-fidelity teleconsultation is required.

Hub-and-spoke: An approach to service design where a specialist hospital (the hub) links to a number of peripheral centres (spokes).

mHealth: The use of mobile technologies (e.g. smartphones, tablet computers, mobile applications) to support healthcare.

National Health Service: A publicly-funded provider of healthcare within the United Kingdom, providing a service free at the point of delivery nationwide.

NHS Direct: A national telephone triage service available as part of wider NHS care in the United Kingdom. Replaced by a similar service, termed '111', in 2013-14.

Nurse/Patient – Practitioner teleconsultation: A type of teleconsultation in which the Registered nurse and patient are physically proximal and are communicating, via video, with a remote practitioner.

Nurse-Patient teleconsultation: A type of teleconsultation in which the Registered Nurse is physically remote from the patient.

Nursing and Midwifery Council: The professional body for nurses in the United Kingdom. Responsible for setting and enforcing standards of conduct and competence

Store-and-forward: A form of remote care delivery where images or other data are recorded and then accessed later, at another site, for interpretation. This can be considered to be a form of asynchronous communication, as opposed to the synchronous (real-time) interaction necessary within teleconsultation.

Telehealth: Use of technology to support remotely the delivery of healthcare or promotion of well-being.

Telecoaching: the use of structured telephone support to support behaviour modification and self-care.

Teleconsultation: Use of real-time video-mediated interaction to support the delivery of healthcare.

Telemedicine: A term often used synonymously with teleconsultation. Usually related to the use of video as a medium for providing healthcare.

LIST OF ACRONYMS USED

ABCDE: Airway, Breathing, Circulation, Disability, Exposure

ANA: American Nurses Association

CAQDAS: Computer-Assisted Qualitative Data Analysis Software

CHF: Chronic Heart failure

CINAHL: Cumulative Index to Nursing and Allied Health Literature

COPD: Chronic Obstructive Pulmonary Disease

CPR: Cardiopulmonary Resuscitation

CRD: Centre for Reviews and Dissemination

CT: Computerised Tomography

DM: Diabetes Mellitus

ED: Emergency Department

eICU: Electronic Intensive Care Unit

EN: Enrolled Nurse

EPR: Electronic Patient Record

FHSC: Faculty of Health and Social Care

GP: General Practitioner

ICT: Information and Communication Technology

IT: Information Technology

IF: Impact Factor

IRAS: Integrated Research Application System

LEDC: Less Economically Developed Countries

LTC: Long Term Condition

MALT: Mainstreaming Assisted Living Technologies

MEDC: More Economically Developed Countries

MRC: Medical Research Council

NHS: National Health Service

NHSD: NHS Direct

NMC: Nursing and Midwifery Council

NPM: Normalization Process Model

NP-Pr: Nurse/Patient–Practitioner

N-P: Nurse-Patient

OTN: Ontario Telemedicine Network

PEOU: Perceived Ease of Use

PU: Perceived Usefulness

REC: Research Ethics Committee

RCN: Royal College of Nursing

RN: Registered Nurse

SLT: Speech and Language Therapist

SMS: Short Message Service

STARPAHC: Space Technology Applied to Rural Papago Advanced Health Care

TAM: Technology Acceptance Model

TECS: Technology Enabled Care Services

UK: United Kingdom

VC: Videoconference

VHA: Veterans' Health Administration

LIST OF FIGURES

CHAPTER 1: INTRODUCTION, DEFINITIONS AND CONTEXT

Introduction

Commissioners, providers and purchasers of health and social care face a number of complex and developing challenges. An ageing population, increased prevalence of long-term conditions (LTCs), clinical complexity and public spending austerity are some examples of the specific pressures felt across the globe (Barrett et al., 2015). As a result, policy-makers, care organisations and individual clinicians are seeking solutions that allow for more effective use of resources, support a more independent, self-caring population and reduce the demand on acute and secondary care services. One response to the challenges posed by the changing demographic, clinical and financial landscape has been to develop innovative service models and encourage the adoption of supportive technologies.

Information and Communications Technology (ICT) has been used for over a century to support the delivery of healthcare and overcome financial, clinical, geographical and logistical issues. From the first published use, described in the Lancet in 1879, of the telephone to facilitate the remote assessment of a young child with suspected croup (Aronson, 1977), through to the development of nationwide telephone, online and mobile application-based triage services, ICT has been utilised as an adjunct to usual care. In the last two decades, the rate of technological development has gathered pace and the use of ICT in healthcare has reflected this. As new technological functionality has been developed, such as broadband and wireless internet, Bluetooth, smartphones, tablet computers, videoconferencing, social media and wearables, healthcare applications have soon followed.

The adoption of ICT to enhance health and social care has implications for all stakeholders: patients, carers, practitioners and funders. As the largest professional group in healthcare, nurses must be seen as key players in the adoption of technology (Barrett, 2012a). However, the increasing use of ICT is likely to accelerate a move away from relying solely on traditional face-to-face models of care and towards the provision of remote care based on transmission of data, voice and video (While & Dewsbury, 2011). This presents a number of challenges to nurses at a professional and individual level. The role of nurses is rooted in face-to-face and 'hands-on' interaction with those they provide care for. As a result, the use of ICT to provide remote care may be viewed as contrary to the heart and soul of the profession. Conversely, ICT provides opportunities to deliver key nursing priorities: to empower and educate patients; to deliver cost-effective care that is more convenient for patient and carers; to reduce the reliance on secondary care and enable healthier, connected communities.

ICT in healthcare therefore presents nursing with a paradox: it could enable nurses to provide enhanced care to a wider range of patients, but it might involve adopting a modality of care that represents a step-change away from long-held professional values (Barrett, 2012a). This study attempts to resolve some of the unanswered questions regarding nurses and ICT by developing an understanding of nurses' use of one specific application of technology in healthcare: teleconsultation. Not only does this inform the future implementation and use of teleconsultation by nurses, but the findings that emerge from the study offer insights into the roles and responsibilities of nurses more generally.

Definitions

One of the first steps in any study that explores a specific modality of care delivery is to clarify terminology. The rapid development of technology, the complexity of some interventions and the overlap between different modalities, makes this clarification challenging. Those with an interest in the use of ICT in healthcare are faced with a plethora of terms, including informatics, eHealth, connected health, digital health and mobile health (mHealth), which are often used synonymously and without consistency. This leads to confusion over the specific meaning of terminology and the growth of what has been previously described as a set of 'tangled taxonomies' (Barrett et al., 2014).

Despite the lack of clarity, there are some areas of broad consensus. The prefix 'tele', for example, is derived from the Greek for 'far off'. (Oxford English Dictionary, 2003). Many applications of ICT in healthcare therefore utilise this prefix to identify an intervention as being delivered at a distance; that is, the provider of care and the recipient of care are physically remote from one another. The range of 'tele-something' terms evident in health and social care include telehealth, telecare, telemedicine, telemonitoring, telenursing and telecoaching. The broadest of these is *telehealth*, defined as the use of technology to support remotely the delivery of healthcare and promotion of well-being (Barrett, 2012b). The term is often set alongside *telecare*, which focuses on the use of technology to promote independence and safety, and is therefore more closely associated with the provision of social (rather than health) care (Brownsell & Bradley, 2003).

In the taxonomy described by Barrett (2012b), the broad definition of telehealth is viewed as an 'umbrella' term, under which can be found specific applications such as telemonitoring, telecoaching and teleconsultation. Briefly, *telemonitoring* is the recording and transmission of vital signs and symptoms by a patient (usually living at home) to a healthcare provider. These data can be used by healthcare practitioners to identify early signs of deterioration, respond promptly and (if the service is working as planned) prevent the need for hospital care (Atkin & Barrett, 2012). In addition, it is hypothesised that daily recording of vital signs empowers and educates patients, thereby enhancing and supporting self-care. There has been particular interest in the use of telemonitoring in people with long-term conditions such as Chronic Obstructive Pulmonary Disease (COPD), Chronic Heart Failure (CHF) and Diabetes Mellitus (DM), with some evidence of improvements in clinical outcomes (Steventon et al., 2012).

Telecoaching is the use of structured, remote support, usually via the telephone, for people who wish to embark on lifestyle or behavioural modification programmes. Examples of areas in which telecoaching has been used successfully include weight loss, smoking cessation and alcohol services (Barrett, 2013a). Another modality of care usually mediated via the telephone - *teletriage* - offers remote assessment of acute healthcare issues and signposting to appropriate services. Though the term teletriage is not used widely, it is the most commonly utilised application of ICT in healthcare, with approximately 12 million calls in England to the 111 service (formerly NHS Direct) each year (NHS England, 2015).

The focus of this study - *teleconsultation* – also has a number of definitions. The Centre for Reviews and Dissemination (CRD) described teleconsultation as "two way communication between clinicians and patients, or between clinicians" (CRD, 2012:2). Though this definition describes the broad function of teleconsultation, it provides little insight into the mechanisms, technologies or sensory cues that characterise the process. Barrett (2012b:21) highlighted the specific role of video in the interaction, defining teleconsultation as "…video consultation between practitioners or between practitioner and patient". This definition still has weaknesses: the detail of who must be involved in a teleconsultation is overly prescriptive and does not allow for more complex interactions such as multidisciplinary meetings or the involvement of carers. Additionally, the definition does not make explicit the fact that participants are remote from one another (though this is implicit within the definition). One of the most succinct and useful definitions was offered by Sävenstedt et al. (2005:317): "[teleconsultations are]…remote consultations with the assistance of video conference". However, though accurate and informative, this definition does not describe the purpose(s) for which teleconsultation might be used. Also, none of the definitions quoted above establish (though they all allude to it) that teleconsultation involves only real-time interaction, rather than store-and-forward, asynchronous exchange of information.

For the purposes of this study, a definition has been developed that clarifies the communication medium, highlights the remoteness of participants and provides a brief insight into role and function. Teleconsultation will be defined as;

"The use of real-time video-mediated communication to support remotely the delivery of healthcare and promotion of well-being"

In some literature related to telehealth, the term *telemedicine* is used to describe an application of technology essentially identical to that addressed by the definition of teleconsultation developed for this study. The decision to avoid 'telemedicine' in favour of 'teleconsultation' is a deliberate one. The use of 'medicine' in the former arguably makes it profession-specific (or, at the very least, speciality-specific). It would therefore seem rather counterintuitive to use 'telemedicine' as the term of choice in a study focused on describing the activities and experiences of nurses (Gerrard et al., 1999). In addition, telemedicine is used to describe types of data transmission other than just real-time. For example, store-and-forward telemedicine involves the storage of digital images or video at one point in time (by a patient or practitioner), for review by another, remote practitioner at a later time (Wurm et al., 2008; Lenardis et al., 2014). This approach to the transmission of data falls outside of the 'real-time' scope of this study, providing another argument for not utilising telemedicine as the descriptor of choice.

Nonetheless, it should be recognised that telemedicine remains a popular term within the literature for describing the use of video as a mediator in healthcare interactions. Indeed, some authors use telemedicine as an all-encompassing term, analogous to the use of the term telehealth as defined in this thesis. Two relatively recent attempts to develop a taxonomy for technology-based remote care used telemedicine in this broad way, meaning that the term is likely to remain prominent in the literature for some time (Bashshur et al., 2011; Tulu et al., 2007).

The development of teleconsultation

The use of video as a communication medium within healthcare could be seen as a modern phenomenon, developing alongside the roll-out of high-bandwidth internet access, camera enabled phones and computers, and applications such as Skype and FaceTime. There is certainly no doubt that video communication has become ubiquitous in the past few years and that technology has enhanced the quality and reliability of interactions. However, the potential of video-mediated communication between providers and recipients of healthcare has been recognised for decades. Even before the technology to enable teleconsultation was available, the potential benefits and applications were being predicted.

In the mid-1920s, the technologist Hugo Gernsback outlined the use of 'radio' to allow for visual assessment and diagnosis of patients (figure 1.1: p8). Not only did Gernsback describe some of the technical elements of modern-day teleconsultation, but he also recognised the organisational and clinical advantages, citing the potential for technology to increase access to healthcare by reducing travelling times (Novak, 2012).

The first practical demonstrations of the potential of teleconsultation were in the United States during the 1960s and 1970s. For example, a video-link between two hospitals, allowing for real-time, remote consultation for patients receiving psychiatric care, was established in 1964 (Zundel, 1996). Elsewhere, during the mid-1970s, healthcare was provided to a rural American Indian reservation in Arizona, via two-way video (figure 1.2, p9) (Freiburger et al., 2007).

Figure 1.1: Covers of the April 1924 'Radio News' (left) and February 1925 'Science and Invention' (right) magazines. Many characteristics of a modern day teleconsultation are present (real-time visual interaction; presence of third parties), though Gernsback's remote physical assessment device in the right-hand image – the 'teledactyl' – has not yet found its place in general practice. (Images from Casey & McCrossan, 2011 & Novak, 2012)

These early forays into the use of video to support healthcare demonstrated the feasibility of the approach. However, poor quality of transmission resulting from low bandwidth communication channels led to many of these projects being short-lived. As a result, this era is sometimes referred to as the 'first-generation' of telemedicine/teleconsultation (Freiburger et al., 2007). Nurses began to play a part in teleconsultation during this first generation. One of the earliest reports of nursing participation in teleconsultation comes from the United States in the early 1970s, where a nurse based in a Boston hospital utilised a video-link to support care for people at the nearby Logan Airport (Schlachta-Fairchild et al., 2009).

Figure 1.2: Physician, mother and baby overseen by a camera as part of the Space Technology Applied to Rural Papago Advanced Health Care (STARPAHC) project in 1973 (from Frieburger et al., 2007)

The growth of teleconsultation in healthcare began to gather pace in the 1980s with the development of the personal computer and, to a greater extent, during the 1990s internet boom (Sosa-Iudicissa et al., 1998). During this time, teleconsultation began to have a presence within the National Health Service (NHS) in the United Kingdom (UK), improving access to care in settings with particular geographical challenges, such as rural Scotland (Harvey et al., 2010). Though services such as this were generally well-received, their adoption was hampered to some extent by a reliance on less-than-ideal technology, such as small screens, cathode ray videophones with slow refresh rates, and low-bandwidth connectivity (Figure 1.3; p10). Nonetheless, as the feasibility of video-mediated communication in healthcare became established, so the number of clinical applications grew in scope. Terms such as teleradiology, teledermatology, telepsychiatry and teledialysis began to appear in the clinical press, demonstrating the level of sub-speciality becoming associated with the modality of care (Sosa-Iudicissa et al., 1998).

Figure 1.3: Nurse and patient during teleconsultation with a General Practitioner in Scotland, circa mid-1990s. (From Harvey et al., 2010)

As teleconsultation services have continued to grow and diversify, nurses have been at the forefront. The central role of nurses in these developments is not surprising: consultation, interaction and discussion with patients has traditionally been the cornerstone of nursing practice (Shattell, 2004). Where the medium through which these interactions is altered (for example, a shift from face-to-face to video-mediated communication), nurses will arguably be the professional group affected to the largest degree.

In some areas, the role of nurses was so prominent in video-mediated healthcare projects that the term 'telenursing' began to appear in the academic press (Whitten et al., 1997; Borchers & Kee, 1999). This term has gained particular traction in the United States, where the American Nurses Association (ANA) has used it to describe a specific subset of broader telehealth services (Hutcherson, 2001).

As a brief aside, it is important to explore why the term 'telenursing' has not been adopted for this study, given that it is focused specifically on nurses' use of technology to provide remote care. The first reason is that, like telemedicine, telenursing is a profession-specific term that overlooks the multidisciplinary nature of some of the interactions explored in this study. The second reason is that telenursing incorporates a number of different technologies and media. Though some telenursing applications involve real-time, video-mediated communication, others include use of just the telephone or the remote transmission of vital signs data. As a result, 'telenursing' as a term did not offer the technological specificity necessary to accurately define the scope of the study.

If the 1960s and 1970s saw the first generation of telemedicine, with the development of personal computers (1980s) and the internet (1990s) representing the second and third, then the 21st Century has seen the onset of the fourth. Social media, internet-enabled mobile technologies and high-bandwidth connectivity have all served to make video-mediated communication a norm within society. Applications such as Skype and FaceTime have also removed the need for bespoke videoconferencing hardware and opened the door for low-cost teleconsultation services in a range of clinical areas (Armfield et al., 2012). From a UK perspective, social acceptance of teleconsultation to support healthcare has reached its zenith (or nadir, depending on viewpoint) with the popularity of 'Embarrassing Bodies', in which members of the public seek and receive personal (often, very personal) healthcare advice via a video-link shared with millions of television viewers (Channel 4, 2015).

Current activity and policy drivers

Though widespread adoption of teleconsultation in practice is a relatively new phenomenon, there have been pockets of activity for over four decades. Since these early developments, teleconsultation services have tended to be implemented to overcome challenges associated with geography, logistics or the availability of specialist knowledge;

1. *Geographical barriers*: By definition, the use of teleconsultation overcomes the challenges associated with providing healthcare across long distances or geographical barriers (such as bodies of water). Examples include the use of teleconsultation to overcome the geographical challenges associated with providing healthcare to residents of the Highlands and Islands of Northern Scotland (Audit Scotland, 2011). In addition to yielding benefits such as reduced travel time and lower costs for patients and practitioners, overcoming distance via teleconsultation also allows care to be delivered to people in their place of residence. This fits with a general policy push to keep care closer to home, but also provides a range of specific benefits. For example, a teleconsultation service in West Yorkshire allows people with long-term conditions to receive 24-hour video support whilst remaining at home (whether their own residence or a care home) (Cruikshank & Paxman, 2013). For people at the end of life, teleconsultation can facilitate the provision of support over distance, allowing them to fulfil their wish of dying at home (Low et al., 2013).

2. *Logistical barriers:* The need to transfer prisoners to healthcare settings is one of the most notable examples of logistical issues that can prompt the use of teleconsultation. Transfer from prison to an Emergency Department (ED) for

assessment and/or treatment requires specialist transport, escorts, constant security and, in some cases, closure of some sections of the ED to ensure the safety of other patients. For this reason, teleconsultation between prison medical services and ED practitioners has been used to assess ill or injured prisoners and, where possible, avert the need for transfer to hospital (Cruickshank & Paxman, 2013).

3. *Need for specialist input:* The centralisation of acute care services results in some hospitals lacking 24-hour, seven-day-a-week, on-site specialist services. To avoid the need for transferring patients to specialist sites, teleconsultation has been introduced in some settings to provide remote support utilising a 'hub' (specialist centre) and 'spoke' (referring hospital) model. Clinical applications for services such as this include acute stroke care (Demaerschalk et al., 2012), burns care (Barrett et al., 2013) and dermatology (Warshaw et al., 2011). There is also increasing interest in the use of teleconsultation to provide video-mediated remote specialist support for patients requiring critical care – sometimes referred to as 'e-ICU' or 'tele-ICU' (Goran, 2010).

The potential for teleconsultation to address challenges in the delivery of healthcare has led to a series of policy initiatives aimed at increasing the adoption of services throughout the UK and beyond. In Scotland, the National Strategy for Telehealth and Telecare summarises the successes of teleconsultation in stroke management and prisons healthcare. To build on these successes, the strategy advocates the development of the digital infrastructure necessary to allow for wider adoption of video-mediated services (NHS Scotland, 2012).

Support for telehealth in Wales was boosted in 2013 by the launch of a £9.5M Health Technologies and Telehealth Fund (NHS Wales, 2014) and in Northern Ireland, the broad strategy for enhancing the health of the population – 'Transforming your Care' – advocates greater use of telehealth applications such as teleconsultation (Health and Social Care Board, 2013).

In England, the use of technology to enhance care has been recognised by policy makers, commissioners and providers of care. The most recent initiatives to drive wider adoption of telehealth and telecare services started with the launch of '3 Million Lives' in 2012. As the name suggests, this programme of support and guidance for health and social care commissioners and providers sought to expand the use of technology in healthcare, including teleconsultation (Department of Health, 2012). This initiative quickly evolved into a broader, less prescriptive programme of supporting Technology Enabled Care Services (TECS) as a mechanism for providing better, cheaper, more accessible care (NHS England, 2014). Aspirational initiatives such as 3 Million Lives and TECS have been supported by complementary funding programmes, including one which focused specifically on the opportunities for nurses to use technology to enhance the care that they provide to their patients (Department of Health, 2013).

Further afield, there is a similar push to exploit the potential of technology enhanced care generally and video-mediated care specifically. Within a number of More Economically Developed Countries (MEDCs), regional or even national networks have been developed that allow for the large-scale use of teleconsultation. For example, the Ontario Telemedicine Network (OTN) in Canada operates over 1600 sites, serving over 300,000 patients (OTN, 2013). Similarly, in the United States, the

Veterans' Health Administration (VHA) operates a network of over 4000 video access points, serving over 300,000 members (Darkins, 2012).

Networks and hardware for video communication can be costly to build and operate, thereby making them unobtainable for some populations in Less Economically Developed Countries (LEDCs). However, the ubiquitous nature of the mobile phone across the globe, coupled with the rapid growth of network coverage, has led to mHealth (use of mobile technologies in healthcare) becoming an important element of care delivery. Though most clinical applications to date have been in the form of Short Message Service (SMS) text or store-and-forward digital images, development of hardware and connectivity will mean that teleconsultation is also likely to become an important tool in the delivery of healthcare in LEDCs (Davey et al., 2014).

Conclusion

Since its conception over fifty years ago, teleconsultation has continued to grow in both scale and scope. The challenges of providing healthcare to a complex, ageing and sometimes geographically remote population has driven organisations and clinicians to explore the potential of video-mediated communication. The context of ICT in healthcare generally and teleconsultation specifically is therefore one of a broad recognition of potential benefits and policy support for further adoption and uptake.

As an innovative and fast-developing modality of care, there is a broad and growing evidence base related to teleconsultation. However, as Chapter 3 will outline, this evidence base often comprises research into, and evaluation of, individual applications of teleconsultation in specific healthcare contexts. What is missing is a broader understanding of the impact of teleconsultation on the delivery of healthcare, the role of professionals, and on the well-being and experiences of users and carers.

From a practitioner perspective, there is not yet a complete understanding of how these approaches to care impact on nursing roles, professional status and relationships with patients. It is not clear exactly what the impact of technology is on a nurse's ability to know, interact with and care for their patients (Nagel et al., 2013). Without this understanding, it is not possible to have a true insight into how best to support the further development and delivery of teleconsultation services by nurses. Technological development will continue apace, teleconsultation services will spread more widely across the healthcare community and nurses will maintain their role at the vanguard of innovation. This thesis aims to support this development by providing a better understanding of what teleconsultation means for nurses and their profession.

CHAPTER 2: STUDY OBJECTIVES AND METHODOLOGY

Development of the research aim, objective and question

The previous chapter outlined the way in which telehealth generally and teleconsultation specifically have grown in prevalence as approaches to supporting the delivery of healthcare. The important role that nurses play in developing and delivering these new approaches to care was also explored. It was this rapid and recent development of telehealth, coupled with the professional implications for nurses, which first sparked an interest in teleconsultation as an area for Doctoral study. The next stage of developing this area of interest into a coherent study plan was to establish a research aim, objective and question.

Woods et al. (2010) highlighted the difference between the aims of a study (what the researcher is hoping to achieve), the objective (a more explicit statement of what will be achieved) and the question (a statement of exactly what the study seeks to discover). Though exhibiting important differences, these elements of the research proposal will often stem from the same source, such as practice experiences or previous research activity (Woods et al., 2010).

For this study, the research aim, objective and question were generated from the experience of completing a number of studies, surveys and service evaluations related to the use of technology by nurses. This programme of underpinning work linked to evaluations that explored one of two categories: utilisation of remote healthcare technology by nurses or the implementation and adoption of teleconsultation services.

Within this first category, Barrett (2013b) explored the views of pre-registration nursing students towards the adoption of telehealth and telecare as modalities of

healthcare. The study explored baseline knowledge and perceptions of these services and tested the impact of an online learning resource designed to enhance understanding and awareness. Analysis of before-and-after questionnaires demonstrated that though the learning resource significantly increased student nurses' awareness and understanding of telehealth, the effect on their perceptions was less pronounced. The study concluded that there may be deep-rooted concerns regarding the use of technology to support nursing care, possibly related to an underlying perception that introducing technology would reduce face-to-face contact and impact on some of the more humanistic and therapeutic elements of nursing practice. However, the study concluded that more research was required to establish exactly how technology affected the role of nurses and their relationships with patients.

These findings were supported through analysis and publication of findings related to the Royal College of Nursing (RCN) eHealth survey (Barrett & Wallis, 2013). This online survey gathered the views of over 1000 Registered Nurses (RNs) in relation to many aspects of using technology in the clinical environment. When asked specifically about their views on telehealth, the survey suggested that nurses recognised the potential benefits of using technology to support the delivery of healthcare. However, data from respondents also demonstrated that RNs had a number of concerns regarding the use of remote care technologies within their practice. Specifically, some respondents suggested that the use of technology to facilitate interactions with patients could impact on their professional role and alter the traditional elements of the nurse-patient relationship (Barrett & Wallis, 2013). However, the survey did not provide any detailed insight into the mechanisms through which the use of technology may alter the nurse's role.

Additional work, carried out as part of a wider telehealth research project, evaluated the development of a teleconsultation service for patients with LTCs (Barrett, 2013a). The service allowed patients in their own homes (or in residential care) to talk, via a video-link, to an RN based in an acute hospital. The service facilitated patient assessment, triage, remote management and, if necessary, escalation to face-to-face healthcare services. The evaluation of this service provided an insight into the most effective applications of teleconsultation and offered an indication of the clinical and economic benefits that could be delivered. However, it also suggested that the nurses responsible for delivering the service held views regarding the development of their own roles, the efficacy of nurse-patient interaction via teleconsultation and the challenges associated with using this innovative modality of care.

Further insights into the work of nurses during teleconsultation were provided through the evaluation of a service designed to enhance the care of patients with acute burns. The service facilitated teleconsultation between specialist burn centres ('hubs') and EDs in referring centres ('spokes'). By allowing for timelier access to specialist support and advice, teleconsultation proved itself to be an effective method of facilitating burn care that was generally popular with practitioners, patients and carers (Barrett et al., 2013). Again though, this evaluation work gathered feedback from practitioners related to the strengths, weaknesses and effects of teleconsultation on the delivery of care, suggesting the need for further research in this area. A number of issues were raised by nurses using the service that suggested particular characteristics of teleconsultation, including the availability of visual cues and the prevalence of technical failure, which influenced levels of adoption by clinicians.

The previous work undertaken in this area suggested that the development and delivery of telehealth is associated with benefits for patients and for providers of healthcare services. In addition, there appeared to be a number of nuanced mechanisms at play that altered the dynamic of care delivery and the professional role of nurses. However, the studies discussed above have generally been workforce surveys or service evaluations, without the academic rigour or level of analysis necessary to produce conclusive or generalizable findings. Instead, they can be considered to be antecedents to this Doctoral work, helping to identify and hone the area of study; informing the development of the research aim, objective and question.

What the previous programme of work highlighted is that there is little understanding of the experience of those involved in the process of teleconsultation. There are two key perspectives to be considered: those of the clinician and those of the patient (+/- any informal carers). An early dilemma in developing the scope of the study was therefore to decide whether to explore the views of all agents in teleconsultation, or focus purely on one group. In addition, there needed to be a decision made on whether a specific use of teleconsultation (e.g. telestroke) would be studied or whether a broader understanding of video-mediated communication in healthcare was required.

In terms of the latter issue, a decision was made that the study would be most beneficial if it provided a broad understanding of teleconsultation, rather than insight into one specific service. This decision was made on the basis that much of the previous work in this area had focused on just one service, such as burns (Barrett et al., 2013) or supporting residents in care homes (Barrett, 2013a). This service-focused work raised the question of what similarities, differences and themes might be apparent across teleconsultation as a whole, thereby justifying a broader scope for the Doctoral study.

The decision to have a broad clinical scope enhanced the generalisability of the work but raised the potential risk of the study becoming insufficiently focused. Trying to explore the experiences of all agents in a wide range of contexts could lead to an unworkable and ill-focused study with different perspectives becoming conflated and confused. To give the work the necessary clarity of purpose, a decision was made just to focus on the perspectives of one group involved with teleconsultation – namely the experience of clinicians; specifically that of nurses.

This decision was taken for a number of reasons. Firstly, the work carried out as antecedents to this study focused on the experiences of clinicians. Previous theoretical sensitivity had therefore already been developed in this area, thereby supporting the analytical process and identification of emerging themes (Strauss & Corbin, 1998). Secondly, nurses that had been interviewed previously as part of these teleconsultation studies suggested a complex range of impacts on their professional roles and responsibilities, that was ripe for further exploration. It was felt that by gaining an in-depth understanding of nurses' experiences within teleconsultation, it would be possible to identify steps to enhance the effectiveness of interactions between clinicians and patients. Such a focus was also felt to provide the foundation stone for subsequent research, outside the remit of this study, which will then focus on the experience of patients, informal carers and other practitioners to provide a holistic picture of the teleconsultation process. As a result of these decisions on project scope, the research aim was defined as being ***to explore the use of teleconsultation by nurses.***

This broad research aim defined the general scope of the study, but did not provide any detail on what the research sought to achieve – something that a research objective should clarify (Woods et al., 2010). Given that previous experience and work in this area suggested a lack of understanding about nurses' use of teleconsultation, a specific

research objective (such as the development of a best practice toolkit for video-mediated interaction) seemed unfeasible. This lack of previous understanding also made the testing of any hypotheses using experimental methods unrealistic. Instead, a less tangible, but more realistic objective to **develop an understanding of how teleconsultation is used by nurses** was decided upon.

At this stage in the developmental process, there was consideration of the research approach that would be most appropriate to meet the aim and objective. For reasons explored in detail within the second half of this chapter, grounded theory was selected as being the most appropriate research method. The selection of this method had an impact on the development of the research question: any question that was generated needed to be one that was not only commensurate with the aim and objective, but also met the philosophy of grounded theory study. Essentially then, the research question needed to be specific enough to provide the project with a clear direction, but broad enough to allow for flexibility and responsiveness to emerging themes (Strauss & Corbin, 1998). Hood (2007) described how research questions in grounded theory must focus on *process*. There must be no element of comparison (e.g. comparing teleconsultation with telephone interactions) and no attempt to test hypotheses. The researcher must avoid framing the question itself in the descriptive or interpretive language of generic qualitative approaches. In addition, the research question must not allude to testing any existing theories, but instead allow for the generation of new theory from the data itself (Maz, 2013).

Given these criteria, the research question to be answered within the study was simply *how do nurses use teleconsultation?* Though not as detailed as might be expected from a research question, a case can be made that this five-word query offered all that was required at the start of a grounded theory study. It provided the focus needed to

inform early sampling and a scaffold upon which data collection methods could be constructed. It made clear that the technological focus of the study was teleconsultation and that the professional focus was upon nurses. However, the question was also broad enough to allow for flexibility in data collection - it did not restrict the study to specific clinical applications of teleconsultation or particular contexts of care. Most importantly, given the decision to use grounded theory, the question allowed for the study to adapt and flex as concepts and core categories began to emerge. The subsequent chapters describe findings and conclusions linked to aspects of teleconsultation that are not explicit within the research question, but which emerged from data collected in an attempt to answer it.

Selection of the research method

The development of the research aim, objective and question was an iterative process that took place in parallel with considerations of the optimal method with which to complete the study. As aims, objectives and questions were considered, they prompted consideration of potential methods which, in turn, further informed the development of research questions.

Initial decisions related to the research methodology and method were straightforward. An early decision was made that because the aim of the study was to explore an area of nursing care (rather than test a specific hypothesis), a qualitative (as opposed to quantitative) approach would be most appropriate (Holloway & Wheeler, 1996).

Certain qualitative methods were quickly eliminated as options. For example, ethnography, which allows researchers to understand the culture of a specific group (Williams, 2008), was briefly considered to provide an insight into the work of 'teleconsultation nurses'. However, in most of the previous work carried out in relation

to this modality of delivering care, teleconsultation was just one part of a nurse's role, rather the totality of their working day. It was therefore concluded that there was not yet a sufficient critical mass of a single, defined group to justify an ethnographic approach.

Other philosophical and methodological decisions were more challenging. In the early stages of development, a phenomenological methodology seemed the most suitable approach towards addressing the research aim and objective. Phenomenology remains a popular approach to nursing research, despite sometimes being considered complex in both theoretical and practical terms. This complexity can stem from the term 'phenomenology' being used to describe both a philosophy and a research methodology, which can in turn lead to it being misunderstood and misinterpreted by nurse researchers (Buxton, 2011; Norlyk & Harder, 2010). As the name suggests, phenomenology provides researchers with an approach through which they can explore the lived experience of participants in relation to a specific phenomenon (Earle, 2010). In the case of this current study, phenomenology would have enabled the exploration of nurses' experiences of using teleconsultation to provide care to their patients.

The specific 'branch' of phenomenology that was of most interest was that of interpretive phenomenology, based on Heideggerian Hermeneutic principles and distinct from the Husserlian, descriptive approach (Converse, 2012). The reasoning behind considering this approach was that it seemed to have an intuitive fit with the context in which the project was being carried out. As outlined earlier in the chapter, the study concept stemmed from many years of experience involved with the theory and practice of using technology to support the delivery of care, resulting in a number of published papers in both the peer-reviewed and 'grey' literature spaces. As a result,

the study would have progressed in the context of researcher having the 'fore-having, fore-sight, and fore-conception' that Heidegger (1962) describes as being crucial to the use of an interpretive phenomenological approach (Converse, 2012). Additionally, an interpretive approach would have allowed for the development of a deeper understanding of the experience of teleconsultation, rather than simply describing the essence of the phenomenon, as would be the case if descriptive phenomenology was the chosen approach (De Witt & Ploeg, 2006). Again then, this approach was commensurate with the desire to explore the phenomenon of teleconsultation, as outlined within the research aim.

Though elements of a phenomenology were extremely attractive, use of this methodology would have offered a number of challenges. There was a suspicion at the outset of the work that meeting the research aim and objective would require not only data from primary sources, but also a reappraisal and review of previous literature related to the specific field of teleconsultation and the broader use of technology to support nursing care. This desire to incorporate previous work into any understanding of teleconsultation suggested the need for an approach that was broader than that of a purely phenomenological study, where previous literature has a peripheral role and findings are generated almost exclusively from the experiences of participants (Buxton, 2011).

The research objective also challenged the suitability of adopting a phenomenological approach. The objective of developing an understanding of teleconsultation intentionally alluded to a research output that would inform the further development and use of teleconsultation by nurses. Though not explicitly outlined in the research aim, objective and question, there was, from the early stages of study design, an aspiration to develop some type of theory or framework that clarified and

conceptualised the use of teleconsultation by nurses. Though phenomenology can be used to developed broad theories – for example, McCance (2003) used the findings from a hermeneutic investigation to develop a conceptual framework of caring in nursing practice – the most usual outcome is limited to a narrative of the lived experience. As a result, it was decided that a phenomenological approach would not allow the study to meet fully its aim and objective.

Given the challenges associated with phenomenology, the potential of a grounded theory approach was evaluated. There are similarities between grounded theory and phenomenology: both explore phenomena from the viewpoint of those who have experienced them and both usually rely on the analysis of interview or focus group data to generate findings. These similarities can lead to 'method slurring', where researchers blur definitions and research methods associated with the two approaches (Baker et al., 1992). This is problematic because, despite similarities, the two approaches have different philosophical roots and require different methodological processes. Being cognisant of the risk of method slurring was therefore important during subsequent stages of study design, development and implementation.

Grounded theory requires the development of theory from data, rather than (as is the case in many research methods) using data to test theory (Strauss & Corbin, 1998). Given this defining philosophy, a number of initial tests needed to be passed to establish whether grounded theory would be an appropriate method. Firstly, grounded theory does not allow for the testing of hypotheses or existing theories (Maz, 2013). Because the research aim was to explore teleconsultation and nursing, and no hypotheses were to be tested, grounded theory remained a viable option.

Grounded theory is also seen as an attractive research method where there is little or no pre-existing theory or evidence base in a specific area (Cutcliffe, 2008). The previous chapter has described how teleconsultation has been in use for a number of decades and has generated an evidence base related to feasibility and clinical outcomes. However, there is very limited evidence related to the way in which nurses use teleconsultation and how video-mediated interaction affects the nurse-patient relationship (or whether it affects it at all). Superficially then, grounded theory appeared an ideal method to help address a gap in the evidence base and gain a better understanding of a relatively unexplored area of nursing practice. Indeed, grounded theory has been identified previously as an attractive option for developing an understanding of the use of information systems and technology in contexts other than healthcare (Urquhart et al., 2010; White & Weatherall, 2010).

Despite characteristics of the study favouring a grounded theory approach, some methodological hurdles needed addressing before a final decision to adopt this approach could be made. Firstly, there was the generation of the research question, described in more detail earlier within this chapter. To facilitate the development of a Doctoral research proposal and support key elements of the process (such as acquiring ethical approval), a research question was formulated very early in the project timeline. This may have invalidated a grounded theory approach where the research question(s) should be determined as a result of early data from participants (Chiovitti & Piran, 2003). However, as described earlier, the research question ('how do nurses use teleconsultation?') was felt to be broad and flexible enough to not restrict the development of theory from primary data. In addition, the question was reflected upon throughout the study to ensure that it was not invalidated by the findings, themes and categories that emerged from analysis of data.

The consideration of using the grounded theory method also impacted on the research objective outlined earlier. The output of a grounded theory study is, as the name suggests, a theory that relates to the phenomena under investigation. The initial research objective (to develop an understanding of how teleconsultation is used by nurses) did not therefore reflect what might be expected of a grounded theory study. As a result, once the approach was decided upon, the research objective was reviewed to acknowledge the desire to generate theory from data. When carrying out grounded theory, two types of output can be developed: *formal theories* provide an insight into a broad concept (such as professionalism), whilst *substantive theories* are more focused on a specific social phenomenon (such as therapeutic touch) (McCann & Clark, 2003). The narrow and defined scope of this study was best suited to the latter, so the most appropriate research objective within the new methodological context was *to develop a substantive theory of how nurses use teleconsultation.*

Another potential barrier to the selection of grounded theory as a method was that, as identified earlier, the researcher has substantial experience of using technology to enhance care, and of evaluating its impact on practitioners. This had facilitated the development of prior knowledge related to many aspects of telehealth in general and teleconsultation specifically. Whilst this may have been useful if adopting some qualitative approaches, such as interpretative phenomenology, it proved more problematic when considering the use of grounded theory as a method. In the eyes of some grounded theorists, the inability to approach the data as a 'blank canvas' is contrary to the requirement for the researcher to enter the field as one who is naïve, without preconceptions of what they might find, and willing to learn only from research participants (Streubert & Carpenter, 2011).

However, one of the idiosyncrasies of grounded theory is that whilst there is broad consensus on some of the methodological necessities (explored in detail within Chapter 4), there is a great deal of disagreement on other issues. Grounded theory has a number of different 'schools', each stemming from the same core methodological foundations (the generation of theory from data being the primary one) but each with its own philosophical and procedural nuances (Morse, 2001). These variations between schools include specific standpoints on the issue of a researcher's theoretical naivety at the outset of a project. As a result, once a broad decision to utilise grounded theory had been made, further work was required to identify the school (or combination of schools) within which the study would be based. This decision depended on a range of factors, such as the area of study, the research aim, and the personal characteristics, experiences and beliefs of the researcher.

Grounded theory was first developed as a research method in the mid-to-late 1960s by Barney Glaser and Anselm Strauss, stemming from their sociological research into the care of dying patients (Glaser & Strauss, 1967). The fundamental philosophy behind grounded theory at its inception was, and still is, that theory can be generated from the collection and analysis of data. This simple but powerful idea offered an alternative to established methods of research rooted in the testing of hypotheses or simple description of phenomena. From a nursing perspective, grounded theory offered an opportunity to build theories that interpreted, explained, applied and predicted social and psychological processes within healthcare (Maz, 2013).

Despite being acknowledged as the 'parents' of grounded theory in the 1960s, Glaser and Strauss' relationship is also defined by their acrimonious split that was played out within the academic press. Since publishing the seminal work, 'The Discovery of Grounded Theory', Glaser (largely on his own) and Strauss (largely in partnership

with Juliet Corbin) have taken the theory in different directions (Higginbottom & Lauridsen, 2014). Though the core philosophy of theory generated by data remains intact across Glaserian and Straussian schools of grounded theory, important differences exist elsewhere; differences that impacted on the selection of which approach to the method to employ in this current study.

Glaserian grounded theory is seen by some academics as the 'purest' branch of the method, continuing to demonstrate many of the characteristics of the approach first outlined in 1967. Though Glaser has developed, expanded and clarified some of the ideas and concepts from the initial description of the method, the principle of an inductive approach to theory development remains the same (Heath & Cowley, 2004).

Strauss took grounded theory in a different direction. From a broad perspective, the work of Strauss and Corbin (1998) suggested an approach to theory development in which induction was less prominent and more dependent on deduction and verification (Heath & Cowley, 2004). In addition, the move away from Glaserian methods included the introduction of a range of analytical techniques that provided a clear framework and process for the development of theory from data. Pro-Strauss theorists argue that this makes the approach more transparent, more replicable, more robust and more accessible to novice researchers (Strauss & Corbin, 1998; Heath & Cowley, 2004). Those from the Glaserian camp accuse the detailed methodological steps as providing a recipe that will force data into preconceived categories (Charmaz, 2006).

From the viewpoint of selecting an appropriate method for this study, one of the important differences between Glaserian and Straussian grounded theory is their attitudes towards pre-existing knowledge of subject material. The emphasis of Glaserian grounded theory remains on theory being driven by data alone, with the

researcher striving to ensure that no preconceptions or existing knowledge of the subject area contaminate the data or lead to theory being forced in a particular direction. Straussian grounded theory takes a different stance, arguing that pre-existing knowledge can be a useful tool to the researcher by enhancing *theoretical sensitivity* - that is, supporting the emergence of categories from the data and facilitating a conscious effort to protect against bias (Hall & Callery, 2001).

Other differences between Straussian and Glaserian approaches, related to specific elements of the method, are discussed in subsequent chapters. However, the two divergent areas described above – analytical processes and pre-existing knowledge – all pointed towards a Straussian approach as being more suitable for a project carried out by a novice grounded theorist with previous experience and knowledge of the subject area.

The complexity of the decision-making process was increased further by the presence of a third broad school of grounded theory that takes a different philosophical direction. The Glaserian branch of grounded theory, by continuing to promote the traditional values of the method, is still perceived as being rooted in a staunchly positivistic world – the researcher is unbiased and passive, letting the data lead the way until 'truth' reveals itself (Charmaz, 2006). Strauss and Corbin's work is viewed by some as an evolution of traditional grounded theory, leaving some of Glaser's positivism behind and leaning towards a more interpretive paradigm (Mills et al., 2006). Nonetheless, there remains a view that Strauss and Corbin's beliefs surrounding grounded theory still represent an objectivist epistemology, in which the reality and the researcher are separate. In this 'objectivist grounded theory' the researcher can uncover knowledge from the data using analytical procedures, verify them and develop theory (Hildenbrand, 2007).

For some authors then, despite Glaser and Strauss going their own theoretical ways, both schools remain (though each to a different extent) overly reliant on an objectivist or positivist standpoint. In an attempt to offer a different epistemological positioning for the method, Charmaz (2000) proposed constructivist grounded theory, in which the fundamental philosophy of the method – that theory is generated from data – is supplemented by the broad belief that the researcher cannot be viewed as separate from the emerging findings.

Charmaz approaches grounded theory from an interpretive perspective and integrates the previous work of symbolic interactionists into her writing. The role of the researcher is not simply to collect data, identify emerging themes and generate theory. Instead, the researcher works with participants to construct a reality that is shaped by those it includes. Taking this view of the world, realities that are constructed during the course of a study will be as numerous as there are participants. Elements of these realities will be common across participants, but each is unique and dependent on context (Mills et al., 2006). The theories that result from this method are not static entities waiting to be discovered; they are flexible, dynamic and subjective constructs based upon the interactions and perspectives of participants, researcher and existing knowledge (Charmaz, 2006). On a practical note, related to the method chosen for this study, Charmaz recognised that researchers will bring their own experiences and knowledge into any field of study. Indeed, the construction of a grounded theory is dependent on the input of the researcher, interacting with participants to identify a contextually valid reality.

The fundamental differences between the schools of grounded theory could lead to each of three (Glaserian; Straussian; Constructivist) being compartmentalised and existing in its own epistemological silo. Each of these distinct approaches could be

seen as having its champions and its own broad philosophical standpoint: the Glaserian view of a traditionally positivistic approach, the post-positivistic (though still largely objectivist) work of Strauss and Corbin, and Charmaz's newer, constructivist approach. If this were the case, then the challenge at the outset of the study would have been to select one specific method that best matched the requirements of the study and the characteristics of the researcher.

However, Charmaz (2000) suggests that, in fact, the different approaches to grounded theory lie on a continuum between objectivist and constructivist standpoints. Similarly, Mills et al. (2006) describe a 'methodological spiral' on which all variations of grounded theory have their own place. As such, the choice of methodology for this study was more to do with where on the continuum or spiral to place the work, rather than choosing a single, inflexible approach.

The final decision on where the study should reside on the grounded theory continuum was part personal, part practical and part epistemological. From an epistemological viewpoint, previous experience of evaluating nurses' perceptions of, and roles in, teleconsultation services suggested a range of views. These seemed to depend on clinical context, personal experience, predisposition to technology generally and position within the organisation. This seemed to mirror the more interpretive and constructivist views that no single reality exists and is waiting to be discovered. Instead, with relation to the research question, nurses' use of teleconsultation would vary according to the individual participant, their background, personality and clinical focus. The challenge would therefore be to construct a grounded theory that might acknowledge and accommodate the similarities and differences of these multiple realities.

There was substantial overlap between the personal and practical factors that informed the choice of method. As a novice user of grounded theory, methodological clarity and guidance was crucial. From this perspective, the work of Strauss and Corbin (1998) was exceptionally useful. In particular, the range of analytical techniques on offer (or, in their own words, the smorgasbord for researchers to choose from) provided the clear direction required. The work of Charmaz (2000; 2006) provided clear guidance on how to construct grounded theory and how to explain its epistemological underpinnings. Both Charmaz (2006) and Strauss & Corbin (1998) accept (and often embrace) the role of the researcher as a theoretically sensitive individual who will bring foreknowledge to the field and whose interactions with participants can shape the final output of any work.

As a result, this grounded theory study will not adopt a Glaserian viewpoint, though some of the techniques described in the next chapter were evident in the very early stages of the method's evolution. Instead, the approach used will be best framed as constructivist grounded theory supplemented by some specific analytical tools from the Straussian school.

CHAPTER 3: SCOPING LITERATURE REVIEW

The place of the literature review in grounded theory

The previous chapter outlined the rationale for considering grounded theory as the most appropriate method for meeting the research aim and objective. The decision to use this method led to a dilemma about when and to what degree the existing evidence base should be reviewed – a common quandary within grounded theory (Dunne, 2011). The uncertainty regarding the timing and scope of the literature review stemmed from the perceived need for a 'purity of mind' with which researchers should embark upon sampling, data collection and analysis. Some grounded theorists suggest that the literature review should not take place until later in the study to ensure that the researcher approaches the collection of field data from a position of naiveté (Wright, 2011). This viewpoint is contrary to the process within most research methodologies, where a comprehensive review of the evidence in the subject area is completed prior to the commencement of data collection (Dunne, 2011). The question of when to explore existing literature linked to the challenges of utilising a grounded theory approach in an area where the researcher already had substantial experience and knowledge – challenges discussed in more detail within the previous chapter.

Researchers' positions on this issue depend to a large extent on which school of grounded theory they advocate. The previous chapter has explored the well-documented methodological divergence between Glaser and Strauss and the impact this had on the processes behind the completion of grounded theory studies. In terms of the literature review, 'traditional' grounded theory as advocated by Glaser requires the researcher to limit the amount of previous evidence that they review prior to commencing fieldwork. Instead, an in-depth review of the literature should only be

commenced later in the research process (Heath & Cowley, 2004). Glaser (2009) argued that by remaining initially naïve of previous works in the area of study, the researcher can remain open to emerging theory without distraction or preconceptions.

Though Strauss advocated a similar view in the early days of grounded theory, it changed over time to a position of supporting an early review of the literature - indeed, this shift in position was one of the disagreements that led to the split with Glaser (Dunne, 2011). Contemporary Straussian grounded theory accepts that an understanding of previous literature can be useful: it can help in the development of interview questions, can inform sampling and can sensitise the researcher to themes emerging from the fieldwork data (Strauss & Corbin, 1998). Nonetheless, Strauss and Corbin (1998) stressed that the researcher needs to let the literature enhance their analysis of field work data, rather than constrain it. From a constructivist perspective, Charmaz (2006) provided a pragmatic solution to the quandary of how and when to delve into existing literature: she recognised that researchers will often commence grounded theory research with a sophisticated knowledge of the existing evidence base in the area of study. However, once the research question has been produced and data collection/analysis begun, this knowledge should 'lie fallow' until categories have begun to emerge from the data. This approach to appraising the literature also recognises that at the outset of any grounded theory study, it will not be possible to predict all the literary avenues to explore; only once findings emerge will it become clearer what literature should be examined as part of the analytical process.

A passionate riposte to the idea of a grounded theory researcher setting out on fieldwork without having carried out some type of literature review came from Lempert (2007:254): "A literature review provides me with the current parameters of the conversation that I hope to enter… [It] alerts me to gaps in theorizing...It does not,

however, define my research." Thornberg (2012) also critiqued the principle of delaying of any literature review, highlighting the potential folly of overlooking existing knowledge before embarking on a study. Doing so might lead any researcher to put great effort into an area where substantial knowledge already exists, 're-invent the wheel' or repeat past mistakes. Commencing a study without having completed any review of the literature also risks encouraging a pretence of being completely naïve of existing knowledge, leading in turn to implicit preconceptions and beliefs. A transparent approach to understanding previous knowledge will shine a light on a researcher's starting point, promote reflection and protect against subliminal forcing of theory (Thornberg, 2012).

After analysing the strengths and weaknesses of an initial review of the evidence, and having already adopted a more flexible, less Glaserian approach to grounded theory, a middle path was taken. It was deemed necessary to explore the literature to some degree, partly to meet the requirements of a Doctoral study proposal, but also to help demonstrate the value of this area of study, inform any further development of aims, objectives and questions, and confirm the appropriateness of the chosen methodology (McGhee et al., 2007). It was also considered unrealistic to assume that avoiding a literature review would allow the study to commence with no existing knowledge: the previous chapter has already outlined the work completed in this broad area of practice prior to commencement of the current study. In this context, it was felt impractical and disingenuous to avoid a literature review in an attempt to be seen as entering into the study area as a completely blank canvas, with no history or pre-existing knowledge – a point highlighted previously by other grounded theorists (Cutcliffe, 2000).

The middle path chosen required establishing parameters for a targeted, scoping literature review. This review would not attempt to explore every avenue that may link

to the study area; nor was it designed to steer the study down specific routes and pre-empt findings from participants in the field. Instead, the review was designed purely to ensure that the selected study area and method were appropriate. The review was designed specifically to answer two questions;

1) Is teleconsultation an important and prevalent enough element of nursing practice to justify an attempt at developing a grounded theory?

2) Does a comprehensive understanding of nurses' roles within teleconsultation already exist, thereby invalidating the need for development of a grounded theory?

By answering these two questions, it was also anticipated that pre-existing knowledge of teleconsultation would be supplemented. An ancillary aim of the review was therefore to enhance theoretical sensitivity to potentially important issues prior to data analysis.

Once these initial questions had been answered, the review remained 'live' for the duration of the study. It was continuously and purposively revisited as the project developed, using existing literature as a source of data that was compared with field findings and contributed to the shape of the final grounded theory (Strauss & Corbin, 1998). Also important was frequent reflection on how findings from the review might have been influencing the study design. This reflexivity mitigated the risk of developing preconceptions before embarking on the collection of primary data in the field (Dunne, 2011).

Method

Literature related to the use of teleconsultation was searched for in nursing, medicine and healthcare databases, specifically CINAHL® and PubMed® (with the latter incorporating findings from MEDLINE®). An online search of grey literature (such as teleconsultation service evaluations) was carried out via internet search engines. Google Scholar was utilised to identify any additional literature, such as online theses.

Given the lack of consensus on the taxonomy of technology-mediated, remote care services, an iterative approach to literature searching was utilised. Rather than setting rigid search parameters at the outset, the search terms and processes evolved over time (Walsh & Downe, 2005). The search commenced with broad, truncated, technology-related terms linked to nurses through the Boolean operator 'AND' (e.g. tele* AND nurs*; video* AND nurs*). However, this approach was not sufficiently specific - on CINAHL® alone, a search for tele* AND nurs* yielded 9753 articles. Though some did include reference to teleconsultation, many more were focused on the use of the telephone, telehealth more broadly or the portrayal of nurses on television.

To address this, subsequent search terms increased in specificity. For example, use of the very broad tele*, was changed to more focused search terms such as 'telemedicine' or 'teleconsultation' in partnership with nurs*. Using CINAHL® as an example, this provided a much more focused, workable and specific range of results (e.g. teleconsultation AND nurs*=22 results; telemedicine AND nurs*=856 results). In an attempt to identify any additional literature that was not contained (or found) within the chosen databases, references from, and citations of, included articles were followed up and evaluated (Papaioannou et al., 2009).

No time restrictions were placed on publication dates, nor were there any geographical publication criteria. However, only articles written in English were included. Articles were included that described occasions on which RNs were participants in studies, projects or services that required the use of video-mediated interaction with patients. In addition, included studies needed to explore the views, perceptions and/or experiences of nurses within these applications of technology. From a technological perspective, the inclusion criteria were left relatively broad in the first instance. This was to allow for the identification of any relevant knowledge in areas that had parallels to teleconsultation, such as remote monitoring and telephone triage. Studies of these tangential technologies are discussed where they raised issues that were transferable to some of the characteristics of teleconsultation.

Studies that explored only the views of patients, carers or practitioners other than RNs were not included in the review. In addition, studies that focused only on the clinical and/or cost outcomes of technology-mediated interventions were not explored in depth. However, the high-level findings from some of these articles are described briefly below, by way of providing context.

Findings

The literature search yielded evidence that fell within three categories. Firstly, there was work that focused on the feasibility, acceptability and effectiveness of teleconsultation (though much of the literature used the term *telemedicine* for reasons discussed in more detail within Chapter 1) in a range of different clinical areas. This work linked to a tangential but relevant body of evidence that focused not on teleconsultation, but on other modalities of care where technology was being utilised to allow the provision of care in situations where not all agents were physically

proximal. Secondly, literature focused on nurses' experiences of using teleconsultation, and on the organisational factors that drove or restricted their adoption and acceptance of new approaches to care. Finally, some literature was found that provided more philosophical and theoretical analysis of the implications of providing nursing care remotely via video.

Use of teleconsultation in different clinical contexts

Despite having been in use at small scale and in niche areas for many decades, the use of teleconsultation can still be considered innovative and novel in the broad healthcare context. Nonetheless, the literature review suggested that its use had spread to a wide range of different clinical specialities. Overall, the evidence pointed to three distinct categories of use. These linked to some extent to different clinical needs (acute care; primary care or outpatient clinic follow-up; long-term condition management), but were also characterised by the agents within teleconsultations having different roles and responsibilities.

Use of teleconsultation to support acute care

A substantial proportion of the literature was devoted to exploring the feasibility and effectiveness of teleconsultation in supporting the care of patients with acute, emergency or critical care needs. Of this group, the most notable area of clinical practice in which benefits were identified was the management of acute stroke. Specifically, this related to the use of a hub-and-spoke model of teleconsultation that allows neurologists in a specialist centre (the hub) to remotely assess patients presenting to other, more general, hospitals (the spokes) with symptoms of stroke. By doing so, a decision as to whether a patient is a suitable candidate for treatment with thrombolysis (medication that promotes the break-up of the culprit blood clot) can be

made in a timely manner (as a further nuance of the taxonomy of telehealth, this innovative method of service delivery is sometimes called *telestroke*). Randomised controlled trials, notably STRokE DOC (Demaerschalk et al., 2012), have demonstrated evidence of clinical benefit, leading to teleconsultation being recognised as an effective modality for acute stroke assessment by the American Heart Association (Schwamm et al., 2009). Nurses' roles within telestroke services vary between organisations, but incorporate a range of clinical and administrative functions, such as patient assessment, family support, management of resources and drug administration (Rafter & Kelly, 2011). One of the key characteristics of the nurses' role during stroke teleconsultation is that they are usually physically proximal to the patient, acting as a facilitator of the video-mediated interaction between neurologist and patient.

Elsewhere in acute care, the evidence base has not reached the maturity that is apparent within telestroke. However, there have been some studies and reviews that show the potential for video-mediated care to provide organisational and clinical benefits in areas such as trauma management (Latifi et al., 2009), emergency department triage and assessment (Keane, 2009), burn care (Barrett et al., 2013), minor injuries (Mair & Ferguson, 2011) and pre-hospital medical services (Skorning et al., 2011). One context in which there has been particular interest in the role of teleconsultation to support acute assessment and management is in prison healthcare. Distance and maintenance of security make transportation of unwell or injured prisoners to hospital particularly challenging. As a result, there have been numerous reports in the literature of teleconsultation being utilised to connect prison medical centres and EDs, facilitating remote assessment and reducing the need for transfer (Mekhjian et al., 1996; Fox et al., 2007).

The works cited above all described the potential or actual organisational benefits of using teleconsultation. Many of them also began to explore some of the added value of using video as a mediator of interactions, as compared to the more traditional use of the telephone. However, most of them did not delve into the professional or therapeutic implications of providing care without physical proximity to the patient. Equally, these works provided little or no detail of the specific roles played by nurses during their interactions (or the interactions of others) with patients.

An area of acute care where there has been some more detailed work on outcomes, acceptability and the role of nurses is in relation to teleconsultation to support intensive therapy and care. Though models of delivery can vary, most services (sometimes termed 'tele-ICU') rely on video-mediated communication between highly specialised critical care practitioners and 'bedside' practitioners. This therefore provides frontline clinicians with expert support and advice either from within a central point in their own hospital or from a geographically remote centre (Williams et al., 2012).

A number of studies demonstrated the feasibility and potential clinical benefits of teleconsultation in the intensive care environment (Lilly et al., 2011; Kohl et al., 2012). Additionally, work was identified that addressed the organisational, professional and inter-professional implications of using teleconsultation in this context. Goran (2012) provided an opinion-based overview of the opportunities and challenges presented to nurses through the use of teleconsultation to support intensive care practice. The review recognised the opportunities for career progression and skill development that the provision of remote care offered to nurses. However, the work also identified that there could be a culture of resistance to technological developments in care and a risk of 'identity loss' in those nurses who made a move away from providing hands-on care (Goran, 2012).

Mullen-Fortino et al. (2012) used an online survey to explore bedside nurses' perceptions of the introduction of video-mediated support in intensive care units. Specialist intensive care clinicians were available via video-link to support the delivery of care and enhance patient safety. Though the survey suggested that bedside nurses recognised the potential clinical benefits, there appeared to be some reluctance to engage with the new service and a desire to only get video-mediated support from clinicians with whom an existing relationship was present (Mullen-Fortino et al., 2012). Similarly, a qualitative study of staff acceptance of Tele-ICU identified a number of factors that could act as barriers or facilitators, including technical issues and the availability of training (Moeckli et al., 2013).

In pre-hospital acute care, one area of clinical practice which has parallels with teleconsultation but provides a more mature evidence base is the use of the telephone as a modality for offering remote patient triage. Use of the telephone provides some of the same challenges that are faced by nurses involved in teleconsultation (notably the remote nature of the intervention, the inability to touch the patient and the lack of certain non-verbal cues) but has been used as a medium for nurse-patient interaction at a much larger scale for many years.

Interest in the role of nurses using the telephone to support remote triage has been evident in the literature for some time, but came to particular prominence in England and Wales in 1998 with the launch of NHS Direct (NHSD); a national telephone triage service staffed by a combination of unregistered advisors and RNs (Snelgrove, 2009). NHSD was replaced as a provider in 2013-14 by the '111' service, though the operational goal – to provide a telephone-based national triage service – remained the same. The aspect of the evidence base linked to NHSD/111 which has the most relevance to this current study is how a role which, by definition, requires remoteness

and lack of visual or physical contact with the patient, affects the activities and professional identity of nurses.

Snooks et al. (2008), in a study exploring the work of nurses in NHSD, found evidence of role tension, identifying 'differences' between telephone-based consultations and traditional face-to-face care. Whilst some participants questioned whether telephone-enabled care was 'real' nursing, others highlighted the ability to forge relationships with patients without the need for face-to-face interaction. Purc-Stephenson and Thrasher (2010) explored nurses' experiences of telephone triage services through a meta-ethnographical approach. A key finding was the way in which nurses overcame the lack of visual cues and built a holistic picture of patients through enhanced listening and questioning skills. Pettinari and Jessopp (2001), also exploring nurses' roles within NHSD, similarly identified a range of compensatory mechanisms that nurses developed when stripped of all sensory cues other than sound. These mechanisms included listening for background sounds, assessing tone of voice and modelling body location to construct a visualization of the remote patient and their healthcare needs.

Previous literature related to the provision of clinical triage via the telephone provided some clues to how acute care nurses may experience the introduction of teleconsultation into their role. As such, it was of some use in enhancing theoretical sensitivity prior to commencement of data collection. Some of the key issues related to the similarities between telephone triage and teleconsultation. For example, there are parallels to be drawn through nurses needing to compensate for the removal of sensory cues such as smell and touch. Equally, there may be some similarities in the requirement for nurses to develop new skill sets that enable high quality therapeutic relationships to be formed despite a lack of physical proximity. Some important issues

also stemmed from the *differences* between the two modalities of care. The use of video as the medium for interaction in teleconsultation provides a step-change from telephone contact: nurses will have visual cues not available via the telephone, thereby potentially providing an additional dimension to the nurse-patient relationship and clinical assessment. The availability of visual cues therefore allows for the expansion of teleconsultation into other acute clinical contexts, described earlier, for which telephone triage is not feasible, such as the direct assessment of acute wounds or burns.

Supporting the delivery of primary care and outpatient clinics

In principle, teleconsultation offers an attractive solution to the challenges associated with the provision of clinic-based activities. Many of these clinics require a minimal amount of physical assessment or touch and many traditional clinics require patients and/or practitioners to travel substantial distances. As a result, many applications of teleconsultation described within the literature related to its use within the clinic setting. A number of different models have been cited. In some cases, clinics were facilitated between a practitioner in a 'hub' specialist centre and a patient (with or without a proximal nurse) in a 'spoke' hospital or health centre. This model has been utilised in contexts such as geriatrics (Esterle & Mathieu-Fritz, 2013), renal dialysis (Whitten & Buis, 2008), support for people with multiple sclerosis (Zissman et al., 2011) and sexual health clinics (Mabragaña & Carballo-Diéguez, 2013).

In some of these applications of teleconsultation, nurses were physically proximal to the patient when carrying out their roles. For example, in the primary care teleconsultation service described by Torppa et al. (2006), nurses made up one element of a nurse-patient-doctor triad. Situated next to the patient, the nurses' role was to offer technical support and act as an intermediary between the physically remote doctor and

patient. On occasions the nurse would also act as a 'pair of hands' for the doctor, to assist with, for example, physical examination of the patient. This role of the nurse as the proximal practitioner during teleconsultation clinics has been explored elsewhere in the literature. Esterle and Mathieu-Fritz (2013), in a qualitative analysis of a teleconsultation service linking two health settings, highlighted how the remoteness of certain agents during teleconsultation changed the dynamic of professional interaction. Those specialist physicians who were remote from patients during consultations were required to delegate more tasks to the practitioners – including nurses – who were physically proximal to the patient. This alteration in role definition offered opportunities for professional development for practitioners, but also provided challenges that required close co-operation and mutual confidence. Aas (2001), in a qualitative study of the implications of implementing teleconsultation into practice, identified how new services required the development of adapted job roles and descriptions, alongside organisational reform and changes to infrastructure.

Though there seemed to be a broad consensus that the introduction of clinic-based teleconsultation altered the role of nurse, there was less agreement on whether these changes should be considered beneficial for individual practitioners and the profession as a whole. For some, the role of the nurse as a proximal actor during a teleconsultation (whether in the clinic or acute setting) was an opportunity for role expansion and enhanced autonomy (Armer, 2003; Gerrard et al., 1999). Others, however, suggested that the use of a nurse as a 'pair of hands' by medical staff at the other end of a video-link merely served to reinforce long-held stereotypes of nurses acting as doctors' handmaidens (Sandelowski, 2002).

Teleconsultation to support patients in their place of residence

Away from acute care and formal clinic settings, evidence was found that teleconsultation involving nurses provided organisational and clinical benefits for patients in the community. Steel et al. (2011) carried out a systematic review of literature related to the use of video in community settings to provide therapeutic interventions for patients with chronic conditions. The review encompassed 35 articles from different types of clinical settings and with patient groups that included those with mental health problems, cancer and diabetes. The review concluded that outcomes appeared to match those of face-to-face interactions and that levels of patient satisfaction were high. However, there were also suggestions that technical issues could limit the effectiveness of teleconsultation and that clinical staff tended to demonstrate lower levels of satisfaction than patients (Steel et al., 2011).

Edirippulige et al. (2013) focused their systematic review more specifically on the use of video-mediated interaction with patients in long-term care facilities. The 22 studies included within their review once again demonstrated the wide range of clinical contexts in which teleconsultation had been utilised, including dermatology, psychiatry and neurology. The review concluded that the evidence base demonstrated the feasibility of using teleconsultation to support community care in many different clinical specialities, but also highlighted the relative immaturity and equivocality of the evidence base.

An evaluation of a teleconsultation service focused on supporting residents in nursing and care homes, suggested high levels of user satisfaction and a reduction in acute care admissions (Barrett, 2013a). A qualitative, interview-based study by Sevean et al. (2008) also demonstrated a positive impact on patients and their families when

teleconsultation was used to support community-based patients in rural Canada. Similarly, Sorknaes et al. (2011) described a non-randomised intervention study of the use of 'telemedicine video consultations' between respiratory care nurses and patients recently discharged from hospital following exacerbation of COPD. The study found that the intervention proved popular with patients and was associated with a 10-14% reduction in the early readmission risk when compared with control (n=50 in each group). However, the equivocal and complex nature of the evidence surrounding some teleconsultation interventions was reinforced by the results of a follow-up randomised controlled study of an almost identical intervention, with a larger sample, by the same core research team. In this trial, with 266 participants (132 randomised to the teleconsultation group, 134 to control), provision of one-week's nurse-led teleconsultations for recently discharged COPD patients had no significant impact on readmission rates (Sorknaes et al., 2013).

Nicolini (2006) completed a grounded theory study of the impact of using technology to provide remote support for heart failure patients in Northern Italy. Some of the study focused on enhancing the documentation of care via the introduction of an Electronic Patient Record (EPR), but there were also some specific findings related to video-mediated interaction with, and remote monitoring of, patients. Of particular interest were findings that described how teleconsultation services led to a redistribution of workload, enhanced the skills of some professional groups and prompted changes to the organisational structure of healthcare delivery.

Similar work was reported by Van Gurp et al. (2013), who carried out a grounded theory study of the use of teleconsultation in palliative care. The work did not focus purely on nurses, instead sampling different members of the multidisciplinary team. The study also cast its net much wider than teleconsultation alone, including telephone

communication within the intervention. Though it was a broad area of study, the findings raised issues that enhanced theoretical sensitivity within this current study – notably the opinions of some participants that teleconsultation was not the same as 'real contact' and the fact that using technology as a medium may impact on the dynamic of the practitioner-patient relationship (Van Gurp et al., 2013).

The work of Van Gurp and colleagues gave one insight into the use of teleconsultation within palliative care. Elsewhere, there are reports of video being used to mediate interaction between dying patients in their place of residence and remote practitioners based within institutional healthcare settings. Johnston et al. (2011) provided an overview of the role of telehealth within palliative care in Scotland, based on findings from patient, carer and professional focus groups. With particular reference to teleconsultation (termed *videoconferencing and webcams* within the paper), the authors highlighted the potential to overcome the challenges of geography and reduce travel requirements for practitioners, terminally ill patients and their carers. However, the work also highlighted the need to try and integrate core characteristics of palliative care such as familiarity, face-to-face contacts and 'the personal touch', into technology-mediated remote care (Johnston et al., 2011).

In a case study of teleconsultation at the last stages of life described by Low et al. (2013), the potential for video to support care even at this most emotive and challenging point in the patient pathway was demonstrated. Of particular interest was the suggestion that teleconsultation could support the drive towards facilitating 'dying in place' – i.e. allowing people to receive the care and support that they need to die at home, with their loved ones around them (Hoverman, 2011). However, the authors also highlighted the challenges of utilising teleconsultation in this context, suggesting that the modality of care would "…never be anywhere close to real physical touch and

the presence of a human being" (Low et al., 2013:355). In essence then, teleconsultation is framed by Low and colleagues as being 'better than nothing' in the context of supporting palliative patients at home.

In a piece of work that explored a different clinical area but focused more closely on the role of nurses, Hibbert et al. (2004) carried out an ethnographic study of health professionals' responses to the implementation of a home telehealth service. The intervention, which was carried out as part of a randomised controlled trial, included both telemonitoring and teleconsultation elements designed for patients discharged from hospital following exacerbation of COPD. Patients at home recorded and transmitted daily vital signs such as blood pressure and oxygen saturations; home visits and telephone calls from specialist nurses were replaced with consultations via video-phone link. The researchers observed the work of 12 nurses, taking field notes and recording views and opinions of the participants in relation to teleconsultation.

The study highlighted the potential of teleconsultation to provide a better service than that which could be delivered by the telephone alone. However, nurses also highlighted substantial technological limitations, such as 'lag' in transmission times and poor picture quality. Though this finding reinforced the importance of reliable and high-quality technology, it should also be acknowledged that the intervention was carried out between 2001 and 2003, since which time teleconsultation technology has improved substantially. The findings that had the most significance in relation to contemporary nursing practice are those that related to the principle of teleconsultation itself, with some participants having suggested that the use of video as a mediator could undermine professional credibility and act as a barrier to development of the nurse-patient relationship (Hibbert et al., 2004).

More recently, Nilsson et al. (2010) described how district nurses were able to provide enhanced care through the use of technology-mediated services such as teleconsultation. Nurses described ICT as a facilitator of care, highlighting how it could enhance their accessibility to patients and enable better prioritisation of workload. The work also described how nurses highlighted doubts about the ability of ICT to replace home visits and identified initial concerns regarding lack of training and the frequency of technical problems.

Professional and organisational issues

Though much of the literature related to nurse-led teleconsultations focused on outcomes and user experiences, there have been some attempts to explore more deeply the impact of video-mediated interaction on the role of nurses. Sävenstedt et al. (2004) completed a phenomenological study of nurses who led teleconsultations with older adults in nursing homes. Based upon interviews with seven staff members, the study provided some useful insights into how video could allow nurses to achieve a sense of presence, despite being physically distant from their patient. The work was based on one specific use of teleconsultation in one specific context and cannot therefore be seen as offering an overarching picture of how teleconsultation affects the role of the nurse in general. However, it raised a number of key areas for further study in a wider context, such as the degree of presence that can be achieved via video, the need (or not) for existing familiarity in a teleconsultation and the impact of repeated interactions.

In a follow-up study focused more specifically on the video-mediated conversations between nurses and elderly nursing home residents, Sävenstedt et al. (2005) recorded and analysed 22 teleconsultations. Once again, by focusing on a single-site service,

there were limitations to the generalizability of findings. However, some of the issues raised, such as the importance of gaze and the role of the physically proximal 'third party', are transferable to other applications of teleconsultation and to the development of a substantive grounded theory.

Away from primary research and evaluation of actual teleconsultation services, some academics have attempted to tackle the concept of video-mediated nursing at a more philosophical level. Sandelowski (2002) considered how the growth of teleconsultation linked to the shrinking importance of the 'fleshy body' and how nursing care was challenged by a move towards physically remote interactions. Though the paper contextualized the growth of virtual nursing and posed a number of questions, it was not able to draw specific conclusions. Indeed, the work called on the profession to reconceptualise areas of practice such as presence, place and bodies – a challenge that this thesis and the resulting grounded theory looks to meet. Similarly, in a broader discussion of nurses and technology, Barnard (2002) highlighted the need for greater understanding of the impact that being physically remote from patients can have upon nurses' ability to provide care.

Another area of interest highlighted by the literature review is that nurses and other professionals encounter a range of factors that will drive or limit their adoption and acceptance of teleconsultation services. Moffatt and Eley (2011) completed a study exploring the factors that slowed adoption of teleconsultation in Australia. Key issues, described by expert providers of services, were technical, organisational and personal factors (such as resistance to change) that could impact on development and implementation of services. Though old in technological terms, the study by Gerrard et al. (1999) highlighted the need for comprehensive training programmes to support

adoption and identified the dangers associated with nurses being expected to act as 'teleconsultation technicians'.

Conclusions

The purpose of the scoping literature review was firstly to establish whether teleconsultation was a sufficiently prevalent modality of nursing care to justify further study. The second review question was to identify whether previous work had already established a generalizable and evidence-based theory to explain the role of the nurse within teleconsultation.

When all the literature was brought together, the answer to the first review question was 'yes'. There is growing evidence that teleconsultation can provide organisational and/or clinical benefits in a number of different contexts. Operationally, this has led to video-mediated interaction being trialled, piloted and adopted in a wide range of settings. Given that the drivers for adopting teleconsultation, such as centralisation of specialist services, healthcare spending austerity and greater emphasis on community care, are likely to remain in existence for some time, prevalence of this modality of care is likely to increase further. Therefore, it is important to have an understanding of what this means for individual nurses and the broader profession.

In terms of the second review question, there was no evidence that a coherent, generalizable theory of teleconsultation and nursing has yet been developed. Much of the evidence discussed above has identified that there are alterations in patient-practitioner and inter-professional relationships when delivering care remotely via the medium of video. There were also some indications that these alterations may prove threatening to practitioners, thereby acting as a barrier to acceptance and adoption. From a nursing perspective, it seemed clear that teleconsultation impacted on the

therapeutic alliance with patients and altered the scope and autonomy of the professional role. Overall then, it is clear that using video to mediate the delivery of care does impact on many different elements of the nursing role. However, much of the literature that explores this impact is based on single-site research projects or service evaluations. Though they therefore provided useful and potentially transferable insights (and therefore enhanced theoretical sensitivity prior to primary data collection and analysis) these studies have not yet allowed for a broader theory of teleconsultation and nursing to be developed. There are some broader lessons to be learnt from related modalities of care, notably the use of telephone-based triage by nurses. However, though these approaches to care mirror the remoteness that also characterises teleconsultation, the differences – notably the availability of visual cues – meant that findings were not directly transferable.

By identifying that teleconsultation affects the nurse-patient relationship, organisational dynamics and professional roles, the scoping literature review justified the need for this study. The relative immaturity of the evidence base and the lack of a broad theory to explain the impact of teleconsultation also provided support for the use of a grounded theory approach to build a theory from primary data. There is the danger that by identifying key issues from previous work, the review will have biased the collection and analysis of data. However, by being cognisant of this risk and by using the findings only to enhance theoretical sensitivity to emerging issues – rather than forcing their emergence - this danger was mitigated.

Though it was not published at the time of the initial search, an important footnote on the current state of the literature surrounding teleconsultation came from a recent scoping review by Fatehi et al. (2014). Their literature review on the clinical application of videoconferencing described a growing body of evidence, with over 500

papers published between 2002 and 2012 meeting their inclusion criteria. The selected papers described a range of different clinical applications, establishing feasibility and acceptability across a number of specialties and patient groups. However, like the scoping review described in this chapter, the authors concluded that there was a lack of transferability between findings from different studies. Not only did they advocate the need for further, high-quality testing of clinical outcomes, but they also suggested that work is required to identify and explain the key concepts of teleconsultation (Fatehi et al., 2014).

Overall, the scoping review of the literature surrounding teleconsultation provided clear and conclusive answers to the two review questions. It is clear that teleconsultation is a modality of care growing in scope and scale. It is used by nurses, either whilst they are physically proximal to their patients or remote from them. Whatever their proximity, the use of video as a medium to support care impacts on the professional role of the nurse and their relationship with patients, families and other practitioners. What is less clear is exactly how these elements of practice are impacted upon; whether they promote or restrict the development of the therapeutic relationship; whether they expand or constrain the role of the nurse.

The existing literature provides some useful clues to the impact of teleconsultation on the role of the nurse. However, it also leaves space for a substantive theory that explains nurses' roles within teleconsultation across different healthcare settings, patient groups and clinical specialties. It is that space which this study seeks to fill.

CHAPTER 4: METHOD

Chapter 2 explored the decision to adopt a grounded theory approach and outlined the particular school and elements of the method that would be incorporated within the study. Regardless of the school of grounded theory most closely aligned with, the approach is defined by a number of specific methodological characteristics that come together to support the emergence of theory from data. McCann and Clark (2003) listed seven characteristics that should be explicit in a study method for it to be considered grounded theory;

- Theoretical sensitivity

- Theoretical sampling

- Constant comparative analysis

- Coding and categorisation of data

- Theoretical memos and diagrams

- Literature as a source of data

- Integration of theory

(McCann & Clark, 2003:10)

In addition, the concept of 'theoretical saturation' as an influencer of sample size (Glaser & Strauss, 1967) will be included as an eighth defining characteristic. Acknowledging and embedding these characteristics within the study was a crucial element of planning. Without demonstrating how these techniques and concepts have been incorporated into the development of theory, studies may be interpreted simply as generic qualitative work labelled as grounded theory (Timmermans & Tavory, 2012).

Some of the defining characteristics of grounded theory have been touched upon in previous chapters. Theoretical sensitivity – the ability of the researcher to recognise and develop theory as it emerges from the data (Glaser & Strauss, 1967) – was partially developed prior to the commencement of the study through previous experience in this area, as outlined in Chapter 2. The scoping review of literature in the initial stages of the study (partly to enhance theoretical sensitivity) was explored in the previous chapter, though the use of literature as a source of data during the subsequent analytical elements of the work will be discussed later.

The other six characteristics of grounded theory will be identified through the course of this chapter's exploration of the research method. Though each is found in grounded theory generally, each varies in detail according to the school (or schools) of the method adopted. Elements of the research method were therefore closely related to the procedural guidance of Strauss and Corbin (1998), but with the philosophical underpinnings of constructivist grounded theory, as described by Charmaz (2006).

Theoretical Sampling

The use of theoretical sampling was a central tenet of Glaser and Strauss' initial description of the grounded theory method and has remained so throughout all the various methodological and epistemological evolution that has taken place in the decades since. Theoretical sampling involves the emerging theory directing the researcher towards the sources and type of data they should be looking for next (Glaser & Strauss, 1967). This approach supports the further development of the emerging categories and theory by allowing the researcher to "…choose those avenues of sampling that can bring about the greatest theoretical return." (Strauss and Corbin, 1998: 202).

Given that theoretical sampling is driven by the findings that emerge from data, its use offered a challenge with regard to the initial sampling of participants for this study. At the outset of the work, there was no emerging theory to direct theoretical sampling, only an understanding of the subject area underpinned by previous experience and the scoping literature review. A separate strategy was therefore required to identify participants that could provide initial data, begin the process of theory emergence and subsequently facilitate theoretical sampling. Charmaz (2006:100) encapsulates the differences between these two stages by suggesting that "initial sampling is where you start…theoretical sampling directs you where to go." The terminology to describe this first stage of sampling varies between authors. Whereas Charmaz discussed 'initial' sampling, Morse (2007) described using convenience sampling at the outset of grounded theory projects. Draucker et al. (2007) explored the use of 'selective sampling', in which populations and settings are identified ahead of any data collection during the early stages of grounded theory studies. Only once data begin to be collected and analysed will concepts begin to emerge; it is at this point that the researcher decides to move from a selective to a theoretical sampling technique (Draucker et al., 2007). This description best encapsulates the process utilised within this study, so the term 'selective sampling' will be used to describe the initial stages of participant identification.

The formal two-phase approach to sampling (selective/theoretical) chosen for this study was a variation on the traditional method of theoretical sampling advocated by Strauss and Corbin (1998). However, the initial phase of selective sampling ensured that a wide spread of experiences and perceptions were captured, allowing for the emergence of early categories from a holistic and comprehensive dataset. Indeed, given that the selective sampling of the first phase was underpinned by theoretical

sensitivity gained from previous experience and existing literature, it was, arguably, rooted in the principles of theoretical sampling.

The first stage of the sampling process was to develop a pool of potential participants. This provided an initial group of study participants from whom selective sampling could take place prior to any data collection and analysis. Thereafter, the pool of participants was used to support theoretical sampling: as data were collected and analysed, the next appropriate participant was sampled from the pool.

Selective sampling was based on recommendations from Thompson (1999), who wrote about experiences of carrying out qualitative research into nurses' decision-making. Though exploring a different area of practice to this study, Thompson's strategies of sampling participants who came from a range of clinical settings, with specific role descriptors and different levels of experience, all appeared transferable to the context of teleconsultation. Previous work in this area had suggested that teleconsultation was used in different clinical areas, in different ways and by nurses from different practice backgrounds. As a result, it was decided that the initial pool of participants, from which selective sampling would take place, should include nurses that encompassed these different roles and backgrounds.

The initial pool was developed using a selective, criterion-based approach. Inclusion criteria were developed, based on the findings of the scoping literature review and on the categories for selection suggested by Thompson (1999). In addition, the inclusion criteria reflected the parameters of the study as outlined in Chapter 2. It was anticipated that the criteria would provide a range of potential participants who would allow for initial selective sampling, but who may also be utilised during subsequent theoretical sampling.

Specifically, participants needed to be RNs who had experience of using teleconsultation in one or more of the following ways;

- Interacting with a remote patient who was in their own home, either alone or with one or more non-clinicians (e.g. a family member)

- Interacting with a patient who was in a remote clinical setting with another (possibly non-specialist) clinician - e.g. supporting healthcare in prisons or residential homes

- Being with a patient whilst they took part in a teleconsultation with another, remote clinician (e.g. virtual clinic, ward round or supervised procedure)

Brief details about the study were circulated to staff in areas where teleconsultation was known to be an element of care delivery. This information had been gathered through existing networks, through the findings of the scoping literature review and through internet search engines. Once an area of practice had been identified, the manager was contacted and asked if they would circulate the information around any staff who met the inclusion criteria. Interested parties were asked to contact the researcher either by telephone or email. On doing so, they were asked some brief questions regarding their current role, their position within the organisation (e.g. level of seniority) and the manner in which they used teleconsultation (e.g. whether they were remote from, or with patients during interactions). Summary information and contact details were stored electronically and potential participants were informed that they may or may not be sampled as the study progressed.

The initial trawl of potential participants identified nurses from a range of clinical areas who had utilised teleconsultation in different ways. The pool included nurses

who used teleconsultation to support prisons healthcare, burn care, stroke management and the support of people with long-term conditions such as diabetes. Some of the potential participants only took part in teleconsultations from the 'patient end' – that is, they were physically with the patient whilst a remote clinician interacted with them. Others had only used teleconsultation to interact with patients who were remote from them. Some used teleconsultation as one small part of their role; for others, their role was designed around the delivery of video-mediated care. This breadth of experience meant that the initial pool provided ample choice to commence selective sampling.

As data collection and analysis proceeded, the pool of potential participants was extended and expanded in response to the themes emerging from early data. One of the simplest methods used to grow the pool was to ask participants to suggest colleagues who may have also been interested in taking part – an approach often known colloquially as 'snowball' sampling (Holloway & Wheeler, 1996). As an additional mechanism for maintaining a supply of potential participants to facilitate theoretical sampling, the study was publicised through social media. Specifically, a call for participants was made through the University of Hull's Centre for Telehealth Twitter feed (@TelehealthHull) which, at time of the study, had approximately 1000 followers. In total, 27 potential participants were recruited to the pool.

All potential participants who were identified and added to the pool were provided with an electronic copy of the study information leaflet (appendix B). This leaflet outlined the purpose of the study and the expectations associated with being a participant. Accompanying the information leaflet was an electronic version of the consent form (appendix C). Once completed, this could either be returned via email (with an electronic signature) or in hard copy (a stamped addressed envelope was provided upon request). Completion and return of the signed consent form was a pre-

requisite for telephone, video or face-to-face interviews taking place. As part of this recruitment and consent process, participants were provided with a participant number (e.g. TC01), which remained with them throughout the project and with which they are linked to direct quotes throughout the remainder of this thesis.

For the first tranche of sampling, five nurses from the pool were selected. Each of these had different backgrounds and used teleconsultation in different settings. Each of the three inclusion criteria related to types of teleconsultation use were represented within the first tranche. Nurses were selected from the acute sector (burn management), from teams managing patients with long-term conditions and from outpatient services. As such, the five selectively sampled participants gave a breadth of experiences from which it was hoped a range of data would be yielded. Following this initial tranche, nurses were sampled theoretically from the participant pool. The full details of how the emergence of themes led to the sampling of subsequent participants with different backgrounds and experiences can be found in Chapter 5. A deliberate effort was made to ensure that details of the process behind theoretical sampling were captured and reported. Doing so provided the necessary transparency about the decision-making process, but is a step frequently missing from articles based on grounded theory methods. (Draucker et al., 2007).

Theoretical saturation

One of the challenges of using theoretical sampling is knowing when to stop seeking out new sources of data. To address this challenge, another of the characteristics of grounded theory, theoretical saturation, was incorporated into the study design. Saturation was first described by Glaser and Strauss (1967) as the point at which no additional data can be found that will develop a category of the grounded theory.

Saturation can occur in isolated elements of the emerging theory, requiring the focus of theoretical sampling to shift to other areas. However, once all elements are saturated and theoretical sampling is no longer able to yield fresh data that "…sparks new theoretical insights…" (Charmaz, 2006:113), then data collection should cease (Higginbottom, 2004). Theoretical saturation is not present solely in grounded theory research: it has become a fundamental factor in influencing sample sizes within qualitative research studies more generally (Guest et al., 2006).

Though theoretical saturation was used as a marker of when to cease data collection in this study, the concept is not without critics. Some of these criticisms stem from the suggestion that categories can ever become truly saturated. Dey (1999), for example, challenged the assertion that theoretical sampling and the analysis of data will reach a point where it produces no entirely new findings. As a result, the term 'theoretical sufficiency' was suggested to describe achieving a satisfactory level of insight (Dey, 1999). Focusing more on the operationalization of the concept, Morse (1995) raised concerns about researchers using saturation as a justification for the end of data collection without any supporting evidence.

In grounded theory though, these concerns can be mitigated against. Saturation in this context does not suggest that no new ideas will ever be found: instead, it refers to the different categories of theory being identified and the relationships between them being fully explained (Strauss & Corbin, 1998). Additionally, saturation in grounded theory is easier to evidence than in broader qualitative methods, simply because the approach has clearer guidance on exactly what it means (O'Reilly & Parker, 2012).

Given that theoretical saturation is such an important element of grounded theory research, it was used within this study as the benchmark against which the final

decision to stop sampling was made. However, to try and address the concerns of Morse (1995) and others, Chapter 5 offers evidence to support the judgement that categories were saturated and that data collection should cease. Similarly, it is recognised that beyond the timeline of this project, teleconsultation will develop in terms of technological sophistication, clinical applications and social acceptability. As such, new theoretical viewpoints will develop and the grounded theory will require revisiting. However, for now, and for the development of the grounded theory 'as is', theoretical saturation was achieved for all categories.

Data collection

As with sampling, it was important that the method of data collection was consistent with the principles of a grounded theory approach. As such, the collection of primary data was via interviews with participants. This approach is often considered the most common and appropriate method of data collection in qualitative research, simply because interviews allow for gathering of the in-depth, subjective material that defines the broad approach (Holloway & Wheeler, 1996). However, just as not all qualitative methods are alike, not all interviews are alike. The key characteristic of grounded theory interviews is that they must be flexible and responsive to emerging concepts. In practical terms, this means that each interview will differ from the last, because each will be influenced by themes that emerged from previous data (Strauss & Corbin, 1998). This distinguishes grounded theory interviews from interviews in other qualitative approaches, such as phenomenology, where the same questions, following the same structure, may be used for all participants (Wimpenny & Gass, 2000).

The structure and content of interviews within this study therefore varied between different participants, and were flexible enough to adapt to ideas that emerged during

interviews. Though it was important to allow each participant to shape the direction of the discourse, an initial interview structure was developed (appendix D). Charmaz (2006) described how grounded theory interview questions need to be open and non-judgemental. This allows the interviewer to invite participants to discuss pertinent topics, but also allows the interviewee to introduce new perspectives, subjects or experiences. The challenge as a novice grounded theorist was therefore where to find the balance in the initial interview schedule - too structured and the interviews would force the data and close interviewees off from providing fresh ideas; too loose and the interviews would lack any sort of direction or focus.

The initial interview schedule therefore provided a compromise. The questions were, as recommended by Charmaz (2006), open and non-judgemental. However, they were framed within a structure of 'laddered questioning'. The laddered questioning technique was devised by Price (2002) during the course of a grounded theory study. The development was as a result of facing challenges similar to those described above – notably that initial interviews with minimal structure or focus were not yielding data that got to the core of his research question. Price therefore developed a technique that provided enough structure to gather meaningful data, but was loose enough to fit with the 'emergence' philosophy of grounded theory.

The technique, illustrated in figure 4.1, enquires on three levels in relation to the topic area (actions, knowledge, and feelings). The technique is based on the assumption that participants will find it easiest to describe actions and hardest to discuss feelings. By starting with actions, it is therefore possible to build a relationship between interviewer and interviewee and increase the latter's confidence in expressing themselves as the interaction develops (Price, 2002). In the context of this present study, by exploring each of these levels during interviews, participants were encouraged to provide a

holistic overview of teleconsultation whilst having the freedom to describe the issues that were of greatest importance to them.

The broad interview structure in appendix D is that which was used during the first interview carried out as part of the project. As soon as interview data were collected from the first participants, some findings began to emerge which then, in turn, influenced the structure and foci of subsequent interviews. This move from a very broad and loose interview schedule, to a more focused one later in the project, is characteristic of grounded theory studies (Duffy et al., 2004). Again, this provided something of a challenge, in that later interviews needed to probe emerging themes, but also needed to allow participants the freedom to open up new areas of discourse and discovery.

Much of the evolution of the data collection was influenced by the analysis that occurred between interviews. However, interviews also evolved in real-time: participants would raise issues, share experiences and even ask questions themselves, which required an immediate change in focus or approach. This not only opened up new theoretical avenues for exploration, but also provided some reassurance that the approach being used was not restricting participants to predictable, controlled responses.

Figure 4.1 diagram text:

Questions about philosophy (feelings/values/beliefs)

More invasive

Questions about knowledge

Questions about action

Less invasive

Electing levels of questions, action questions at start and end of interview knowledge/philosophy questions in the middle, based on respondent feedback

Coverage of subject matter. Deciding whether to pursue a subject (query uncomfortable) or to move on and possibly return later

Figure 4.1: 'Laddered' questioning – from Price (2002:278)

Interviews were carried out either face-to-face or over the telephone. Face-to-face interviews were carried out with participants in their own place of work. This was possible for those participants who worked within the North of England and could therefore be accessed relatively easily. However, the pool of potential participants also included nurses from more distant areas of the UK. As a result, many of those sampled were based too far away to visit and interview in person. To compensate for this, plans were put in place to allow for interviews to be carried out via the telephone or through videoconferencing (somewhat ironically, given the focus of the study, all of the participants who were being interviewed rejected the suggestion of a videoconference, instead preferring to talk on the telephone). The ability to complete interviews at a distance enhanced theoretical sampling by facilitating the development of a larger pool of potential participants. Whether carried out face-to-face or via the telephone, the approach and structure of interviews remained the same. Nonetheless, from the outset,

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there was recognition that elements of the interview process could vary depending upon the method used.

There are mixed views regarding the value and place of telephone interviews in qualitative research. A review of the literature in this area suggested a general bias against telephone interviewing, on the premise that the data yielded are not as rich as those from face-to-face interviews (Novick, 2008). Other qualitative researchers have suggested that a mixed approach of telephone and face-to-face interviews, such as that used in this study, does not impact on participant responses (Sturges & Hanrahan, 2004). There is certainly recognition in the literature that telephone interviewing has a number of pragmatic benefits, such as increased convenience for interviewees and the ability to sample from a larger geographical footprint (Smith, 2005).

Regardless of whether telephone interviews are considered less valuable than face-to-face, there is no doubt that the dynamic of the two interactions will differ somewhat. Telephone interviews carry the risk of missing important data through the loss of ability to generate or respond to visual cues (such as body language or facial expression), and the potential for verbal data to be distorted through mishearing or misinterpretation (Novick, 2008). Telephone interviews also tend to be shorter in length than face-to-face, and interviewees more likely to ask for clarification or reassurance on the adequacy of their responses (Irvine et al., 2012). The temporal differences between face-to-face and telephone interviews were noticeable in this current study, with the former generally lasting 45-60 minutes and the latter 20-30 minutes.

It was concluded that though there may be some limitations associated with the richness of the interaction via the telephone, this was more than offset by the increased

pool of participants and range of data that the medium could deliver. It was also felt that even if telephone interviews did not yield the same richness of data as face-to-face interviews, they would still offer something to the emerging themes and the development of the grounded theory.

Transcription and memo-writing

Audio from each interview was captured using a digital recording device. Each interview was then saved onto an office computer as a digital audio file, allowing for secure storage and repeated playback. This approach supports the collection and analysis of rich qualitative data by allowing for some of the subtleties of the interaction, such as intonation and pauses, to be identified and focused upon (Kvale, 2007). In addition, digital storage and playback facilitated transcription of all interviews into a Microsoft Word file. For a number of practical and methodological reasons, the process of transcription was carried out personally. Not sharing the data with a third-party transcriber ensured that participant confidentiality was protected. From a methodological perspective, listening to the interviews repeatedly helped to become embedded in the data at a very early stage. It was possible to identify subtle changes in tone of voice or brief pauses that may have not been apparent in a pure transcription of words alone. As a result, the process of transcription marked the beginning of analysis, as has been suggested previously by Kvale (2007).

Though transcribing all the interviews was time-consuming, the ability to become immersed in the data proved extremely rewarding during the analytical process – something which has been observed by other researchers (Lathlean, 2010). Nonetheless, even this seemingly useful approach to data capture and recording is not without controversy in the context of grounded theory: Glaser (2009) described

recording interviews as not being of any particular value. Instead, he advocated jotting down notes during the interviews, accompanied by 'memos' that capture ideas and prompt further questioning. Contemporaries of Strauss suggest that in the early days of grounded theory, he suggested that researchers should not waste their time dealing with verbatim transcriptions (Covan, 2007). Nonetheless, in later work, Strauss and Corbin (1998) do not warn against the recording (or even transcription) of interviews; indeed, some of their examples of analytical processes within their guide to grounded theory are based upon line-by-line reading of verbatim interviews. Elsewhere, the use of recording and transcription as a tool to assist data analysis is reported as a matter of routine within grounded theory studies (Chiovitti & Piran, 2003; Cone & Giske, 2013). The approach is particularly advocated for novice grounded theorists, who may not have the expertise to pick salient points from the data without the benefit of repeated listening (Wuest, 2012).

Recording and transcription was therefore deemed an appropriate tool to utilise, but was not relied upon as the only source of field data. Another of the characteristics of the grounded theory approach is the use of memos to document ideas, crystallise thoughts and move forward analytical ideas (Charmaz, 2006). Much of the literature regarding memos refers to their role after data have been collected and early codes have been generated (a process discussed in more detail shortly). Memos can take the form of informal written notes, diagrams or charts; they allow the freedom to shape thoughts about the data and reflect on findings (Lempert, 2007). For the purpose of this study, memo writing was utilised throughout the analytical process and took two particular forms.

Intra-interview memo writing took place in real-time during the collection of data. Any immediate thoughts were documented in relation to what had been said by participants, how it related to previously emerging themes and what further investigation was required. These contemporaneous memos were also used to record information that may not have been apparent on the interview transcription, such as facial expressions or body language (Lin et al., 2011). There is an argument that these 'field notes' do not have the depth or level of reflection necessary to be classed as memo writing. However, the content of (and the thinking behind) these intra-interview notes justified their classification as memos. Even though collected in real-time, they provided thoughts on emerging codes and whether the ongoing interview was verifying or refuting some of those earlier ideas. In some cases, they offered early diagrammatic examples of the emerging categories of the grounded theory, identifying links where appropriate. As such, they provided an important supplement to the inter-interview memos –the second form that was utilised. These memos, which fit more neatly with the description of memo-writing by Strauss and Corbin (1998), were written during the process of analysis, coding and categorisation of data. They helped articulate early analytical ideas, highlighted key points raised by previous literature and provided early conceptualisations of the grounded theory itself. All these memos were subject to the same coding and analytical processes as interview data.

Coding and analysis

One of key characteristics of all grounded theory studies is that data collection and analysis takes place concurrently (Backman & Kyngas, 1999). Analysis therefore commenced as soon as the first interview was completed. As data were collected and analysed within this study, so emerging findings were used to identify categories (and

the relationships between them), devise preliminary theories and inform future theoretical sampling.

A decision was taken early in the study design to complete all analysis manually. This was despite the availability of computer-assisted qualitative data analysis software (CAQDAS) that has been used to support analysis in a number of grounded theory studies (Bringer et al., 2006; Buckley & Waring, 2013). CAQDAS can be a useful aid, particularly in relation to the organisation of codes and development of analytical tools such as diagramming. However, because this study was the researcher's first major foray into the world of grounded theory, it was felt that manual analysis would facilitate greater learning and understanding of the coding processes and procedures. On reflection, the use of manual analysis, as with the decision to transcribe personally, also allowed for theoretical sensitivity to be exploited optimally and to become embedded within the data at an early stage.

Chapter 2 introduced the eclectic approach to grounded theory that was utilised within the study (the principles of the approach coming from Glaser and Strauss' initial work, coupled with some procedural guidance from Strauss and Corbin (1998), underpinned by the constructivist philosophy of Charmaz (2006)). It is in the analytical process that some of the similarities and differences between these different schools became most apparent.

The first formal stage of analysis involved a 'microanalysis' (word-by-word; line-by-line; phrase-by-phrase; sentence-by-sentence) of the transcribed interviews and accompanying memos/field notes (Strauss & Corbin, 1998). This microanalysis was used to support the first stage of the coding process and is advocated within all schools of grounded theory. Equally, there is a certain degree of consensus amongst grounded

theorists that analysis starts by breaking down and exploring the data, attributing codes, recognising similarities and differences, and identifying emerging categories. However, there are some differences in the approaches between schools. For example, though Glaserian and Straussian approaches both identify this first stage of the process as *open coding*, the former is clear that early categories should emerge purely from the data, whilst the latter pays more heed to the interpretation and sensitivities of the researcher (Kendall, 1999). From her constructivist standpoint, Charmaz (2006) acknowledged this first stage of coding (termed *initial coding*) as an important step that yields early analytical insights and facilitates in-depth engagement with the data. However, to underpin her philosophical standpoint, she emphasised that the researcher's perspectives will shape this process and offer a valuable view to compare with those emerging from the data. From a procedural viewpoint, Charmaz also described the value of 'incident to incident' coding, which supplements line-by-line coding by comparing similar and dissimilar events. For this study, in which many participants described specific examples of using teleconsultation in practice, this 'macroanalytical', incident-by-incident coding proved a useful counterpart to microanalysis.

The initial codes from this stage took many different forms. Some were taken directly from the words used by participants' (*in-vivo*) (Tan, 2010). For example, the phrase *"like being there"* was used by some participants to describe their perceptions of speaking to a patient via video. This use of the participants' own words acted both as a mechanism for identifying similarities in the use of language and as a tool for reinforcing the links between the raw data and emerging theory (Chiovitti & Piran, 2003). One danger identified early in the open coding process was that some codes aligned with concepts that had been previously identified from the scoping literature

review (*priori*) (Tan, 2010). However, being cognisant of the risk of forcing data into preconceived categories helped protect against it.

The wording of open/initial codes was also tailored in an attempt to optimise their value. In particular, the use of gerunds – verbs that are transformed into nouns through the addition of *'-ing'* – is advocated as a method for reinforcing the principle that grounded theory often seeks to uncover social processes (Charmaz, 2012; Clarke, 2003). As a result, many early codes, such as '*being* there', '*resisting* change' and 'no *touching*', included gerunds. An example of the open coding process can be found in appendix H.

As initial/open codes were developed, the relationships between them were identified through a process of *constant comparative analysis*: contrasting data against itself, new data, and established theory to facilitate the emergence of new ideas (Boychuk Duchscher & Morgan, 2004). This method of qualitative analysis was outlined in depth within Glaser and Strauss' original text on grounded theory and remains an important foundation upon which theories can emerge (Mills et al., 2006). However, Strauss and Corbin (1998) provide a more nuanced view of making comparisons, outlining the difference between incident-by-incident comparison and *theoretical comparison*. The latter focuses on comparing more abstract concepts from the data, rather than just the details of individual incidents. For example, in the case of this study, many different incidents included references to 'being there' or 'fear of technology'. These concepts (and others) were therefore explored in a broader context than those incidents alone, helping to build a deeper understanding of their meaning.

By using a range of analytical techniques, constantly comparing codes, revisiting previous data, recognising similarities, conflicts and contradictions, it was possible to

take disparate codes and identify from them a more coherent series of categories. During this early phase of coding, previous literature was also revisited and existing knowledge was reflected upon to enhance sensitivity to emerging categories.

The next stage of coding used was that which brings to the surface many of the procedural differences between the schools of grounded theory. Strauss and Corbin (1998) advocate *axial coding* as the second stage of the analytical process. This facilitates the making of connections and relationships between categories and their subcategories. Whereas open coding requires breaking down the raw data, axial coding involves putting it back together again in different ways (Kendall, 1999).

Strauss and Corbin discuss how the subcategories that are refined during axial coding answer questions about the different dimensions of a category, such as who, why, when and how. In addition, axial coding requires identification of any relationship between different categories (Strauss & Corbin, 1998). This stage of the analytical process has some critics – Glaser in particular suggesting that identifying relationships in such as systematic manner can result in the forcing of theory into a preconceived shape (Kendall, 1999). For the purposes of this study however, axial coding proved a useful procedural step. This was partly because as a novice grounded theorist, clarity and guidance throughout the analytical process was important, and axial coding offers a clear, systematic and formal structure (Charmaz, 2006). However, axial coding also proved useful because a specific category and a series of subcategories emerged very strongly during open coding – it was therefore beneficial to include an explicit step in the analytical process focused on exploring the exact nature of these relationships.

Finally, *selective coding* took place. This final stage of analysis outlined by Strauss and Corbin (1998) describes a process through which categories are further refined

and integrated to develop, in this case, a theory related to the use of teleconsultation by nurses. A crucial stage of this process was the identification of a *core* or *central category*. This central category needed to relate to all other categories within the theory, be explicit within much of the data, abstract enough to allow for related research to take place, and flexible enough to accommodate contradictory or alternative interpretations of teleconsultation use (Strauss & Corbin, 1998). Constant comparative analysis, supported by the use of memos and diagrams, allowed a core category to be identified that encompassed the main theme of the emerging grounded theory and which had a clearly defined relationship to all other categories. This process is explored in more detail in the next chapter.

Throughout the coding stages, specific analytical techniques suggested by Strauss and Corbin (1998) were utilised in an attempt to build a comprehensive, detailed picture of the emerging categories and theory. Some of these techniques are intuitive and straightforward, such as the use of questioning and focused analysis of a key word, sentence or phrase. However, two specific comparative techniques also proved particularly valuable. The first of these was the 'flip-flop' technique, in which a concept is given a different perspective by turning it inside-out or upside-down. This was used as a real-time tool within interviews. For example, where participants began to talk about a lack of physical proximity during teleconsultation, this prompted some exploration of how experiences would have differed had they been next to their patient.

The second comparative technique utilised regularly was 'waving the red flag'. This required recognising when bias, preconceptions or beliefs risked skewing the analysis. Though Strauss and Corbin (1998) recognise that it is never possible for either the researcher or respondents to be entirely free of bias, they warn against acceptance of

'absolute' statements within the data (e.g. 'never' and 'always'). Where these occurred within this study, it was therefore deemed important to not take them at face value and instead to explore exactly what the statements might represent.

The analytical process described above suggests a linear one, moving from open, to axial, to selective coding, with each as a distinct and defined stage. In reality, the analytical process was not linear and did not rely on one stage finishing completely before another commenced. Instead, there was often the need to move backwards and forwards between different levels of coding as categories and subcategories begin to emerge (Strauss & Corbin, 1998).

Ethical considerations and approval processes

The method outlined above offered a small number of potential ethical considerations. Firstly, as a result of the theoretical sampling approach described earlier, some potential participants who were part of the 'pool' were not asked to take part in an interview. Though this was not a major ethical concern, it could be considered discourteous to not sample a willing participant. However, all potential participants were informed in advance that it may not be necessary to interview them. Once theoretical saturation was reached and the field work element of the study concluded, any members of the potential participant pool who had not been sampled were contacted, informed that they would not be interviewed, and thanked for their cooperation.

It was also possible (though the circumstance never arose) that discussions during interviews may have raised some ethical or professional concerns. Because participants were being interviewed about their experiences of using teleconsultation as part of their delivery of nursing care, there was always the possibility that those

discussions could lead to disclosure of suboptimal clinical practice. As a result, the information leaflet and consent form (appendices B and C) included statements that although confidentiality and anonymity of participants would be assured wherever possible, this would not be the case if examples of unsafe practice were disclosed. Participants were informed in writing, and at the commencement of interviews, that in such an event, their line manager would be contacted to ensure that any occurrences of unsafe or unprofessional practice had been investigated appropriately. Within the consent form, participants were asked to acknowledge specifically that they understood the potential implications of disclosing poor practice

There was also the possibility (though again, this never became a reality) that by reflecting upon incidents that took place in practice, some participants may become upset. Again, plans were put in place to mitigate this – participants were informed that should they wish to stop the interview at any stage, they should simply ask to do so. In addition, the information leaflet made clear that should a participant wish to withdraw their consent at any stage during the interview, then they were perfectly free to do so. Participants were also given the researcher's contact details and offered the opportunity to contact him subsequent to the interviews to discuss any issues related to the study or, if they wish, remove their consent to participate. Again, this did not occur during the course of the study, though plans were put in place to ensure the destruction of recordings, transcriptions and memos related to that participant if necessary. Despite these steps, participants were informed that due to the nature of the study, in which data collection and analysis occurred concurrently, late withdrawal from the study would mean that findings from their interview would already have been analysed and incorporated into the final grounded theory.

Because the study required interviews to take place with NHS staff, sometimes within clinical settings (including acute care wards and emergency departments), some consideration of NHS ethics processes was required. For many studies within UK clinical settings, an application is required through the Integrated Research Application System (IRAS). However, completion of the decision-making checklist from the Medical Research Council (MRC) and NHS Health Research Authority (2013) suggested that it would not be necessary to apply for approval from an NHS Research Ethics Committee (REC).

Instead, an application was made for review and approval through the Faculty of Health and Social Care (FHSC) research ethics committee at the University of Hull. Following consideration of the application and accompanying documents (i.e. the information leaflet, consent form and interview schedule), a response from the committee was provided (appendix F) requesting that some issues be clarified. These clarifications were provided and permission was given to proceed with the study (appendix G). The FHSC ethics committee also confirmed that no NHS REC approval was required.

Confidentiality and data storage

As potential participants identified themselves, contact details were stored within a Microsoft Word file on the hard drive of the researcher's University computer. This password-protected computer was kept within a single-occupant, locked office. The contact list included the individual participant code (TCXX) used to identify respondents throughout the study. As such, this document also served as the key that linked an anonymous code with the details of the actual participant. The contact list will be deleted from the computer one year after completion of the study.

In addition to the contact list, the other materials produced during the study with potential implications for information governance are the digital recordings of interviews, the interview transcripts and any memos linked directly to that participant. The digital recordings did not include any planned reference to the participant's name, the names of their colleagues, patients or institutions. However, there were a number of occasions when participants, as part of their interview responses, inadvertently identified organisations, specific clinical settings and, in limited cases, their own first names or those of their colleagues. There were no occasions where patient names were divulged during interviews. To reduce the risks associated with holding this type of information, the file was deleted from the recording device as soon as it had been uploaded to the researcher's office computer. Audio files remained on the password protected computer for the duration of the analytical process, to allow for the raw data to be revisited if necessary. These files will be deleted immediately after the completion of the study. During the transcription of interviews, any information that may have provided a clue to the identity of an individual or organisation was redacted. A memo was included on each occasion to ensure that removal of this reference did not result in the loss of a theoretically important item.

Given that transcriptions contain the bulk of the raw data, but without any identifiable information, they will be kept for longer than any other project documentation. These transcriptions are stored on the researcher's password-protected office computer and will be kept for five years following completion of the study. This will allow for the data to be revisited and mined if necessary during future research studies.

The subsequent chapters include many quotations from participants, providing direct evidence of the thoughts, feelings and experiences of those nurses involved with teleconsultation. To ensure confidentiality, these quotes will be accompanied only by the participant identification code. Given that these quotations are taken directly from the transcriptions of interviews, any references to individuals or organisations by name have been redacted.

CHAPTER 5: EMERGENCE OF THE GROUNDED THEORY

The previous chapters outlined the method underpinning the development of the grounded theory of nurses' use of teleconsultation. The theory emerged from constant comparative analysis of the findings from interview data, coupled with evidence from previous literature.

The development of the theory began with the scoping review of literature related to use of teleconsultation by nurses and other healthcare practitioners. This literature review (discussed in chapter 3) allowed the development of sensitivity to some initial areas of exploration; notably the diversity of settings in which nurses utilise teleconsultation, the barriers to implementation and the potential impact on the nurse-patient relationship. Following this review, selective sampling identified participants to take part in the initial tranche of interviews.

Findings from initial interviews

Initial interviewees were purposively sampled in an attempt to gather data from nurses who had different experiences of utilising teleconsultation, either in relation to clinical speciality and/or method of utilising the technology. The first five interviewees brought experiences from acute care, long-term condition management and outpatient clinics. In terms of the modality of technology use, some of the initial sample had experience of talking *to* patients via the medium of video…

"… [patients] are sitting in their own home watching their television and they can simply press a button and link directly to us…" (TC01)

…whilst others had been *with* patients whilst they were having a teleconsultation with another practitioner:

"I have used it for remote consultation with burns registrars or senior nursing staff...for them to be able to see and speak to patients that have had a burns injury." (TC04)

Analysis from early interviews identified two broad approaches to teleconsultation, related to the remoteness or proximity of nurses to their patients. Firstly, there were Nurse-Patient (N-P) teleconsultations, where the RN and patient were remote from one another and their interaction was mediated by video (figure 5.1).

Figure 5.1 (above): N-P teleconsultation. The nurse (right panel) is remote from the patient and interacts via video. The patient (left panel; seated) is often accompanied by a third party – in this case, a family member.

In some cases, N-P interactions were planned appointments, such as outpatient clinics. In others, interactions were prompted by an urgent need for patient assessment and were initiated by the patient or a physically proximal carer. During these interactions, a third party, such as another nurse (though often one with a less specialist skill set than the remote RN), an unregistered carer or family member, was proximal to the patient.

The second broad category of interactions identified within the study was Nurse/Patient-Practitioner (NP-Pr) teleconsultations, in which an RN was physically proximal to the patient during a video-mediated interaction with another practitioner (figure 5.2). In most cases, the remote practitioner was a doctor or an RN with a specialist skill set (e.g. clinical nurse specialist).

Figure 5.2 (above): NP-Pr teleconsultation. The nurse (left panel; standing) is proximal to the patient. The nurse and patient interact with a remote practitioner – in this case, a doctor (right panel) – via video.

In both types of interaction, the nurse-patient dyad and the nurse-patient-practitioner triad were the core participants in the teleconsultation. However, the first tranche of participants also described important roles being played by peripheral participants in teleconsultations, such as family members or unregistered practitioners. A particularly crowded interaction was described by a nurse involved in NP-Pr teleconsultation within acute burn care:

"There will be the patient, their family members there. There'll be me there, probably a doctor there and at the other end, there'll be a doctor – sometimes there is a nurse or senior nurse there as well." (TC04)

These peripheral participants played various parts in the consultation, including observation only, an occasional role in answering questions, or acting as an active third party who would help compensate for some of the constraints associated with teleconsultation. This study provides a detailed insight into the role of these peripheral participants, explored within subsequent chapters. However, the general existence of peripheral participants in video-mediated interaction has been identified elsewhere. In a broader context than health-related interaction, Monk and Watts (2000) outlined the input of peripheral parties in videoconferencing, highlighting how roles changed between and during individual interactions. In the healthcare setting, Fatehi et al. (2014), in their scoping review of teleconsultation, found that in the majority of cases, patients had someone else (nurse, family member or other carer) with them during an interaction.

The variety of roles taken on by nurses during teleconsultations, including being or working with peripheral participants, became one of the first categories to emerge. Associated with the different roles held by nurses were a range of aims and objectives

of teleconsultation. Open coding of early interviews highlighted how the use of video-mediated communication was designed to, amongst other things, bring care closer to patients' homes, reduce hospital admissions and allow greater access to specialist or out-of-hours care:

"...what we wanted to do was enhance the care that patients already got outside of the Trust and improve it. We also wanted to try and prevent them being admitted, so to see whether we could support them out of hospital remotely." (TC01)

"...the [nursing home] staff are sensibly using us instead of bringing their residents to hospital." (TC02)

"...it is about making sure that we have got the right patients coming in..." (TC03)

Again, this emerging category of different aims and objectives reinforced findings from the literature which had identified benefits from teleconsultation related to the enhancement of clinical care and improvements in the quality of patient experience (Demaerschalk et al., 2012; Sevean et al., 2008).

The initial interviews also suggested two, superficially contradictory, categories related to the value of teleconsultation. There was consensus that the use of video provided additional benefit over the delivery of remote nursing care via the telephone…

"It's more difficult just listening to some information that someone is telling you rather than being able to see the situation for yourself." (TC02)

"It doesn't matter how eloquently you describe a wound on the phone, it will never replace seeing it and so [teleconsultation] is a fantastic tool in my view" (TC04)

…but recognition that there were limitations to any technology-mediated consultation. Whilst some of these were directly related to the loss of touch (in the cases where nurses were remote from their patients), others related to operational problems linked to the use of technology:

"...the most difficult part of it initially was not being able to physically touch the person that you were speaking to, which is a huge thing." (TC02)

"...sometimes there's equipment failures and obviously that's a big let-down." (TC04)

This feedback from participants led to the development of two further provisional categories – the value of sight and the limitations of video.

One additional provisional category was identified during open coding of the first five interviews. Many participants described resistance to the use of teleconsultation, either at a personal level and/or amongst colleagues. This resistance appeared to be due to issues such as general discomfort with change or specific antipathy towards using technology as an adjunct to nursing care. One respondent identified the presence of:

"...stragglers who will find problems and faults with things..." (TC05)

Whilst another described a more general lack of engagement and acceptance:

"I get really quite frustrated that there hasn't been more engagement...more acceptance I suppose, from the clinicians..." (TC01)

Open coding of the first tranche of interviews therefore generated a provisional set of five, initially unconnected categories (Figure 5.3; p89).
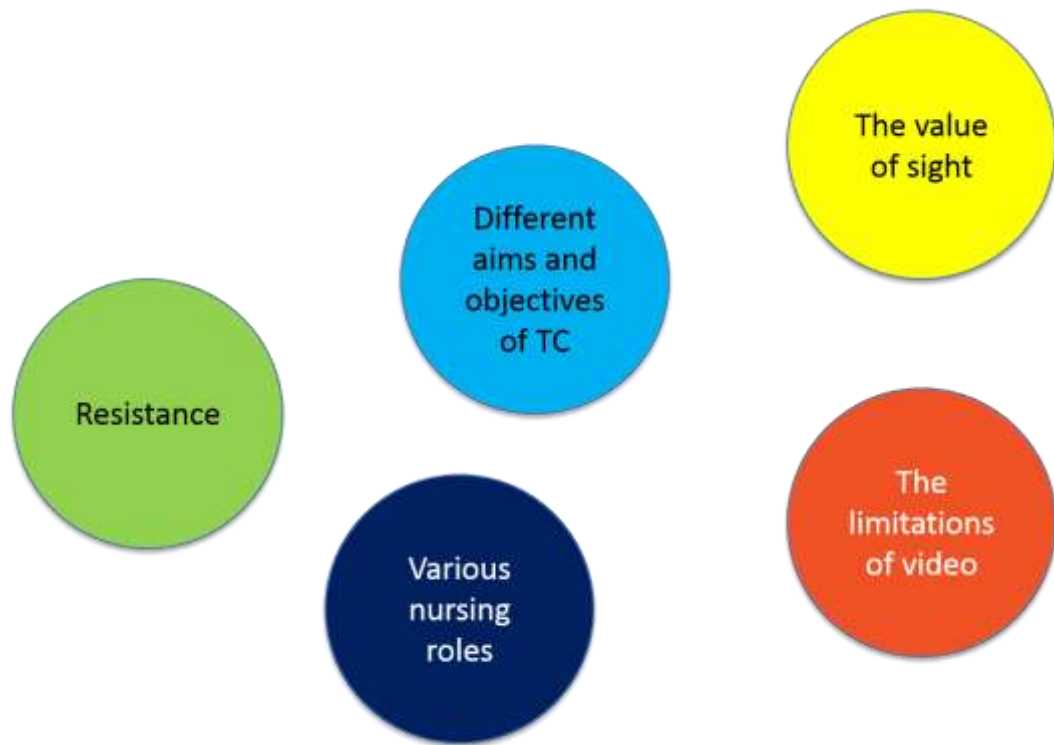
Figure 5.3: Early emerging categories generated from open coding of the first five interviews

These initial categories led to two broad developments in data collection for the remainder of the study. Firstly, the provisional categories guided the subsequent theoretical sampling process. For example, figure 5.4 (p90) demonstrates how the emerging theme of 'various nursing roles' led to theoretical sampling of participants with experience of N-P and/or NP-Pr teleconsultation across a range of clinical specialties. As other categories began to emerge, so the theoretical sampling became more nuanced. Because the value of sight emerged as a category, participants with experience of phone-mediated care were approached; because there had been some early discussion of resistance to teleconsultation (particularly in early stages of development), participants were specifically targeted who were still relatively inexperienced users of technology. The emergence of categories therefore informed

the subsequent sampling of participants; a defining characteristic of theoretical sampling specifically and of grounded theory generally (Charmaz, 2006).
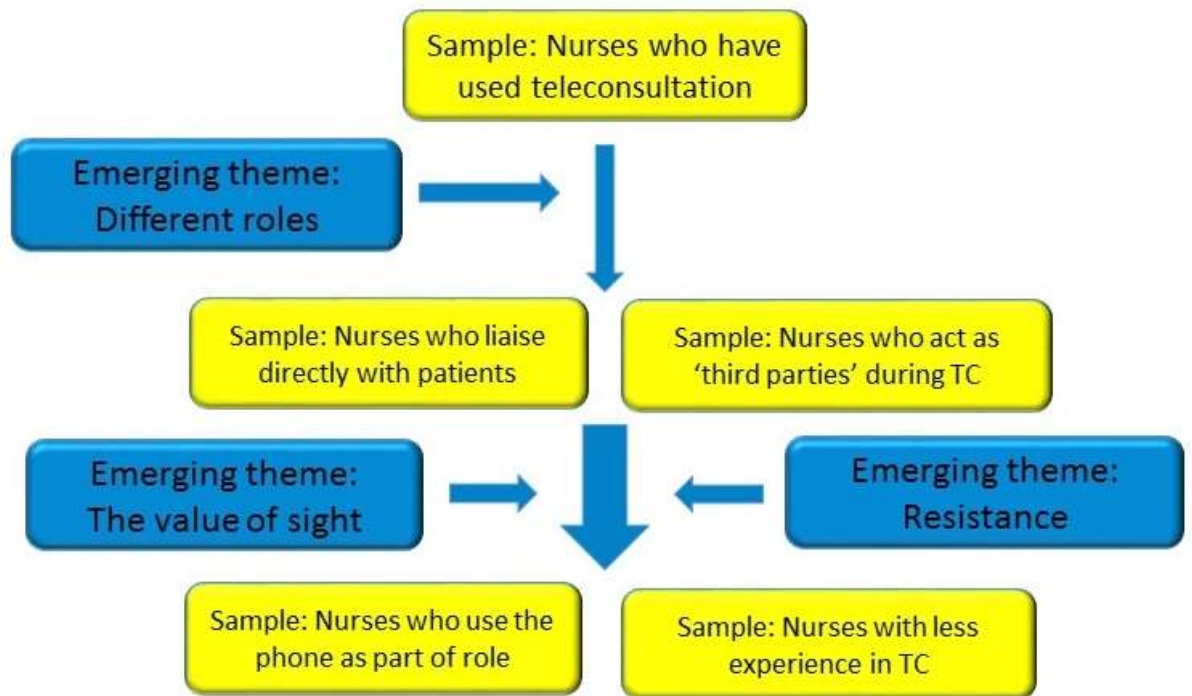
Figure 5.4: Example of theoretical sampling process. Each emerging theme (blue) influenced subsequent sampling decisions (yellow).

One of the most significant steps taken as a result of the theoretical sampling process was to avoid recruiting any participants who had no direct experience of teleconsultation. Though it was always anticipated that users of teleconsultation would offer the richest data, some consideration was initially given to sampling non-users and exploring their perceptions of using video-mediated communication in nursing care. However, a decision to *only* sample nurses with some experience of teleconsultation was made when early interviews suggested that the perceptions of non-users was inaccurate and could be misleading. This mismatch between preconceptions and reality was described by some participants as a journey from scepticism to support:

"I think other nurses just think that you are having a chat with someone over a video link…I think that is a general perception of quite a lot of nurses until they actually come and see the system in place. Then it changes from very sceptical to 'that's absolutely amazing.'" (TC02)

Data such as these suggested that gathering perceptions about teleconsultation from the broader nursing community might cause the emerging grounded theory to lose sight of what the role of the nurse *actually* was and towards what people thought it *might* be.

The second development in data collection following findings from early participants was an evolution of the interview schedule. A primary focus of interviews subsequent to the initial tranche was exploring and validating the provisional categories, whilst also ensuring openness and sensitivity to new ideas that would expand the grounded theory.

Using this iterative approach to sampling and interviewing, a further 12 interviews were carried out with participants from a range of backgrounds, bringing the total number to 17. Open coding of the data from these interviews validated the five initial emerging themes. Axial and selective coding (explored in the previous chapter) helped to refine the emerging categories, whilst also identifying relationships between them and informing the development of a core category. After 17 interviews, analysis suggested that no new findings were being yielded. No new categories or subcategories were emerging and no new relationships were being identified. A decision was therefore made that theoretical saturation had been reached and data collection ceased.

Development of the core category and associated categories

Categories of the nurse's role

Analysis of the interview data identified that there was a consistent link between the aims and objectives of teleconsultation and the various different roles of nurses. This linkage seemed to be focused on the concept of 'being there' for patients - this was the case in both N-P and NP-Pr teleconsultations. What was particularly striking was that the nurses' role identified from the data encapsulated a range of activities much broader than might be traditionally associated with nursing. As the analysis of data continued, the scope and boundaries of these different activities became clearer. Four specific subcategories of role were identified – operational, clinical, therapeutic and social.

Operational: This subcategory encompassed the operational and organisational role played by the nurse during a teleconsultation. On occasions, the operational role of the nurse was summarised as the 'headline' purpose for the nurse being there. For example, some nurses were required to be available to answer a video-mediated call from a patient or to facilitate an outpatient clinic. Some respondents also described a need to be involved with teleconsultation as part of a video-mediated multidisciplinary team interaction between practitioners and the patient. In this case, the nurse could be at either end of the video-link: physically with the patient or contributing via teleconsultation technology.

By being there in the broadest sense, nurses were able to facilitate the delivery of teleconsultation itself and, by doing so, ensure the delivery of broader organisational goals. These types of activity appeared to be less patient-centred and more service-centred (though the patient did benefit from the provision of the service). For example,

one nurse described how they were required to provide a teleconsultation clinic to reduce waiting lists…

"...we found that there was a big backlog of patients...so we introduced [teleconsultation] to see patients...and now we don't have any waiting list." (TC16)

Other examples of operational roles were more specific, though still related to the facilitation of organisational functions. Nurses described leading or taking part in administrative functions such as organising patient flow through a teleconsultation clinic or ensuring the involvement of all necessary members of the multidisciplinary team:

"...you have to put out the stroke call, which goes to the med reg and to CT...we contact the consultant while the patient is being CT'd." (TC10)

One element of an RN's operational role unique to technology-enhanced care services such as teleconsultation appeared to be provision of technical support for the interaction. These roles included setting up the teleconsultation equipment at one end of the interaction, directing the use of technology by patients or practitioners at the other end of a consultation, or providing a troubleshooting service:

"So we get the whole bed space ready – get ready for them. We'll put the telemedicine machine next to the bed, switch it on. That's all literally we have to do – switch the machine on, the link is then established." (TC15)

Clinical: Each description of a teleconsultation referred to there being one or more key clinical functions carried out by the nurse. These functions were related to the overall purpose of the nurse participating in an interaction with a patient, so had links to their operational role. However, whereas operational roles were more service-

focused, clinical roles encompassed a number of specific tasks, objectives and activities associated with direct, patient-focused care. For example some nurses were required to facilitate a remote outpatient clinic for patients (operational), involving a series of patient-focused tasks such as history-taking, visual examination, provision of advice and prescription of care (clinical).

One of the strongest areas of the clinical role to emerge from the data was patient assessment. This was carried out remotely (in the case of N-P teleconsultation), or whilst being proximal to the patient (in NP-Pr interactions). For example, one nurse offered a brief insight into assessing her patients via video, gathering information from both the patient and their proximal carer:

"I get a history from the carer. I ask to then see the patient…and basically ask the patient if they're able to answer how they feel." (TC12)

In the case of NP-Pr teleconsultation, the assessment role was described as being carried out by the RN, on behalf of the remote practitioner.

"They will ask you to double-check things and 'can you get them to do that?'" (TC15)

Therapeutic: Participants described elements of their role within teleconsultation that supported the patient and/or carer, but were peripheral to the specific object and function of the consultation. For example, nurses describing their delivery of clinics via teleconsultation outlined their role in relation to operational delivery (to provide a follow-up clinic) and clinical objectives (history-taking, visual examination, treatment and planning). However, interactions that took place during the teleconsultation also provided a broader therapeutic purpose beyond the primary reason for the

consultation, including provision of reassurance and support, and development of the nurse-patient relationship.

These therapeutic roles described by participants did not necessarily have a clear clinical objective – for example, they did not involve a specific assessment task, nor did they underpin the diagnosis, planning, prescription or evaluation of care. However, the activities did appear to offer a degree of benefit to the patient (and sometimes their carers). During N-P teleconsultations, these therapeutic roles could involve interventions such as recognising and responding to non-verbal cues that might signify important patient issues. Though this was an extension of the primary assessment process, it also suggested a broader, more holistic approach to care:

"...if we have a worry and you think 'oh, they are perhaps not as clean as they were a few days before...or they are not able to brush their hair...those kinds of issues are really valuable." (TC01)

Other participants with experience of N-P teleconsultation described their interventions as offering comfort and reassurance to patients:

"...they're pleased to see you, often quite reassured, they like to hear your voice, see your expressions. It's a comfort as well as a reassurance a lot of the time." (TC07)

In NP-Pr teleconsultation, the proximal RN, in addition to their clinical functions, also carried out some more nebulous but nonetheless extremely valuable roles:

"So it's kind of supporting the patient...we can kind of have a chat afterwards just about how they feel." (TC09)

Social: Aside from the operational, clinical and therapeutic elements of their role, some participants also highlighted the importance of someone 'being' with the patient

or with other practitioners during a teleconsultation. This aspect of the role related not directly to any particular therapeutic aim or objective, but just to the social interaction that takes place during healthcare interventions. The social elements of the nursing role presented the most difficult area to conceptualise due to their different manifestations in different uses of teleconsultation. For example, in N-P teleconsultations, nurses described attempting to enhance social presence, reduce the visibility of the technological medium and give the patient the sense that they are 'in the room' with them. In these types of interaction, where another person (such as a relative or carer) is physically located with the patient, the sense of 'being there' desired by the nurse may be as much to support this third party as it is the patient, giving them the sense that they have expert help and support with them.

Within NP-Pr teleconsultation, the nurse is physically proximal to the patient, so there is no challenge to 'being there'. However, there appeared to be a role for the nurse in trying to enhance the social presence of the other practitioner - that is, trying to make it seem as if the 'remote' clinician was in the room.

In addition to this rather philosophical sense of 'being there' (either on the part of the patient, their family, carers or other practitioners), the social elements of the nurse's role in teleconsultation encompassed more tangible examples of social interaction. In these cases, the functions, role and professional status of the nurse involved with the teleconsultation was less important than the fact that *somebody* was present. Rather than these elements of teleconsultation reflecting nurse/patient roles, the interactions described were simply those between two people:

"We'll have quite a lot of them all saying 'I can't see what you're wearing today – first of all, stand up and give us a twirl!'" (TC06)

The nurse's role in context

Though the emerging themes offered a new conceptualisation of the nurses' role, there has been discussion elsewhere of the breadth of activities associated with nursing care. In relation to technology-mediated care, Wright et al. (2001) outlined a differentiation of roles, describing nurses as either facilitators in medical consultations, members of the multidisciplinary treatment team or direct provider of care. Within a much broader clinical context than teleconsultation, Furåker (2009) identified that less than 40% of a hospital-based nurses' activities were focused on direct provision of patient care. O'Connor and Kelly (2005), exploring the role of nurses as advocates, identified that in addition to 'traditional' models of individual patient advocacy (which has links to the clinical and therapeutic activities emerging from the data in this study), there was also a need for 'organisational advocacy'. This still required acting in patients' interests, but doing so at an organisational level, offering parallels to the operational roles described above (i.e. administrative and technical tasks).

The evidence that nurses' roles are much broader than delivering direct, patient-focused care supports the work of Davina Allen - a long-standing critic of the view that nursing is predominantly a profession devoted to providing holistic care to individuals. Allen (2014) advocated a reconceptualization of 'holism' to incorporate many of the organisational and administrative functions that are a common element of a nurse's day at work. The grounded theory built from studying nurses' experiences of teleconsultation mirrors some of the findings from the previous work of Allen and others by describing a role that incorporates the delivery of individualised care, but also recognises the importance of organisational, administrative and technical functions.

Identifying the core category

The term 'presence' was identified (originally during an intra-interview memo) as the best descriptor to connect the different elements of the nursing role in teleconsultation. Presence is defined as "The fact or condition of being present" and, in turn, 'present' means to be "Beside, before, with, or in the same place as…" (Oxford English Dictionary, 2014). Presence was therefore chosen as the term that provided the most literal descriptor of findings – i.e. nurses reported being present in teleconsultation (or, in some cases, *not* being present) for different reasons and in different ways. Because the four types of role encompassed nursing in its totality, the core category that best linked these together was identified as *nursing presence*. The subcategories of nursing presence – titled *operational presence, clinical presence, therapeutic presence and social presence* – were each linked to the core category (figure 5.5; p99).

This second iteration of the grounded theory showed the delivery of nursing presence as a whole to be the fundamental element of the nurse's role in teleconsultation. However, different subcategories of presence can be delivered at different times or simultaneously. For example, a nurse who is facilitating the delivery of a remote triage service via teleconsultation (operational presence) may be assessing vital signs (clinical presence) whilst attempting to reassure and comfort the patient (therapeutic presence).

Figure 5.5: Second iteration of the grounded theory, with core category and related subcategories of presence

The core category in context

The development of a core category of nursing presence, encompassing four subcategories, emerged from analysis of the data, as is the requirement of any grounded theory (Strauss & Corbin, 1998). However, 'presence' itself is not a new concept: it has been identified previously in both nursing theory and in studies of technology-mediated communication.

From a nursing perspective, presence is a concept that has historically rested within humanistic nursing theory (Godkin, 2001). Since the mid-1960s, nurse scholars have described presence as a core element of nursing and attempted to articulate its constituent parts (McMahon & Christopher, 2011). In previous conceptualisations, authors have tended to include some element of physical presence that incorporates behaviours such as touch, non-verbal communication and maintaining close proximity (Easter, 2000; Zyblock, 2010). The issue of proximity is obviously a key one in the context of teleconsultation, where agents are often remote from one another. Previously published theoretical positions on remoteness and nursing presence are equivocal. Though Finfgeld-Connett (2008) described the importance of 'intimate interpersonal sensitivity' as an attribute associated with nursing presence, she makes no explicit reference to a need for physical closeness between nurse and patient. Conversely, Zyblock (2010) was adamant that physical proximity is vital for a nurse to be present, whilst Easter (2000) required actual closeness for one 'mode' of presence in her model (namely *physical presence*).

Like the grounded theory proposed within this study, previous models of nursing presence also offer different subcategories. For example, in addition to physical presence, the model proposed by Easter (2000) has three other modes of presence, including *therapeutic presence* (elements of nursing linked to offering comfort and support to patients). Easter also coined the term *holistic presence* to represent the connection of a nurse's mind, body and spirit with those of the patient's. The final member of the quartet of modes of presence is *spiritual presence*, related to "…an inquiry into being" (Easter, 2000: 372).

Previous authors have not only explored the types of presence, but also the methods by which it can be implemented. Doona et al. (1999:64) described nursing presence as

an 'all-or-none' phenomenon that happens at specific points in time: "…the moment of nursing presence occurs in a context of existential tension." In the theory of presence developed by McMahon and Christopher (2011), there are levels of presence (physical, psychological or therapeutic) that can be delivered in different 'doses'. By doing so, the authors characterise nursing presence as a specific intervention. Perhaps the most explicit manifestation of presence as a distinct nursing intervention, certainly from a grammatical sense, was the use of the verb 'presencing' by Benner (1984) to describe the existential practice of being with a patient (Zyblock, 2010).

The difficulties in defining the exact meaning of presence in previous literature are perhaps best summarised by exploring the work of those who attempt to clarify its meaning. Finfgeld-Connett (2006) introduced her meta-synthesis of presence in nursing by bemoaning the complexity and vagueness of the concept. Despite a robust and comprehensive analysis of the evidence base, the conclusion (also rather complex and vague) was that "Presence is an interpersonal process that is characterized by sensitivity, holism, vulnerability and adaptation to unique circumstances." (Finfgeld-Connett. 2006:710). In a later work, Finfgeld-Connett carried out a qualitative concept comparison, concluding that nursing presence can be considered almost synonymous with *caring*, and that there are "substantive similarities" and "a notable lack of differences" between the two (Finfgeld-Connett, 2008:116).

Within previous literature on the use of video to mediate communication, there can be found frequent reference to the concept of 'presence'. Whilst most conceptualisations of presence in this context relate to the feeling of 'being with' someone during technology-mediated communication, different terminology is used throughout the literature. For example, Knudsen (2002:2) described 'telepresence' as "the subjective experience of being together in one place when one is geographically situated in

another". The term 'social presence' has also been used for many years to describe the sense of being together with another person or persons during an interaction (Short et al., 1976). The discriminating factor between telepresence and social presence is that the latter can be applied to situations where parties are in close proximity, as well as those when they are remote from one another. To highlight occasions where presence is achieved through a technological medium, additional terms, such as mediated social presence and social telepresence have also been used (Biocca et al., 2003). The grounded theory of nursing and teleconsultation takes some of these ideas surrounding technology-mediated presence, but places them in the specific context of nursing practice and patient care.

There has been little previous research or discussion related to nursing presence in the context of technology-mediated healthcare. Tuxbury (2013) sought to identify examples of nursing presence during remote monitoring of, and telephone interactions with, patients. Though focusing on the use of technology to support care, Tuxbury (2013:156) adopted a traditional viewpoint of nursing presence, defining it as "a reciprocal flow of openness in the dialogue." Speaking to six nurses who had used the telephone to interact with remotely monitored patients, Tuxbury (2013) identified only two occurrences of nursing presence, where she described the interaction as reaching total openness.

The work of Tuxbury (2013) demonstrated one of the fundamental differences between traditional theories of nursing presence and those postulated within this grounded theory. In the past, nursing presence has been described as something that can occur infrequently and only in certain circumstances – nurses can be literally present without being 'present'. In the grounded theory of teleconsultation, the emerging data suggested that when involved with patient care, nurses were always

present in one way or another and to one extent or another. The participants' discussion of their role suggested that they had some degree of operational, clinical, therapeutic or social presence at all times when interacting with, or on behalf of, patients.

The only occasion where presence moved towards the binary, on/off form discussed by Biocca et al. (2003) is when technical issues with teleconsultation meant that the interaction was interrupted or ended (i.e. the remote nurse moved from 'being there' to 'not being there'). Even then though, nurses still demonstrated an element of operational presence by attempting to rectify the technical problems or organising alternative means of interaction.

The grounded theory of teleconsultation, built on the testimony of participants and the existing evidence base surrounding video-mediated interaction, therefore challenges the previously held view of nursing presence as an intervention that can be turned on or off depending on the needs of the patient. By doing so, it suggests that existing theories of nursing presence, notably those of McMahon and Christopher (2011) and Finfgeld-Connett (2006), may not be a true representation of the work of nurses. Clearly, reaching this conclusion based on a single study of a specific modality of mediating nursing care, when set against many years' of academic work from nurse theorists, is likely to be contentious. However, though this study focused only on teleconsultation, the data from participants made regular reference to the delivery of nursing care more generally. Where respondents described their experiences, they often did so by using other methods of interaction, notably face-to-face or telephone, as comparators against which to judge the strengths and weaknesses of video as a medium of care. The data from nurses involved in NP-Pr teleconsultation also provided insights into activities that took place when physically proximal to the patient. As a result, the study not only provided an understanding of nurses' presence

during video-mediated communication, but also offers a reconceptualization of presence in a much broader context.

The following chapters explore the elements of nursing presence within teleconsultation in more detail. Some of this discussion supports the work of previous theorists; some builds upon it; some contradicts it. The theme that runs through the following four chapters is that presence is a thread intertwined with all aspects of nursing, however it is delivered. Though this supports the concept, developed through decades of nursing research, that presence is a core component of nursing, it refutes the concept of 'presence-as-intervention' suggested by theorists such as Benner.

Identifying relationships between subcategories of presence

Though the four subcategories of nursing presence – operational, clinical, therapeutic and social – emerged from the data relatively early in the analysis, the relationships between them were not initially clear. The next milestone on the path to a substantive grounded theory was the continuation of axial and selective coding to identify and refine the interrelationships and interdependencies between subcategories.

Initially, the four subcategories of nursing presence were conceptualised as separate entities (figure 5.5: p99) each with its own specific attributes and characteristics. However, as the grounded theory developed and evolved, it became apparent that there was overlap between the four. The theory that emerged from the data suggested that clinical presence had elements in common with both operational and therapeutic presence - the clinical functions of a teleconsultation stemmed directly from the operational need, but also linked to the broader therapeutic activities of the nurse. Similarly, there was overlap between the therapeutic elements of a nurse's role and the concept of social presence.

To represent this overlap between subcategories of nursing presence, a third iteration of the grounded theory visualisation was developed. This demonstrated the relationships between different subcategories, illustrated as a chain of concepts, each of them related to the core category of nursing presence (figure 5.6, below).

Figure 5.6: Third iteration of the grounded theory: Subcategories of presence demonstrating areas of overlap

Factors influencing nursing presence

Interviews with RNs suggested that most teleconsultations demonstrated evidence of all subcategories of nursing presence to one extent or another. However, the level to which different subcategories of presence could be achieved (or were perceived to be achieved) varied considerably between different interactions and different clinical contexts. For example, one respondent described how the technology allowed them to have a clinical presence in relation to the acute assessment of burns via teleconsultation:

"...with the telemed, I can see it myself and I can assess it and then I can discuss it with the doctor – I can say...'that bit of red stuff is going to go, that bit of blistering is not, that bit of white stuff is the bit I'm worried about.'" (TC03)

However, the same nurse was adamant that because of the specific characteristics of longer-term burn management, it would not be possible to have sufficient clinical presence within a follow-up clinic:

"...there is no substitute for feeling a burns scar...At the end, when you get to the discharge, there is no substitute for actually feeling it yourself." (TC03)

This pattern of variable 'degrees of presence' in relation to different activities and different nurses was apparent throughout the analysis of data and led to two further developments of the grounded theory.

Firstly, the theory developed to acknowledge that although all four subcategories of presence could play a part in teleconsultations, the degree to which they were achievable would vary. The greater the degree to which subcategories could be achieved, the closer to offering a level of overall nursing presence that could be considered representative of comprehensive, holistic nursing care. The visual representation of this element of the theory also allowed these degrees of presence to be illustrated in relation to each teleconsultation service and potentially even each interaction. In reference to the burns example provided above, the nurse articulated a successful acute assessment that included operational, clinical, therapeutic and social presence (so could be illustrated by figure 5.6). However, though a follow-up clinic may allow a nurse to have an operational, therapeutic and social presence, the participant was adamant that it was not possible to provide an effective clinical presence because of losing the ability to feel the scar itself (figure 5.7, p107).
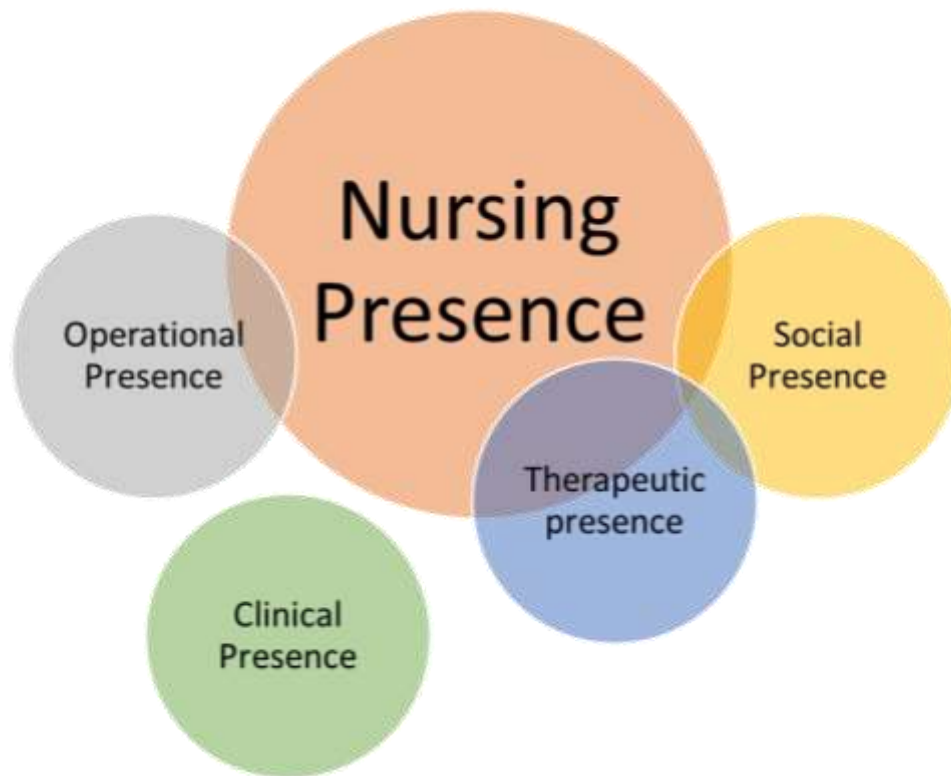
Figure 5.7: Iteration of grounded theory demonstrating how the degree of presence can vary (in this case, teleconsultation does not allow for an effective level of clinical presence in the context of a burns follow-up clinic)

The second development related to degrees of presence was the identification of factors responsible for influencing a nurse's ability to offer presence. In the early stage, the developing grounded theory made little explicit reference to those factors that would enhance, restrict or enable nursing presence and its subcategories. These barriers and enablers had been referred to in the embryonic grounded theory (as the primary themes 'resistance', 'the value of sight' and 'the limitations of video'; figure 5.3, p89) but were only alluded to in the third iteration of the theory.

The data suggested strongly that the extent to which presence could be enabled by video depended on a range of factors. Some of these related to the additional value that sight provided in a consultation above and beyond voice alone:

"… [the video] allows you to get properly involved." (TC07)

"… [patients] like seeing a face. They do like seeing a face…there's definitely some link with what I feel is a difference in the quality of the consultation and that interface with your patient if you can see them." (TC11)

Some elements of the consultation were enhanced even further by the availability of high-definition video technology:

"…I looked at a lady's leg, because we thought she might have cellulitis, and when I said 'go in a bit closer on that bit', you could actually see flakes of skin. I mean it is that sort of high definition." (TC12)

Whilst the visual link provided by the video could enhance nursing presence, limitations associated with the technology, such as technical failure or the inherent remoteness of agents, could inhibit it:

"You've got a slight time lapse, which some people find is difficult to get the hang of." (TC09)

"Sometimes there's equipment failures and obviously that's a big let-down." (TC04)

In addition to impacting on the degree of presence within individual consultations, technical failure also provided a barrier to broader uptake and adoption of teleconsultation by nurses. One respondent described those nurses who…

"…will find problems and faults with things…I think those early niggles were things like occasional sound drop out and picture pixilation. In the early days it was 'oh, this is hopeless – can't use this.'" (TC05)

Technical problems appeared to exacerbate resistance to change, but a number of respondents cited other factors, related to themselves or colleagues, that hindered adoption of teleconsultation:

"...I was scared stiff of it – the first time I used it. Because you're sure you're going to do everything wrong. It's like anything new, isn't it?" (TC10)

"...when we first started using the telemedicine system, there was a lot of fear of the system really – I don't think the nurses liked it because they were kind of on screen." (TC15)

"Technology does worry me because I'm of that generation where I'm still learning about it...you know, I've never Skyped anyone." (TC08)

"The reason people don't engage is they are all busy and they think this is an add-on." (TC01)

In addition to a range of perceived strengths, weaknesses, constraints and enablers, some interviewees also described a series of compensatory and coping strategies that they had developed. Some of these compensatory mechanisms related to managing specific weaknesses or failures with the teleconsultation technology:

"When we started doing the videoconference ward rounds, one of the things that's quite unexpected was patient confidentiality...what we found was that sound travels much more than face-to-face and people really felt that their confidentiality was being compromised. One of the ways we got around that was really basic and low-tech: we actually just requested that all other patients when they're not being spoken to on the videoconference used headphones and watched their televisions!" (TC05)

More often, the compensatory and coping mechanisms related to the inherent weakness of teleconsultation: the inability of the remote practitioner to touch the patient. The main approach to compensating for this limitation was the use of third parties to provide physical touch by proxy. In the case of an N-P teleconsultation, the third party might be another practitioner who was located physically with the patient…

"To find out how deep a burn is, you press on it…you can't do that [with teleconsultation], but you can get someone over there to press on it. So, you can get the camera to focus in and say 'right, press on that bit there, press on that bit here'." (TC03)

…whereas nurses who were proximal to the patient during NP-Pr teleconsultation were themselves used as the third party:

"…a lot of them do it through the nurse. 'Can you get the patient to do this?' 'Can you get missus so-and-so to move that arm?'" (TC10)

The data also suggested that there were occasions where compensatory mechanisms could not overcome the constraints associated with teleconsultation and that sufficient nursing presence could not be achieved. In these cases, the approach of participants was to exclude certain groups or situations from the use of teleconsultation overall:

"You would never see a new patient, a completely new patient [via teleconsultation]." (TC09)

"…if it is someone who is old or has significant mental health problems and we think that telemedicine might be too difficult for them…they can still be offered a face-to-face appointment." (TC06)

The degree to which nurses were able to be operationally, clinically, therapeutically and socially present therefore depended on a number of factors and behaviours linked to the use of teleconsultation. Broadly speaking, these were categorised as enablers, constraints and compensation. These provided the final components of the grounded theory, with the core category of nursing presence, made up of its four subcategories, subject to the impact of the three types of influencing factor (figure 5.8, p112).

Though the grounded theory emerged from data focusing on the use of teleconsultation, nursing presence and its four subcategories are proposed as fundamental elements of nursing *per se*. This and subsequent chapters offer examples of presence in the setting of video-mediated care, but it is also argued that they can be applied to nursing regardless of modality.

The proposal that there are three types of factors influencing the degree to which presence is achieved can also, it will be argued, be applied to nursing more broadly. However, the specific shape and extent of these influencing factors are dependent on the context of care and the characteristics of any medium through which nursing care is provided (e.g. video, phone, face-to-face).
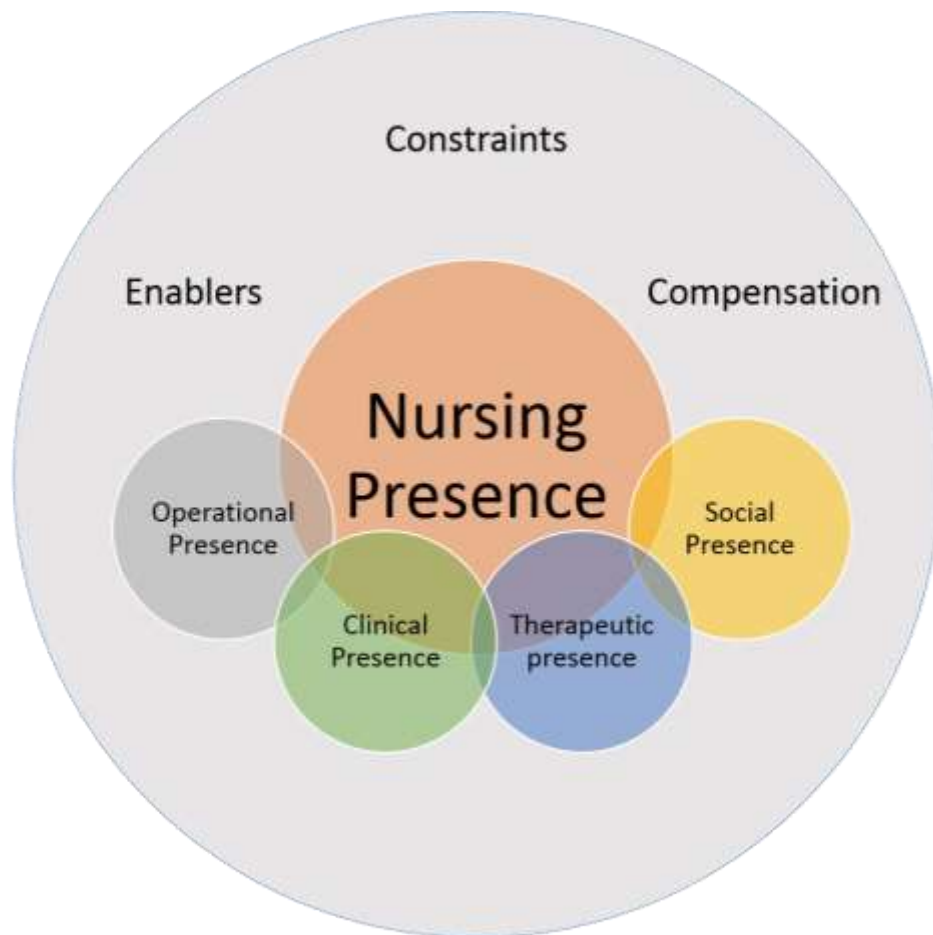
Figure 5.8: Final iteration of the grounded theory of teleconsultation in nursing

Conclusion

Through the constant comparative analysis of data, the grounded theory of teleconsultation in nursing emerged from findings from the early interviews, informed the direction of theoretical sampling, and developed into a complex, connected set of concepts.

It builds on previous theories related to presence in nursing and technology, but also redefines and reconceptualises the work of previous authors in these academic fields. The next seven chapters explore the details, nuances and relationships between these different concepts, in addition to their context in the broader evidence base.

CHAPTER 6: OPERATIONAL PRESENCE - *"BEING THERE TO MAKE SURE EVERYTHING WORKS OKAY"*

The previous chapter described the emergence of activities carried out by nurses during teleconsultation and how these could be placed within four subcategories of nursing presence. The first of these subcategories, operational presence, described the role of nurses related to a range of service-focused tasks that supported the delivery of teleconsultation and associated activities.

The activities encompassed by operational presence involved organisational, administrative and, with a particular relevance to teleconsultation, technical roles (figure 6.1, below). The presence of the nurse from an operational perspective did not directly involve the patient, but facilitated the delivery of teleconsultation services that enhanced the care provided to them. In some cases, operational presence allowed remote ward rounds to take place; in others it reduced clinic waiting times; on occasions, it could facilitate the enhanced care of acutely ill children or adults.

Figure 6.1: Elements of operational presence

Elements of operational presence

Operational presence describes nurses' completion of activities that enable teleconsultation to take place. These can be related to setting up a single teleconsultation or facilitating the delivery of a series of interactions or an ongoing service. By supporting the use of teleconsultation, the operational presence of the nurse is an antecedent to the provision of specific services, the delivery of organisational goals and the enhancement of clinical care.

Of all the four subcategories of nursing presence identified within the grounded theory, operational presence is the least 'care-orientated' and the most 'service-orientated'. The emergence of operational presence as a subcategory acknowledges that though nurses focus to a large extent on delivering individualised, holistic care to patients, their presence is also required to support organisational functions and facilitate the delivery of care to an individual or group of patients.

Operational presence emerged early in the data collection and analysis process; interviewees described a number of roles that did not directly involve the patient and were therefore not encompassed by the other subcategories of nursing presence (clinical, therapeutic or social). As the constant comparative analysis of interview data and previous literature continued, the component parts of the emerging subcategory became clearer.

Operational presence appeared to take many forms, often depending on the particular type of teleconsultation that nurses were facilitating. In some cases, functions of the nurse were similar to the role they would have if care was being delivered without the use of teleconsultation. For example, where nurses discussed occasions on which they were proximal to their patient (i.e. during NP-Pr teleconsultation), their presence was

described from a general organisational perspective. In an exchange with a nurse who was with patients whilst teleconsultation clinics were held with remote physicians, a rather nebulous, but seemingly crucial role was outlined:

TC09: *"...my role is really more facilitating the video clinics…"*

Interviewer*: When you say 'facilitating the video clinic', what does that entail?*

TC09: *"It means being not exactly the clinic nurse, but acting as the nurse within the clinic. So it's kind of supporting the patient, being there to make sure everything works okay"*

Other participants stressed this requirement for the nurse to be present in order to provide a coordinating and organisational role within the provision of teleconsultation services. One nurse who took part in NP-Pr teleconsultations as part of an acute burn service outlined her role in setting up the interaction:

"...we then phone [the specialist hospital]...and then say we want to teleconference so that they can be at the right place at their end and we arrange a time and then we teleconference. I will take my patient into the telemed burns room and then we'll have a conference." (TC04)

Nurses involved in the use of NP-Pr teleconsultation to support the assessment and management of patients with symptoms of stroke described activities associated with coordinating patient flow and organising members of the multidisciplinary team. These manifestations of operational presence also demonstrated the role of nurses in ensuring that clinical information was available ahead of the video-mediated interaction:

"I'll ring the consultant to alert them…we will also have pre-alerted the CT [computerised tomography] scanners." (TC15)

On occasions, the set-up of an NP-Pr teleconsultation included a preliminary briefing session between the clinical actors, but excluding the patient(s);

"We have a VC [Videoconference] call with the consultant, go through all the patients and then there's a consultant to patient consultation." (TC05)

This range of coordinating and organisational activities was particularly pronounced in the case of NP-Pr teleconsultations. This is perhaps to be expected given that, in this context, nurses are the practitioners who are proximal to the patient and therefore responsible for the overall administration of the teleconsultation. In the case of N-P teleconsultations, the only contact with the patient is during the interaction itself, so operational presence is much more limited in its scope. Indeed, in some cases, nurses reporting needing someone to be proximal to the patient to supply this organisational and administrative support:

"…you need – at the very least – a sort of nursing assistant to coordinate the thing at our end…" (TC05)

This need appeared to be a direct product of being physically remote from the patient, and is explored within the discussion of constraints in chapter 11. The importance of the proximal 'third party' as a method for compensating for the impact of remoteness on presence is analysed within chapter 12.

Though operational presence appeared more limited in N-P teleconsultations, some examples were apparent. One nurse described how, following an interaction with a

patient, she would carry out a number of organisational activities to enhance subsequent patient management:

"...if we have actually done a full assessment of someone in a nursing or residential home and we know that they need to come in, we obviously get an ambulance to bring them, we have a consultation with the ambulance staff...we ring the admissions unit and say we've got this patient, they are coming through..." (TC01)

Whether participating in N-P or NP-Pr teleconsultations, an important element of operational presence was providing technical support and advice. Though the nurse's presence in this capacity was not directly patient-facing, it proved crucial in facilitating the smooth and effective utilisation of teleconsultation. Participants reported carrying out a range of technical roles during teleconsultation: some were linked to the initial set-up of the system, some enhanced the quality of the audio-visual link; some were related to offering technical input when problems occurred.

These elements of operational presence offered some overlap with clinical presence, as they often took place in the course of the interaction and with the awareness of the patient. Much of the technical support in relation to setting-up and initiating a teleconsultation was apparent with those nurses who were at the patient's side during NP-Pr interactions. For example, a nurse involved in acute stroke teleconsultation reported their actions during the initial technical set-up of the call:

"It's just switching a button on and off. Leave it for up to five minutes to reboot itself and set itself up. We tend to boot it up as we go to CT, so then by the time you're back, it's sorted itself out and it's ready to work." (TC10)

Another participant, working within a different acute stroke service, described a similar set of roles in the technical and environmental setting up of the interaction:

"So we get the whole bed space ready – get ready for them [the patient]. We'll put the telemedicine machine next to the bed, switch it on. That's all literally we have to do – switch the machine on, the link is established." (TC15)

Nurses reported their presence as having an important operational impact in enhancing the audio-visual quality of the connection once teleconsultations were underway. Specific roles included adjusting the technical set-up and arrangements, including camera placement. These functions were a feature of both N-P and NP-Pr teleconsultations. In the former, where nurses were remote from the patient, some of this was done independently…

"...we can control [the camera] at our end…" (TC05)

…whilst in other cases, communication with a third party at the patient end of the interaction was necessary to enhance the technical quality of the consultation:

"...the most difficult part of it all is getting the carers to put [the camera] down somewhere… 'put it down, click the little button that actually shows you what I can see, and then you'll be able to do it!'" (TC11)

With regard to NP-Pr teleconsultations, participants described their role in ensuring technical quality and effectiveness at different stages of the interaction:

"If we put [the telemedicine] in the wrong position, [the doctor] might say 'can you just move it a little bit closer' or something." (TC15)

This technical support role appeared to become most important when there was a failure in the technology. The presence of the nurse was then necessary to re-establish the link and facilitate the continuation of the teleconsultation. At its broadest level, this linked back to one element of the previously cited description of operational presence by a clinic nurse:

"Being there to make sure that everything works okay." (TC09)

Whilst another participant described a time-honoured approach to dealing with technical failure:

"...9 times out of 10, by turning it off and rebooting it and stuff, I've sorted it out." (TC14)

Where the nurse was not able to directly fix any technical issues, they also served as the go-between with the technology provider to identify and resolve the problem;

"I phone [the technology provider] and say 'look, I can't get a picture on this thing' and they say 'well is it on HDMI1 on input?'" (TC04)

The perceived benefits of operational presence in teleconsultation

The discussion above explored the specific elements of operational presence in the context of teleconsultation. Beyond describing how they offered this organisational, administrative and technical support, participants also talked about how these functions supported a service that delivered a number of benefits. These benefits were sometimes directly patient-focused, some improved the efficiency of existing services, and some allowed the development of new services.

These benefits were not necessarily linked directly to the specific value of using video as a medium (issues that are explored in depth in chapter 10 and which relate more

closely to other subcategories of presence). Instead, they linked to the broader benefits that teleconsultation can provide to patients and organisation. Because the presence of nurses from an operational sense facilitated teleconsultation, a direct line can be drawn between this specific subcategory of presence and the broader benefits of this modality of care.

Two broad areas of benefit emerged from the data. Firstly, teleconsultation was described as allowing nurses and healthcare providers to 'do things differently'. In these examples, the operational presence of nurses allowed a service that was already in existence to be delivered via an alternative medium, often as a method of improving efficiency or clinical effectiveness. For example, some nurses described their presence as being necessary, in part, to organise and facilitate the use of teleconsultation in clinics that had historically been delivered though face-to-face interaction. The benefits of changing to video-mediated clinics were a reduction in travel time, improved access for patients and fewer people on waiting lists:

"...we have a SLT [speech and language therapist] come down here who does wonderful sessions with patients with strokes and Parkinson's to strengthen their voices and you can hear them singing away in the consultation rooms. It's wonderful and we can do it three times a week. So it stops these people having to travel, as they can't travel in and out three times a week – it would be impossible for people to do that." (TC01)

"... [telemedicine] meant that we were able to offer a lot more clinic appointments ...it's to reduce travelling costs and to increase the amount of patients we were going to see." (TC06)

"There's a number of issues with communication and distances…We use video clinics to save people having to travel down…" (TC09)

"…you can see patients in what would have been your travelling time and the waiting lists are lower." (TC07)

"We found that there was a big backlog of patients and patients weren't being reviewed timely, so we introduced [teleconsultation] to see patients, to review patients…now we don't have any waiting list." (TC16)

Similar benefits were reported where face-to-face appointments with patients in the community had been replaced by video-mediated interactions (or where such a change was being considered):

"We have one or two patients with mental health issues who live a long way away and so it would be a long journey for the mental health team to go and visit and sometimes they might feel like they need daily visits…we can do that remotely." (TC01)

"I think that certainly in more rural areas it becomes more and more of a necessity…it would enable the practice nurse to actually visit more people much more effectively." (TC09)

In the more acute sector, the support of teleconsultation by nursing staff allowed a shift from traditional face-to-face assessment by physicians, to a remote out-of-hours service. This appeared to offer clinical benefits by expediting medical management, but also organisational value by reducing the necessity for on-site medical presence. In the specific case of stroke teleconsultation, the importance of an efficient, seamless clinical pathway for patients with symptoms of acute stroke is self-evident. However, the service was also described as allowing for the delivery of national targets on

service provision. Specifically, by facilitating the remote assessment of suspected stroke patients by specialist physicians, the operational presence of the nurses interviewed enabled their organisations to offer a 24 hour, seven day a week service as required by national standards for stroke service delivery (Department of Health, 2007):

"We offer a 24/7 thrombolysis service…and the telemedicine is used to facilitate that. We went 24/7 and obviously we needed something that would support that." (TC15)

Evidence also emerged from interviews that a second, subtly different, type of service was supported by teleconsultation. By nurses providing operational presence and facilitating teleconsultation services, organisations were able to 'do different things'. This involved the use of teleconsultation to deliver services that did not previously exist or only existed through a less rich medium (notably the telephone). For example, the operational presence of nurses allowed provision of a service through which community patients could, whenever they wished, have an N-P teleconsultation that offered assessment, triage, advice and support. Prior to this service, the only options would have been to contact, via telephone, a GP or the ambulance service. This enhanced, video-mediated service therefore offered a range of benefits for patient, practitioners and organisations.

Where patients had been provided with access to on-demand teleconsultation with a specialist nurse, the benefits of this new service were enhanced support for vulnerable people:

"I see ourselves as almost a branch of the community support network for these individuals…" (TC02)

"You can cover far more ground than the people out there can do…" (TC11)

In addition, the service also allowed more effective use of specialist nursing resources for community-based patients:

"I can use my clinical assessment skills to far more people in a shorter space of time." (TC12)

Benefits were also apparent when the operational presence of nurses allowed for a teleconsultation service to be available within care and residential homes. Again, this service offered an example of 'doing different things', with the only previous outlet for clinical concerns on the part of the home being a GP or the ambulance service. This teleconsultation-facilitated service seemed to therefore deliver additional benefits for practitioners based within these institutions:

"[care home] staff find it really beneficial to have an acute sister, a senior acute care nurse, on the other end of a video consultation that they can ask anything of…[Patients] feel that they have support whenever they need it and to be able to talk to somebody face-to-face." (TC01)

"…the staff feel supported, they feel that they've got a qualified nurse for the residential homes especially. Just for advice they'll ring, and just for peace of mind for them…" (TC13)

This perception of additional support outside of existing structures was also described in relation to the use of teleconsultation in palliative care services. In particular, the service was conceptualised as a supplement to, not a replacement for, traditional face-to-face care:

"You can offer a patient a telemedicine pad for end-of-life care, but they're obviously still going to need the District Nurse to go in and they're going to need the palliative care nurse. So what you're offering them is something that will take over when they are not around." (TC12)

One of the services from which participants were sampled and which fell into the category of 'doing different things' was the use of video-mediated communication to support the work of critical care nurses (often referred to as 'eICU'). This service offers an entirely new support structure to nurses in the critical care setting and delivers a number of perceived benefits to practitioners, patients and organisations:

It was very much to offer expertise that they wouldn't normally have without transferring a critically ill patient. So, without risking that transfer, they would have the ability to talk to somebody who could talk them through certain aspects and limit the number of transfers they had to do. It's very much expertise at their fingertips. (TC17)

The same respondent also highlighted how the additional support was of value to nurses in particular critical care environments:

They used it sometimes for assisting staff in the sense that they have all side rooms, so sometimes nurses desperate for a checker, or they needed to go out and order something from pharmacy or sometimes the person at the bedside would ask if they [the remote nurse] could 'keep an eye.' (TC17)

Some services demonstrated elements of both approaches – doing things differently and doing different things. For example, nurses involved with the delivery of a teleconsultation service to enhance acute burn care built on current networks and

referral patterns, but replaced telephone communication with video ('doing things differently'). However, the move to a video-mediated service allowed for treatment to be provided in the 'spoke' hospital, under supervision from the 'hub', in a way that had not been previously possible ('doing different things').

From the perspective of the specialist centre, this offered an opportunity to prioritise the use of resources…

"…from our point of view from this end, it is about making sure that we have the right patients coming to us." (TC03)

…whilst also offering a better service for patients and their families, in addition to specialist unit staff:

"[teleconsultation] might well save [patients] a trip to the burn unit…equally, it will save the person at the other end." (TC04)

The discussion above outlines findings that suggest the operational presence of nurses during teleconsultation supports more efficient and effective clinical services. In addition, the data also suggested that some participants view services as providing additional benefit above and beyond procedural efficiency. In particular, in the case of nurses reaching out into the community with teleconsultation, there was a suggestion that their work helped to reduce the reliance on GPs and hospital services:

"I think hospital admissions [from care homes] have really decreased." (TC13)

"…what we wanted to do was enhance the care that patients already got outside of the Trust and improve it. We also wanted to try and prevent them being admitted, so to see whether we could support them out of the hospital remotely…" (TC01)

"So it is almost like more of an A&E triage nurse if you will and the staff are sensibly using us instead of bringing their residents to hospital." (TC02)

"If it saves a community matron having to go out or [patients] getting really, really stressed and ringing the GP, that's absolutely fine." (TC11).

By providing operational presence during teleconsultation, through administrative, organisational and technical activities, nurses therefore supported services that offered broad benefits to a range of stakeholders. They increased access to services, they streamlined the patient pathway, enhanced the quality of care, reduced pressure in some areas of practice and facilitated the achievement of organisational targets.

Operational presence in context

The term operational presence has not been used in literature previously to describe a subcategory of the nurse's role. In addition, the organisational, administrative and technical elements of nurses' roles in teleconsultation have not been explored in great detail before. However, the non-clinical elements of nursing practice during teleconsultation have been described briefly in previous literature and, outside of technology-mediated care, there has been recognition that nursing is not purely focused on the delivery of direct care to individuals. Though this study therefore provides a new conceptualisation of nursing roles not linked to direct care, it also builds on existing evidence.

In the outpatient setting, studies of nurses' workload during face-to-face clinics suggest that a range of non-clinical duties are carried out. Blay et al. (2002), in a study of oncology outpatient nurses, identified that their roles were an amalgam of clinical and administrative duties. The authors found that nurses spent over 70% of their

working day carrying out tasks that were not directly associated with patient care but supported the function of the clinic.

In the acute sector, a study of ED nurses identified that almost half of their activities could be categorised as 'indirect' care, taking place away from the bedside (including activities such as clinical documentation and supplies management). In contrast, only a quarter of activities were categorised as direct care at the bedside (Hobgood et al., 2005). In the intensive care setting, a third of nurses' time may be spent engaging in indirect care tasks such as coordination of care and equipment set-up (Abbey et al., 2012). Elsewhere, the requirement for frontline nurses to carry out administrative, technical and coordinating activities in addition to their direct clinical responsibilities has been reported in contexts such as mental health care (Cowman et al., 2001), residential homes (Perry et al., 2003) and operating theatres (McGarvey et al., 1999). All of these papers described 'indirect' activities and roles that would fit within this study's definition of operational presence.

Though the amount of literature exploring the specific role of the nurse in teleconsultation is limited, there is some reference to the need for completion of indirect functions that support service delivery. Kiernan and Demaerschalk (2010) described a range of different nursing roles within stroke teleconsultation ('telestroke') services - including planning, coordination, education, clinical and technical support. Though many of these functions did not involve direct patient care, each provided a crucial component in the delivery of the service. Similarly, Rafter and Kelly (2011), in their description of a nurse-led implementation of a telestroke service in Philadelphia, highlighted the necessity of nursing input at all stages across the care continuum. Again, though these roles included a range of clinical and therapeutic functions that were directly patient-focused (and therefore have parallels with clinical,

therapeutic and social presence), the authors also described wider, indirect activities without which services could not be delivered.

Elsewhere, Torppa et al. (2006), in a study of 30 primary care teleconsultations (each with a GP at one end of the video-link; the nurse and patient at the other) found that a core aspect of the nurse's presence was to "…handle the technology…" (Torppa et al., 2006:308). The importance of these indirect roles was also discussed by Monk and Watts (2000), who identified the substantial impact that the arrangement and set-up of a teleconsultation had on the effectiveness of the process.

This study supports previously published evidence that nurses have a series of roles and activities outwith the provision of direct patient care. Though these roles often support the delivery of care, they do not involve the patient directly and may be carried out without the patient being present at all (either physically or virtually). A picture of nursing presence is proposed that is not reliant on the nurse simply being an agent of 'bedside' care. The development of operational presence as a subcategory of the nursing role may therefore provide a challenge to traditional perceptions of the nurse as direct care provider.

This challenge has been suggested previously, albeit using different terminology. Allen (2004), in a review of field studies into the nursing role, offered a blunt clarification of the difference between professional expectations of what nurses should do and the reality of what they actually do. Allen (2004:279) described this as "…the mismatch between real life nursing work and the profession's occupational mandate with its emphasis on emotionally intimate therapeutic relationships with patients". Instead of an idealistic view of nursing, Allen (2004) proposed a series of 'bundles of

activity' that nurses carried out, including managing patient throughput, managing the work of others and managing information.

The grounded theory of teleconsultation does not discount the role of nurses as providers of holistic, individualised care to the same extent as Allen (2004). Indeed, these more patient-focused elements of the nursing role are discussed in detail within subsequent chapters. However, many of the elements encompassed by operational presence, such as promoting the smooth running of out-patient services, expediting emergency care pathways and facilitating multidisciplinary communication, mirror Allen's bundles of activity.

Conclusion

The category of operational presence described within this chapter emerged from the data but builds upon findings from previous studies of nurses' work. Though nursing may be still be considered to be a profession centred upon the delivery of direct patient care, the truth is more complex. In relation to teleconsultation, direct care responsibilities are supplemented (and sometimes underpinned) by a range of administrative, coordinating and technical roles. Without the successful achievement of these functions and without the ability to offer operational presence, teleconsultations would not take place, services would not be delivered and care would not be enhanced.

CHAPTER 7: CLINICAL PRESENCE - *"SEEING THE PATIENT, DEVISING A PLAN, EVALUATING…"*

The previous chapter highlighted that nurses' roles within teleconsultation included a series of tasks, activities and functions not directly involving the patient. Much of the feedback from interviews also recognised that during teleconsultation, a wide range of direct patient care tasks were carried out by nurses, even in circumstances where they were remote from their patients. Many of these tasks formed the basis for the emergence of *clinical presence* as a subcategory within the grounded theory.
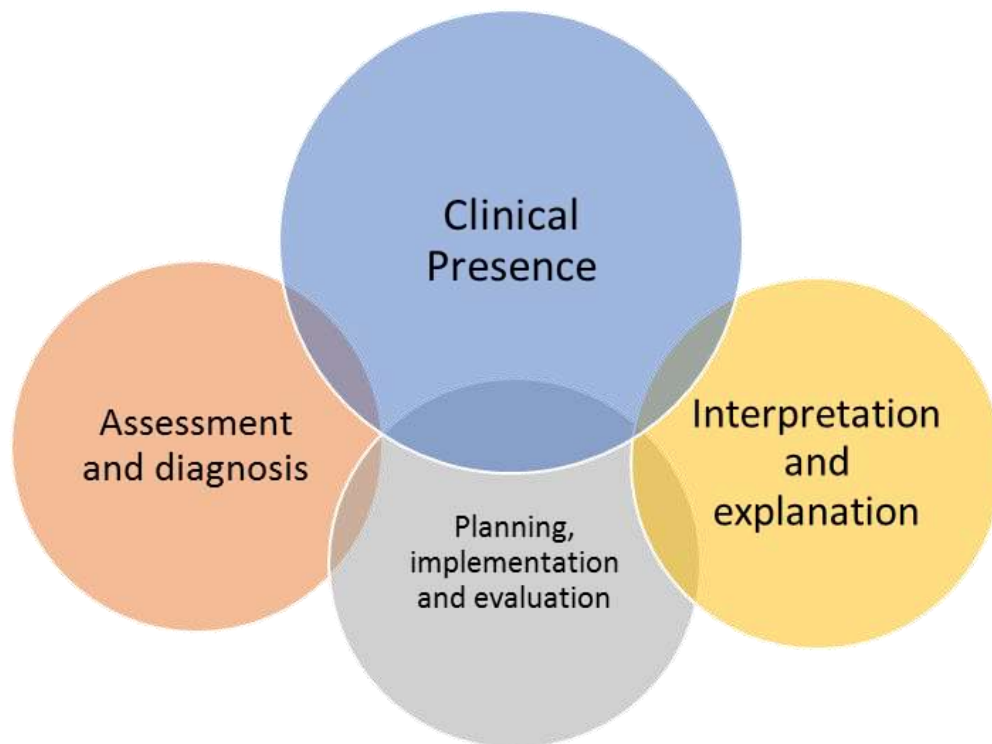

Figure 7.1: The elements of clinical presence

Elements of clinical presence

Clinical presence represents activities linked to the provision of direct patient care, including assessment, diagnosis and implementation. Within this broad definition are a number of important nuances, including the overlap with other subcategories of presence and the impact that the type of teleconsultation has on the tasks and activities carried out.

The specific elements of clinical presence identified were largely context-dependent. The types of activities reported by participants varied according to the sector (acute/community/outpatient) and the clinical needs of the patient (e.g. stroke care; burn care). However, the most obvious differences were apparent in relation to the type of teleconsultation being described (N-P vs. NP-Pr). Despite these differences though, the evidence emerging in relation to clinical presence identified some core functions that were common across contexts, notably assessment, prescription, implementation and education.

Many of the participants described how their clinical functions during teleconsultation were essentially the same as those they would carry out in any traditional context of care. The only difference, particularly for those involved in N-P teleconsultations, was the medium through which they completed these activities:

"...you're just doing what you'd normally do for the patient." (TC15)

"...you're still seeing the patient, devising a plan, evaluating – you know, you're still doing the nursing process with them…" (TC13)

"...we are still using the same nursing assessment practice as you would on any individual." (TC02)

Assessment

One of the strongest elements of clinical presence to emerge from the data was that of patient assessment. Regardless of the clinical context and type of teleconsultation, participants described how their interactions included some type of assessment, whether remote from, or proximal to, the patient.

Where nurses were proximal to their patients during NP-Pr teleconsultations, their assessment tasks appeared similar to those adopted when taking part in non-video-mediated care, utilising a range of hands-on, verbal and non-verbal skills. Where roles differed from traditional care was the interaction with the remote practitioner during assessment. Nurses described roles in which they either acted to facilitate an assessment by the remote practitioner or they carried out their own assessment, but under the supervision of other parties. When they were physically next to the patient, the nurse would act as a proxy for the remote clinician, gathering, interpreting and communicating any relevant clinical information. On occasions, interactions required a combination of both of these roles, with the nursing assessment supplemented by additional information requests from practitioners. One of the best examples came from nurses assisting in the video-mediated assessment of patients with symptoms of stroke:

"Some of the consultants will speak directly to the patient…but a lot of them do it through the doctor and the nurse. 'Can you get the patient to do this?' 'Can you get missus so-and-so to move that arm?'" (TC14)

"...we got through the process of doing our assessment again with [the doctor] watching…They will sometimes – if they've not seen it properly – just ask you to do things again, or sometimes they'll say 'will you just get them to do such-and-such.'" (TC10)

"When we first started it, the Doctor would watch the nurse do the assessment…They will ask you to double-check things and 'can you get them to do that?'"(TC15)

A nurse who was proximal to her patients during an oncology clinic facilitated by NP-Pr teleconsultation described a similar role:

"If somebody comes with a problem that needs examination, then it'll be me that does it, rather than the consultant." (TC09)

In N-P teleconsultation, the assessment task was often led by the remote nurse but carried out with the assistance of any practitioners proximal to the patient. Verbal history taking was completed through direct interaction between the nurse and other agents, as described by nurses who remotely assessed patients in residential care facilities:

"I said, 'Okay, has she got any known breathing problems', went through the usual history, 'does she have any inhalers?' you know." (TC02)

"You get the history off the carer; what they found, why they flagged up this concern. Then you go to the patient and they will tell you." (TC11)

"I get a history from the carer. I ask to then see the patient…and then look at the patient and basically ask the patient if they're able to answer how they feel – if they corroborate what the carer's already told you." (TC12)

Verbal history taking was often supplemented by the inclusion of objective data. In NP-Pr teleconsultations, proximal nurses supplied this information – for example, participant TC05 described providing data on blood results to the remote consultant. In N-P interactions, participants described objective data being supplied, where possible, by any other carers who were with the patient. One participant, who ran a diabetes clinic via N-P teleconsultation, described being supported in the gathering of objective data by a healthcare assistant at the patient's side:

"So the girls [the healthcare assistants] put someone's blood glucose meter on and attach it to 'Diasend' [a web-based diabetes management system]. I can see all the blood glucose on the computer in front of me as well." (TC06)

Where nurses assessed patients in the community, they were able to call upon 'frontline' practitioners to provide this objective data where required:

"...if we need a blood pressure doing, we can ask a community nurse to go in and do it." (TC01)

In addition, where a physical examination was required, remote nurses utilised the proximal carers as 'a pair of hands' – an issue that is explored in greater depth in chapter 12:

 "I might say to [the carer] 'does his tummy feel hard?' or 'does it feel soft?'" (TC12)

"If I wanted to see the cap [capillary] *refill, I would say 'I want to see the cap refill on that wound, I wonder if you could press the left hand side of it with your finger and just put the camera right on it so I can see what you are doing.'"* (TC04)

The use of video provided an additional channel through which nurses could gather assessment data during an N-P teleconsultation. The importance of visual assessment

was highlighted by a number of participants as a mechanism for identifying any areas of concern:

"You can assess the respirations for yourself. You can tell if somebody's breathless, you can tell if they're distressed...you can see if someone's cyanosed, what kind of pallor they've got. I was able to see from somebody that she was dehydrated because her mouth was dry; her tongue was dry." (TC12)

"...you can still do an ABCDE [Airway, Breathing, Circulation, Disability, Exposure] *on them. You can still look at them and you can still get quite a good picture as to whether they're not quite right or not...you can still look at them and think 'no, there's something not right, let's explore more' and then dig deeper into different things."* (TC13)

On occasions, this visual assessment was described as being broader than simply looking for physical characteristics:

"We're looking at the whole setting. I mean, just even from the point of view of 'does it look like they are functioning on a day-to-day basis?'...how they're dressed, are they dressed appropriately, are they groomed, are they not groomed, how are they sitting? Like I say, how are they walking? Everything about them. You are just taking in those cues constantly. That's all part of your assessment." (TC11)

The use of a number of assessment strategies, such as verbal history taking, use of objective data, physical examination and the evaluation of visual cues, underpinned the diagnostic process that emerged as part of teleconsultation. Whether led by the nurse or by a remote practitioner, this diagnostic process provided the bridge between assessment and the prescription of care interventions:

"...we've got a proforma where we literally go ABCDE. So we'll look at the things we would look at in a hospital if we were doing an outreach visit...We do a full holistic assessment of them...and then make a decision about what we need to do." (TC01)

"With the telemed I can see [the burn] myself and I can assess it and then I can discuss it with the doctor. I can say, 'you've assessed it a 28% [coverage], you've got about 9% there, that bit of red stuff is going to go, that bit of blistering is not, that bit of white stuff is the bit I'm worried about.'" (TC03)

"So you kind of do your assessment, then you think diagnosis to a degree. Your thinking 'right – I think it could be A, B, C or D, or it might just be A or B'. And then you decide on the treatment." (TC13)

"[the consultant] would watch the nurse perform the NIH-ASSESS scale [a specialist stroke assessment tool]*...the consultant would then say 'yes – they are a potential for thrombolysis.'"* (TC15)

"...it gives you an idea of how urgently you maybe need to flag up to somebody else. Do they need to come for their foot or legs? Or do they need to come and get booked into the next foot clinic?" (TC16)

Prescription, implementation and evaluation of care

The prescription of care by nurses during teleconsultation was most obvious in N-P interactions, with the remote nurse providing advice and instructions to the patient and/or proximal carers. For example, an earlier quote from a participant described the diagnosis of burns severity through teleconsultation. The same nurse then outlined the type of care that might be prescribed as a result:

"So you say 'I think if you look at it we have got this amount of % [burn] and this amount of that, so you are going to have to start resus; this is a child that needs resus…you need this, this and this and these are your calculations and these are the fluids you need.'" (TC03)

Other participants from different contexts also described the ability to prescribe care interventions whilst remote from their patient:

"…we can say 'right then, let's push some fluids' – we can look at the [electronic] record to check there are no contraindications and say 'push fluids, get some Paracetamol down them and we'll see if we can get you a prescription for some antibiotics." (TC11)

The prescription of care during teleconsultation described in the study also incorporated an element of joint planning and discourse to agree a clinically appropriate and achievable course of action:

"There is room for negotiation…there might be a doctor and a nurse there, so the doctor might say 'yes, that sounds like a really great plan' but the nurse might say 'but we don't have that lotion or potion or that particular dressing'. So that gets built into the negotiation." (TC04)

In some cases, the prescription of care led to the delivery of a number of different interventions. In the case of N-P teleconsultations, most implementation was carried out by practitioners that were proximal to patients. However, some implementation was also facilitated by the remote RN, where referrals or transfers to other care facilities were required - functions that overlapped with elements of operational presence discussed in the previous chapter:

"...you might feel you need a District Nurse to go out and dress a wound or do a full set of obs. Or you might need a GP to go out." (TC12)

"...we can task community teams and GPs to visit a patient if we feel that is necessary...there is no reason at all why we can't task or arrange for a visit the next morning." (TC01)

In some cases, signposting and referral to other services appeared to go beyond the original purpose of the interaction. For example, one participant described an assessment of a patient's physical well-being which become more focused on social care needs:

"...if we have a worry and you think [patients] are perhaps not as clean as they were a few days before, the patient or the environment, or they are not able to brush their hair, or they aren't thinking to do that or those kinds of issues are really valuable and we have actually done things where we have actually got people from social care going in, so we have arranged home helps and we have arranged meals on wheels, that sort of thing." (TC01)

In NP-Pr teleconsultations, the implementation of prescribed care was carried out by the proximal RNs. Interventions took place during the ongoing teleconsultation, or immediately afterwards. Often, the intervention was coupled with evaluation of outcomes and ongoing monitoring, as described in relation to stroke teleconsultation:

"[the consultant] makes the overriding decision. We've done the assessment again in front of him. He's watched us...if the patient agrees and the consultant's happy, we then go ahead and give the thrombolysis...once they've had the bolus, you given them

maybe 10 minutes…then you see if things are starting to improve. [The consultant]

usually logs-off at that point.” (TC10)

This monitoring and evaluation element of clinical presence was also seen in N-P teleconsultations, providing a link back to the process of assessment and diagnosis:

“…with us every few hours just having that contact with them to make sure that things

aren't getting worse.” (TC01)

“In some cases, where possible, you would say 'well, we'll keep an eye on this. I'll

ring you back in an hour and we'll have another consultation.'” (TC12)

Interpretation and explanation

The final element of clinical presence that emerged from the data was the interpretation and explanation of clinical terminology and technological issues. Though an important clinical role, it was this interpretative and explanatory area of presence that offered some overlap with the 'softer' side of nursing described in the subsequent chapter as part of therapeutic presence.

In some cases, the explanation provided was extremely broad, helping the patient to interpret the purpose and process of the teleconsultation. This 'situational interpretation' appeared to be a particularly important role played by proximal nurses during NP-PR teleconsultation:

“I try to explain as much as possible what's happening…'so that's why we do it this

way, because the consultant lives [miles away] and getting him here would take us an

hour' sort of thing.” (TC14)

“We explain to the patient that the consultant is at home and is reviewing the patient

– they're watching what we do.” (TC15)

Nurses also described roles that could be considered as 'technical interpretation', in which explanation and clarification was more keenly focused on the teleconsultation equipment itself. These interpretations served to demystify the role of the technology and were described as being aimed at patients and carers:

"...explaining to the patient what all the kit is and how it works..." (TC07)

"...we just guide the staff on the use of the kit and equipment to get the best possible visual outcome for ourselves." (TC02)

Finally, particularly for those nurses with the patient during an NP-Pr consultation, there was sometimes a need to act as a conduit for questions and information being provided by the remote clinician: 'information interpretation'. Though this was sometimes described as taking place during the teleconsultation, interpretation of information from remote practitioners also took the form of a debrief, where any issues were clarified and questions encouraged:

"...if there are any issues from the consultation, we can kind of have a chat afterwards about how they feel, how it went and any issues that way." (TC09)

These 'closing thoughts' that nurses shared with the patient also served to summarise the findings of the interaction and the plan for moving forward:

"...so I can say to [patients] 'yes I need to see you, that is serious, but it's not very serious, so how about we sort it out for tomorrow?'" (TC03)

This interpretation of information also served an educational function for other practitioners or informal carers. Participants described how, by explaining and guiding others, their role within teleconsultation could enhance the skills and knowledge of agents within the interaction:

"...so I think it is almost like some form of clinical education in a way, but non-direct or non-organised…So it is almost like a junior member of staff shall we say, that we have to guide and teach and educate about what skill you would like them to perform as well." (TC02)

Clinical presence in context

The subcategory of clinical presence offers a new conceptualisation of the range of direct care roles carried out by nurses during teleconsultation. However, some elements of clinical presence have been identified in previous nursing research, though not under that title and rarely in the context of teleconsultation.

The use of assessment during teleconsultation emerged very strongly from the data, a finding which resonates with existing evidence from broader nursing practice. The importance of nurses assessing patients' needs and identifying changes in their health status has long been recognised (West, 2006; Barrett et al., 2012; Osborne et al., 2015). From a workload perspective, clinical assessment has been observed as the most common element of direct patient care in environments such as oncology outpatients (Blay et al., 2002), critical care (Abbey et al., 2012) and urology (Pfeil et al., 2012).

The techniques identified as being utilised by nurses as part of their assessment activities also support findings from elsewhere. The physical assessment described, whether carried out remotely or when proximal to the patient, is a crucial part of collecting patient data (Osborne et al., 2015). Other approaches described in the context of teleconsultation, such as verbal history taking, primary surveys using the ABCDE approach and recording of vital sign data, are all established tools utilised by nurses during face-to-face interactions (Considine & Currey, 2014; Osborne et al., 2015; Quigley & Martin., 2014).

Assessment during teleconsultation therefore mirrors the process that might be seen in a more traditional interaction; it is the modality through which these assessment tasks take place that is different. There is some previous literature that supports the grounded theory in relation to the assessment techniques within technology-mediated interactions. In the context of telephone triage, nurses use a range of questioning and listening techniques to assess patient condition and underpin their decision-making (Purc-Stephenson & Thrasher, 2010; Pettinari & Jessopp, 2001). In teleconsultation, Sorknaes et al. (2011) described how nurses used clinical observation and vital sign data to underpin their assessment of remote patients with COPD. In a broader study of presence during teleconsultation, Sävenstedt et al. (2005) provided a transcript of a video-mediated interaction in which the remote nurse used a visual assessment to judge the condition of a care home resident's eye. Nurses involved in teleconsultation to support critical care also utilise vital signs, laboratory tests and observational skills to support patient assessment (Williams et al., 2012; Goran, 2010).

Chan et al. (2001) described nurses using visual examination and verbal communication with patients to remotely assess a range of issues, such as inhaler technique, risk of falls and severity of wounds. The same study also outlined how nurses carried out a number of other functions via teleconsultation. These included prescribing wound management products or explaining leg-strengthening exercises to patients at risk of falls (Chan et al., 2001). These diagnostic and prescriptive elements of the nursing role are considered to be key elements of nursing practice regardless of the care setting (Barrett et al, 2012). Equally, the implementation and evaluation of care are core competences associated with the role of RNs in the UK (Nursing and Midwifery Council (NMC), 2015).

There was only brief mention of 'hands-on' implementation of care by participants involved in NP-Pr teleconsultations. It is possible that this was a product of the focus of the interviews being on the teleconsultation itself, rather than what happened afterwards (i.e. the completion of prescribed care activities). Most of the discussion of physical care delivery came from those nurses involved in stroke teleconsultation. Again, this likely reflected the fact that implementation of care (usually the administration and monitoring of thrombolysis) takes place *during* the teleconsultation itself. Where stroke teleconsultation has been described elsewhere, the administration of physical care is an important element of the nursing role. Rafter and Kelly (2011) outlined the role of the 'direct care RN', who was responsible for many of the same areas described by participants in this study: patient assessment, administration of thrombolysis and monitoring of well-being.

One care intervention that fell within the scope of clinical presence and which emerged strongly as an area of practice was the provision of information and advice during teleconsultation. On some occasions this was described as giving information to patients, either directly (in NP-Pr interactions) or through the medium of video (in N-P interactions). Again, though this study is the first to describe these activities within a structured framework, the activities themselves have been described elsewhere. Evans et al. (2012) described a telemedicine service for people with diabetes in which the most common purpose of interactions was to provide advice on medication dosage. Medication advice has also been highlighted as a role of the teleconsultation nurse in relation to patients with COPD, multiple sclerosis or hypospadias (Sorknaes et al., 2011; Zissman et al., 2011; Pfeil et al., 2012). Other examples from the current study involved nurses giving instructions to practitioners at the other end of a teleconsultation. Again, this element of care-giving has been reported elsewhere. For

example, Williams et al. (2012:64) described remote eICU nurses educating bedside practitioners and "walking them through" challenging situations or procedures.

Information-sharing linked to an important element of clinical presence, alluded to earlier, in which nurses communicated and negotiated with other practitioners (who were either proximal to or remote from the patient) about the care required. The impact that teleconsultation had on relationships and dynamics between practitioners during these negotiations is discussed in subsequent chapters. However, the fact that teleconsultation required cooperation and negotiation between its clinical agents has been recognised to some extent previously (Esterle & Mathieu-Fritz, 2013).

Away from technology-mediated care, Schluter et al. (2011), in a constructivist exploration of the role of RNs in Australia, identified how negotiation had become a key part of nursing practice. In the study, RNs reported using negotiation (often with unregistered colleagues) to ensure that patient care was delivered in a timely, safe and coordinated manner. Though the challenges to achieving proximity faced by RNs in Schulter and colleagues' study were related to workload, the importance of negotiation appears transferable to situations where geographical remoteness is the barrier to being with a patient.

The final element of clinical presence identified was that of the nurse as interpreter. As outlined earlier, this had three sub-elements: situational, information and technical interpretation. Though this suggested framework of elements was devised with specific reference to teleconsultation, it can be seen in a broader nursing context as linking to the role of the nurse as an advocate for the patient. O'Connor and Kelly (2005) described elements of the nursing role as 'bridging the gaps' between the patient and other people and/or healthcare systems. Some of the interpretation

functions outlined in this study fit neatly within O'Connor and Kelly's description, suggesting once again that many roles carried out by nurses during teleconsultation mirror those seen in care more generally.

Though interpretation has been described in the broader nursing literature, references to similar roles have also been made specifically within technology-mediated interactions with patients. Explaining to the patient the purpose and process of teleconsultation – termed situational interpretation in this current study – has been described as an important element of the preparation for an interaction (Esterle & Mathieu-Fritz, 2013). Technical interpretation, where nurses clarify and explain the specific functionality of the technology itself, has also been evident in earlier descriptions of technology-mediated care. Korhonen, et al. (2014), in an integrative literature review of the ethics of technology in nursing and caring, identified how nurses should assume the role of interpreter between the equipment and the patient. Though the technological scope of their review was broad, the principles of it can be applied to teleconsultation and are supported by this study's findings on the manner in which nurses explain the function of the video technology to their patients. In another discussion of the broader use of technology in nursing care, Barnard and Sandelowski (2001:371) described nursing as "the bridge spanning the divide between technology and humane health care". By ensuring that they act as this bridge between the teleconsultation technology and the patient, nurses can mitigate some of the potential anxieties felt by patients about the use of video to mediate their interactions.

Conclusion

Clinical presence is the subcategory of nursing presence with the greatest focus on illness, diagnosis and cure. However, it also allows nurses to ensure that care is holistic, needs-based and provided in partnership with the patient. The framework for clinical presence developed through this study provides a structure with which these direct care activities can be conceptualised and understood. It also clarifies specific areas of practice (such as the elements of interpretation), building upon and developing previous understanding of the nursing role.

The activity that emerged most clearly in this subcategory was that of patient assessment. However, the study also demonstrated that during teleconsultation, nurses carry out a wide range of other patient-facing, clinical roles such as diagnosis, prescription of care, monitoring and evaluation. The provision of advice and information to agents within the teleconsultation, whether patients, carers or practitioners, is also an important element of clinical presence. At times, this requires nurses to act as interpreters of situations, clinical information or technology; sometimes, nurses need to negotiate with other practitioners to agree the best care for the patient. All of these functions are completed in a bid to bring about direct patient benefits: to identify and address deterioration; to provide high-quality, evidence based care; to enhance understanding. However, these desired outcomes of clinical presence do not address all the needs of patients. Those 'softer' needs of patients, such as reassurance, security, safety and trust, will come not simply from the completion of clinical functions, but require nurses to offer the therapeutic and social presence discussed in the next two chapters.

CHAPTER 8: THERAPEUTIC PRESENCE – *"YOU CAN REASSURE THEM AND THEY ARE REASSURED BY YOU"*

The subcategories of operational and clinical presence discussed in the preceding chapters describe the 'nuts and bolts' of providing nursing care during teleconsultation. Whereas operational presence incorporated administrative, organisational and technical requirements of nurses, clinical presence encompassed a range of direct-care, patient-focused activities and tasks.

The data from participants suggested that their role in teleconsultation was more than simply completing a range of tasks or delivering direct clinical care. Throughout interviews, there was information from nurses that led to the emergence of a subcategory of nursing presence focused less on discrete tasks and more on instilling a sense of well-being within their patients. As this category continued to mature and develop, it became 'therapeutic presence' and encompassed three main elements (figure 8.1).
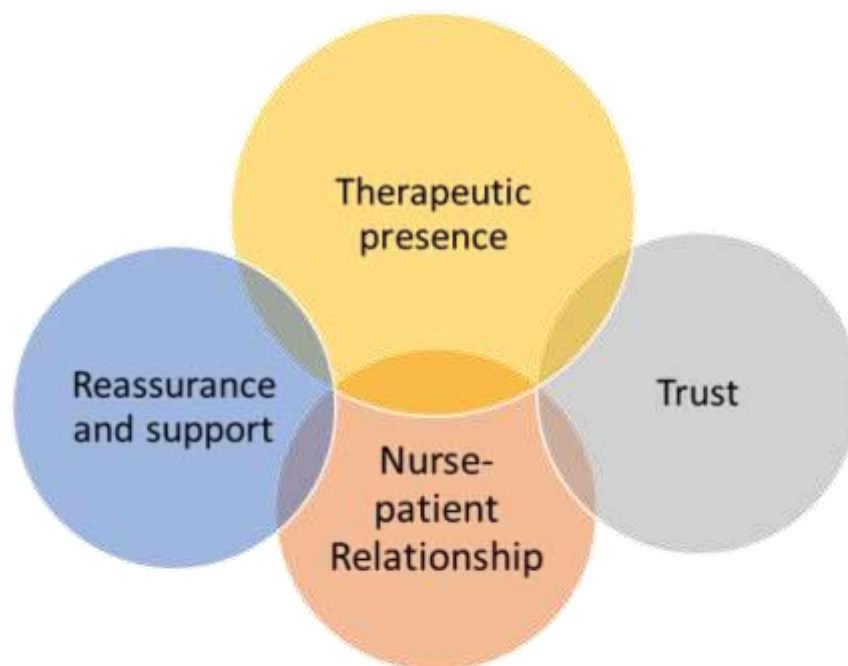

Figure 8.1: Elements of therapeutic presence

Elements of therapeutic presence

Therapeutic presence describes the role that the nurse plays during teleconsultation to enhance patient well-being (and not just their physical health) and develop a supportive, trusting relationship. In some cases, therapeutic presence is directly related to activities that are carried out as part of clinical presence: for example, the interpretation of findings from a physical assessment or the provision of health advice could have a positive impact on the nurse-patient relationship. In other cases, therapeutic presence is achieved through nurses' activities and actions that fall entirely outside any of the operational or clinical roles described in previous chapters.

There is some association between therapeutic and clinical presence in relation to patient assessment. In the previous chapter, the process of assessment using tools, verbal-history taking and physical examination was described as a means through which patients' needs could be identified. However, from a therapeutic perspective, there was also some evidence that elements of the assessment process during teleconsultation could support the development of a nurse-patient relationship. One nurse involved in N-P teleconsultation gave an example of how communication skills were used to underpin her assessment of a patient. Not only did the use of clinical skills provide richer assessment data, but her description also alluded to the development of a therapeutic discourse:

"...I dealt with a lady the other day and we sort of got chatting. And I think it's how much you delve into a patient as well. Instead of just saying 'okay, you're short of breath, right?'; but 'are you managing to get into the bath?' 'Are you managing to cook your meals?' You know, you've got to explore that bit more." (TC13)

Most of the data that led to the emergence of therapeutic presence as a subcategory related not to a peripheral benefit of clinical activities, but to the outcomes of specific approaches to patient care. The outcome described most commonly as an aspect of therapeutic presence was 'reassurance'. Some participants described situations where the development of a trusting, therapeutic relationship became the primary focus of the interaction. This relationship could then act as a vehicle to offer the reassurance and support required by patients:

"There is a chap we had – one of the COPDs we had – and one of the nurses spent four hours on the video link to him, off and on, not continually. But he was very anxious. He said that he didn't want to come into hospital. He just wanted someone to chat to him, reassure him; just talk through a few issues what he had…This interaction could go on for a few hours, until they feel settled." (TC02)

"What it tends to be is that [patients] need somebody to natter to. They're are getting anxious; they're getting stressed. They feel isolated and they'll come and ring us up. We can see them; they can see us and it's a natter for 10, 15 minutes. But if that does the trick, that's fine." (TC11)

One of the nuances of teleconsultation in relation to reassurance appeared to be that not only can nurses support patients remotely, but that sometimes, actual interaction was not required. Instead, much of the reassurance required was given simply by the fact that the nurse *could* be accessed by the patient if needed:

"Some people, once they have the kit in place, don't ring or contact us at all because they know it is there. They know that they can call us if they need to…" (TC01)

In these cases, nurses offered reassurance by reinforcing their availability to patients:

"We keep saying 'just ring up anytime. It's not a problem, we're here anyway, just click it, say hello. Then, you know, if you need us…and you don't feel well, you know how to use it. You're not scared of it." (TC11)

More commonly, reassurance was described as being something that nurses sought to offer during a teleconsultation as a supplement to other interventions, rather than being the primary aim of the interaction. Though reassurance of patients during teleconsultation was described in very positive terms, participants demonstrated different thought processes behind the reason why it added particular value to the interaction. In some cases, participants suggested that instilling reassurance was, in itself, beneficial:

"…they're pleased to see you, often quite reassured, they like to hear your voice, see your expressions. It's a comfort as well as a reassurance a lot of the time." (TC07)

In other examples, the benefits of reassuring the patient were viewed through a more clinical lens, with a direct line drawn between psychological well-being and physical health status:

"…we can actually see what is happening and that there is no need to panic and we can reassure the carer or the patient; get them to breathe more steadily." (TC01)

"…with COPD, they get more anxious, they become more breathless; they get more breathless, they become more anxious. And I think knowing that the [teleconsultation] box is there and there's somebody at the other end of it is a big reassurance to them…you can reassure them and they are reassured by you." (TC12)

Where nurses provided therapeutic presence during a teleconsultation, it appeared to stem on occasions from a recognition that their patients found themselves in frightening and challenging clinical circumstances. To address this, nurses took steps to offer focused information (similar to the situational interpretation discussed in the previous chapter) and reassurance – as described by a participant who was proximal to patients during NP-Pr teleconsultations:

"So there's always a lot going on and obviously the patient's usually a bit scared as well. We explain to the patient the consultant is at home and they're reviewing the patient – they're watching what we do." (TC15)

The provision of reassurance as a tool to support patient well-being was therefore considered by participants to either be an end in itself, or as a means to enhance physical and psychological well-being. In addition, reassurance was linked by some participants to the broader development of a strong nurse-patient or nurse-carer relationship. This viewpoint linked reassurance with concepts such as 'trust' and 'rapport' and was discussed by a number of participants in the context of both N-P and NP-Pr teleconsultations:

"...you just find other ways of getting that trust and rapport with them verbally, through reassurance, questioning, spending time with them." (TC02)

"I think that between your medical professional and your patient, you're always trying to establish a rapport and a relationship..." (TC05)

One participant also broadened the discussion of building a trusting relationship by describing the general care of patients with long-term conditions:

"...they're often reassured when they've seen you. That was my first experience of working with chronic diseases as a caseload, in terms of that relationship that I had with them. It became [pauses] *– if I say 'close', I can't think of a better word at the moment. They really did trust you."* (TC08)

This therapeutic relationship appeared to build over time, moving from a tentative, exploratory stage, to one where both nurse and patient felt comfortable in each other's company (or virtual company):

"...you're sort of testing the boundaries. What do they like to be called? What do they want to call you? All sorts of things. Is this a convenient time? Do you want to move somewhere else? Whatever – there are lots and lots of things. But consequent calls, it's just like nattering to one of your patients you've known for a few years…" (TC11)

As this relationship developed, so it increased patients' trust of nurses and enhanced the level of reassurance given:

"It's important that they feel that they can contact you with anything that goes wrong...you want patients to come to you before they reach that stage, but they won't do that if they haven't built that relationship with you." (TC16)

The relationship could also extend further than just the nurse and the patient. During an N-P teleconsultation to support the provision of burns care, one participant expanded their therapeutic presence to encompass both the patient and their family:

"[patients and their family] can see you and I think having a smiley face on the other end of the video line does make them think this is going to be fine. One of the Mums actually said 'you were so nice to us' and I said 'well you are my patient by that point, I knew that I was going to see you and I wanted you to feel comfortable'…so you can start your relationship with them." (TC03)

The same nurse also described the experience of a colleague who had built a relationship with a child during teleconsultation, later yielding benefits during a subsequent face-to-face encounter:

"You have already got that bit of a relationship when the child comes in, and one of the nurses has said to me 'oh, it was lovely, that child we did the other day came in and the child recognised me.' She said 'it was so funny. He said 'you said hello and waved at me'' And I was like 'yes they do that, that's what they do, because you already know them a bit.'" (TC03)

One participant, who described her role in using teleconsultation to remotely support patients in their own homes and in residential settings, also outlined how reassurance was important not just for patients, but for their families:

"But all family members, I must say, seem very, very keen on that family member having it because they feel it's almost like somebody else there to look after them." (TC11)

As an extension of this, the same participant outlined how carers who were proximal to the patient (whether informal carers, unregistered or registered practitioners) could also benefit from the therapeutic presence of the nurse:

"They seem very, very…what's the word…reassured – whether it be a registered nurse or whether it be a healthcare support worker. – that there's somebody else there helping them make those decisions. So they're not on their own. Everyone seems really, really reassured." (TC11)

The feedback from participants suggested that effective communication was the bedrock upon which strong therapeutic relationships were built. One of the words used commonly during interviews to describe nursing interactions was 'chat'. Though the more social elements of this are described in the following chapter, 'having a chat' was also a powerful tool in the delivery of therapeutic presence;

"…with a video link you say 'right, let's have a chat about what has been happening today.'" (TC02)

"…we can kind of have a chat afterwards just about how they feel, how [the clinic] went and just kind of any issues that way." (TC09)

Some of the insights into the scope and delivery of therapeutic presence came from participants providing examples of *not* being able to provide it. These insights were generally related to the perceived weaknesses of teleconsultation as a modality of care and are discussed in much greater detail within chapter 11. However, some exemplars are worthy of mention here, as they reinforce the importance of reassurance and comfort as part of the nursing role;

"I think that if someone had got upset at clinic, that's not really the best because – you know what I mean – you couldn't comfort them." (TC06)

"…it's kind of different if you're trying to maybe reassure someone who's upset or worried…you can kind of, you can get closer to them and I suppose you can change

your tone…I suppose that, yeah, you probably do lose that [during teleconsultation] …if somebody was to get upset for example at the other end, I would find that quite difficult to provide the reassurance that I could provide face-to-face.' (TC16)

Provision of reassurance was considered so important, that when it could not be provided directly because of physical remoteness, third party practitioners could be used to *"…kind of reassure the patients."* (TC16). This use of the third party to provide vicarious presence is an important compensatory mechanism adopted by nurses, and is explored in depth within chapter 12.

Therapeutic presence in context

The concept of therapeutic presence that emerged from the data rested primarily on the nurse developing a rapport and relationship with their patients, regardless of whether they were remote from or proximal to them. This relationship then allows for the offering of reassurance and support to patients in addition to performing purely organisational or clinical activities (i.e. in addition to offering operational and clinical presence). In some N-P teleconsultations, reassurance and support can also be offered to carers or other practitioners who are proximal to the patient.

Whereas the sub-categories of nursing presence described in the previous two chapters (operational and clinical) have titles that are not commonly found in the literature, this is not the case for therapeutic presence. Chapter 5 highlighted that nursing presence is a well-documented and widely discussed concept within nursing literature. Some authors have suggested that nursing presence has a number of different subcategories or types, including, in some cases, therapeutic presence. As elements of therapeutic presence emerged from participants in this study, it was therefore possible to explore

previously published perspectives on this concept as part of the process of constant comparative analysis. Where this study adds to the existing evidence base is by offering new insights into the scope of therapeutic presence generally in nursing, and providing an understanding of how these elements of holistic care can still be offered through technology-mediated interaction.

Boeck (2014) described therapeutic nursing presence as a source of trust and rapport, built upon nursing characteristics such as empathy and caring. The term therapeutic presence, encompassing compassion, support and empathy, has also been used to describe part of the nursing role in contexts such as care of people with eating disorders (Snell et al., 2010), critical care (Hewitt, 2002) and community nursing (Anderson, 2007). One of the most detailed explorations of therapeutic presence can be found in the model of nursing presence proposed by Easter (2000). As one of four modes of presence, therapeutic presence is described as a modality of care used to offer "…support, hope, comfort, relaxation, and an increased ability to cope." (Easter, 2000:366).

Many of the elements of therapeutic presence identified in previous literature link with the findings of this study. However, other conceptualisations of categories of nursing presence encompass issues such as the provision of support, reassurance, comfort and security to patients – albeit using different terminology from therapeutic presence. In some cases, the elements of therapeutic presence identified in this study link to other authors' visions of nursing presence in its entirety. For example, Doona et al. (1999:59) offered a version of nursing presence that stripped out clinical tasks entirely: "With nursing presence, nurses are less focused on tasks." The model proposed by Doona et al. (1999) included six elements of presence: uniqueness, connecting with the patient's experience, sensing, going beyond the scientific data, knowing what will

work and when to act, and being with the patient. This version of nursing presence is therefore not compatible with subcategories of operational and clinical presence explored in earlier chapters, but does have parallels with the elements, mechanisms and outcomes of therapeutic presence.

Godkin (2001) incorporated similar characteristics of nursing care into her three-stage model where bedside presence and clinical presence are built upon by the expert nurse to deliver *healing presence* – a concept that has some parallels with therapeutic presence in the grounded theory of teleconsultation.

Aside from discussions of nursing/therapeutic presence, there is some previous literature related to some of the specific elements of care explored earlier in the chapter. In particular, much has been written about the importance of developing a trusting nurse-patient relationship and offering reassurance and support. McQueen (2000) argued that though some of the work of developing and maintaining such a relationship may be hidden, the existence of rapport and trust is fundamental to the provision of effective patient care. The relationship is founded on mutual feelings of trust, and builds over time as the nurse gets to know the patient (Mok & Chiu, 2004) – a viewpoint supported by this study. In a literature review of trust in nurse-patient relationships, Dinç and Gastmans (2013) identified that not only was trust the foundation of a caring relationship, but that its development was a dynamic, temporal process - linking with the 'building of trust' described by participants in relation to teleconsultation. The outcomes of trust identified by Dinç and Gastmans (2013) included feelings of reassurance and security for patients, also reflecting the findings of this current study. Rask and Brunt (2007) built on findings from empirical studies to develop a model of nurse-patient relationships in forensic psychiatry. Included in this model were examples that mirrored some of those elements that emerged as

therapeutic presence within this study, such as building relationships and supporting interaction.

A seminal work by Morse (1991), using a grounded theory approach, described the different levels at which the nurse-patient relationship exists. Though this study is almost a quarter of a century old, the findings resonate with some of the categories that emerged in relation to teleconsultation. Morse (1991) described how the relationship may move from being purely clinically based (with little personal or emotional involvement), through to the more commonly observed *therapeutic relationship* in which the nurse sees those that they care for as patients first and people second. Morse then suggested that in the right context and over time, the relationship can evolve further to a connected state where the nurses see a person first and a patient second. A similar process can be seen in the categories that emerged in this study. Whilst some short, 'one-off' teleconsultations may only have required perfunctory clinical tasks to be performed (i.e. for clinical presence to be achieved), many showed evidence of a therapeutic or connected relationship developing. This was particularly the case in those N-P teleconsultations where the nurse and patient had contact on a regular basis, allowing for trust to develop.

The provision of reassurance and support to patients was an element of therapeutic presence that emerged strongly during the study. Whilst some of this may have been a by-product of the trust that developed as part of the nurse-patient relationship, some data also suggested that specific steps were taken by nurses to offer reassurance. Again, there is some previous discussion of these types of interventions within the literature, albeit outside of the context of teleconsultation. In a qualitative study of people admitted to hospital with depressive illness, Moyle (2003) found that one of the most valued elements of the nursing role was the provision of reassurance, support,

security and comfort offered as part of a therapeutic relationship. The study also found that clients described dissatisfaction with the fact that their nurses often focused too much on clinical or illness-focused activities and not enough on providing reassurance and comfort. Looked at through the terminological lens of this current study, Moyle (2003) could be seen to be describing perceptions of nurses delivering clinical presence but not sufficient therapeutic presence.

Pfeil et al. (2012) identified that the provision of reassurance was an important element of the role of urology nurses in the care of children with hypospadias. Much of the reassurance depended on the use of communication skills and, in some cases, was provided remotely via the telephone. Fareed (1996) explored patients' perspectives on reassurance within the hospital setting using a phenomenological approach. In addition to identifying the therapeutic effects that patients felt when provided with reassurance, the findings also reinforced the importance of a trusting relationship and of the provision of explanation and clarity by nurses. The work of Fareed (1996) gathered data from hospital in-patients with whom nurses had time to build a trusting and reassuring relationship. However, even in a short stay, high throughput area such as day surgery, the giving of reassurance and comfort was highly valued by patients (Mottram, 2009).

Conclusion

The conceptualisation of therapeutic presence identified from the data in this study appears therefore to build on previous authors' descriptions of similar phenomena. However, in addition to offering a new perspective on its place and scope in nursing, this study also identifies that therapeutic presence can be delivered during technology-mediated interactions. Like previous conceptualisations, therapeutic presence during

teleconsultation depends on the development of a rapport and relationship between nurse and patient. Through the development of a strong, trusting relationship, nurses are able to offer patients reassurance, comfort and support – all well documented elements of the nursing role more broadly. The defining characteristic of therapeutic presence in teleconsultation is that this relationship requires developing in an untraditional environment and, in some cases, where the nurse and patient are remote from one another.

The components and mechanisms that emerged as part of therapeutic presence once again demonstrated that the nurse's role during teleconsultation mirrors their activities during traditional interactions. As in face-to-face encounters, nurses seek to build relationships, instil trust and provide reassurance during teleconsultations. They do the same things, just in a different way.

Though therapeutic presence could be considered to reflect the 'softer' elements of nursing practice, the techniques used to enhance it are complex and skilled. The findings from the study and from previous literature suggest that building a relationship and instilling trust requires clinical competence and effective communication skills. However, the findings from the study also suggest that in addition to this, there was value in non-clinical, informal conversations – 'chatting' – as part of the process of relationship-building. Though this value may be linked to therapeutic presence, the study also suggested that nurses' roles in teleconsultation can sometimes be primarily to offer input to the interaction that is social in nature. These elements of the teleconsultation had little link to the nurse/patient roles within the dyad and were instead just interactions between two or more people. As such, they offered an area of overlap between therapeutic presence and the final subcategory: social presence.

CHAPTER 9: SOCIAL PRESENCE – *"LIKE BEING IN THE ROOM WITH SOMEBODY"*

The three subcategories of nursing presence described in previous chapters move from the delivery of 'hard' outcomes, through to 'softer' elements of nursing practice. Operational presence involves nurses organising and facilitating services, clinical presence encompasses the completion of specific functional tasks and therapeutic presence describes the provision of reassurance and support within a trusting relationship. Though these subcategories of nursing presence within teleconsultation have very different foci and characteristics, they all rely heavily on the conceptualisation of the nurse as a facilitator or provider of care. By contrast, the final subcategory of nursing presence, social presence, is less focused on the nurse as care-giver and more on the nurse as a person. However, as this chapter will demonstrate, it appears to have a positive outcome on the experience of nurses, patients and other agents during teleconsultation.
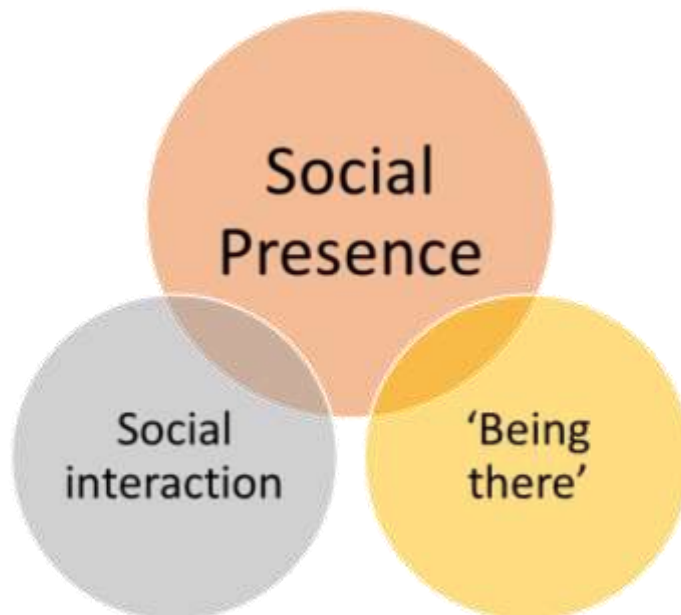

Figure 9.1: Elements of social presence

Elements of social presence

The subcategory of social presence emerged as a result of data from participants that described interactions with patients and carers that were not linked specifically to any operational, clinical or explicitly therapeutic objective. Two types of social presence were identified: the first is linked specifically to social interaction, the second related to a feeling of 'being with' the other agent(s) during a teleconsultation.

Social interactions during teleconsultation could be seen simply as 'chatting' – engaging in objectless, informal conversation. In many cases these interactions were tangential to the main purpose of the interaction and simply prompted by events or environmental cues noticed by one or more parties. In addition, the types of interactions described by participants appeared more associated with the conversation of acquaintances than that of a nurse-patient dyad:

"...you natter and witter about all sorts down the camera. I mean, you'd be amazed at the stuff we natter about. With the ones where you're in somebody's home, you know, the dog's crawling on the back of the settee. It's somebody's birthday and all the flowers are there so you have a natter about the birthday." (TC11)

In addition to having no direct link to the purpose of the teleconsultation, these interactions appeared to be extremely informal and light-hearted. Elements of humour within teleconsultations were outlined by some participants in this study, including this example of patients leading the social interaction:

"We'll have quite a lot of them all saying 'I can't see what you're wearing today – first of all, stand up and give us a twirl!'...a wee bit of humour never goes amiss and awry...And then they're always waving 'bye' for about five minutes at the end." (TC06)

Participants often spoke of conversations taking place with patients and carers that were catalysed by the simple fact that video was being used as the medium. The 'novelty value' of the interaction was an obvious focus of discussion, in the same way as extreme weather conditions or traffic problems might be in a face-to-face conversation. The phenomenon of talking about the teleconsultation, during the teleconsultation, was apparent in both NP-Pr…

"...the consultant will introduce himself and he'll say 'I'm consultant on call; I'm Dr Whoever' and [the patient] will sort of go 'ooh'! You can see some of them sort of look. Some of the older generation sort of look a bit 'ooh my Lord – there's a man on the telly talking to me!'" (TC10)

…and N-P interactions:

"Grandkids – they love it! Absolutely love it and they're waving away in the background, showing me things, so it becomes a bit of an entertainment thing for them." (TC11)

The examples above described conversations that appeared to take place despite having nothing to do with the specific object of teleconsultations. However, there were also examples where one of the primary outcomes of a teleconsultation (at least from a patient perspective) was to engage in some level of social interaction:

"...often [patients] will ring up and say 'just wanted to say hello because I'm off out for my tea tonight and I won't be in.' So it is like their personal service – personal nursing service – and we are here 24 hours a day anyway, so if they want to ring through and have a chat with us, that's absolutely fine...it is very much a social interaction as well as a nursing assessment." (TC01)

In examples such as this, interacting socially with the nurse via teleconsultation appeared to have a direct benefit for patients, thereby demonstrating the overlap between social and therapeutic presence described in Chapter 5. The therapeutic benefit seemed to result from the patient having somebody to talk to – in essence, social interaction between the nurse and the patient via teleconsultation was an end in itself.

In other examples from the data, social interaction was a tool which the nurse used as a means to an end. In particular, social interaction seemed to be a useful starting point in the development of the nurse-patient relationship:

"I think it is the fact that when they have seen you on the video screen – and because we are children's nurses, the first thing we do is go 'helloooo!' and you wave and smile at the child, so the child if they are old enough they've got some sort of feeling that the person on the telly is talking to them." (TC03)

"...I just do my best to, you know, chat and I'll say 'oh, I like your curtains' or, you know, the usual stuff you do as a nurse. Icebreaking to make sure that, you know, they're comfortable and they can speak to you..." (TC13)

Social interaction therefore served as a precursor to the more focused and expert use of communication skills as a means of cementing the relationship - actions described as part of therapeutic presence within the previous chapter.

As with therapeutic presence, some insights into the importance of social interaction could also be gleaned from examples where participants were concerned by its absence. The reasons why it might be difficult to offer social presence during teleconsultation are explored in chapter 11, but the impact was demonstrated by a

quote from a nurse who was describing elements of care that she was not able to provide when interacting with patients via video:

"Talking to them in a more natural way. That bond you get with your patient. I think I miss the fun you can have with them as well." (TC13)

Much of the discussion thus far has focused on social interaction between the remote nurse and his or her patient (i.e. during an N-P interaction). There was little discussion about social interaction from those nurses who participated in teleconsultation when proximal to patients during NP-Pr interactions. The reasons for this were not clear. One possibility is that the clinical context of many of the NP-Pr consultations discussed, such as acute stroke management or burns care, would make social interaction less feasible and/or appropriate. It is also possible, though this would need exploration in future work, that because (as discussed in previous chapters) the proximal nurse was there to offer clinical support within the teleconsultation, their behaviour became more formal and task-orientated.

The use of social interaction to provide a direct benefit to patients or to act as a foundation for building a therapeutic relationship was the first element of social presence to emerge from the data. More nebulous, but potentially just as important, was the second component of social presence: the feeling that the remote clinician was 'in the room' with the patient. This was a phenomenon that was described by a participants from a number of clinical contexts during N-P teleconsultations.

In some cases, the perception of the nurse was that the patient felt as if they were with them in the clinical environment…

"...they speak to us as if they are in the hospital almost and you are doing an outpatient clinic with them – 'oh, can I just ask you about the lump on my arm as well?'" (TC02)

…whilst in other examples, the nurse perceived teleconsultation as feeling as if they were with the patient in their place of residence:

"...even when you're in one of the residential and care homes, you're generally in their room – there are things you can see, so you've still got that natter-factor of actually talking to your patient like you would if you were in the room anyway." (TC11)

As an extension of this, one nurse described how teleconsultation allowed this feeling of presence to extend to all agents within the interaction:

"When you do a teleconference it is like being in the room with somebody and whoever is in that room is involved…" (TC04)

These examples suggested that the technology used to mediate teleconsultation was becoming less visible, allowing for the sense of 'being there' to prevail. As a counterpoint to this, some participants provided data suggesting that as the visibility of the technology increased, feelings of remoteness seemed to be stronger:

"...it's literally you're on their TV screen and you're looking at them from the TV screen… I can't ever see that the only thing that looks after you in the community is a television screen." (TC12)

"So it's a bit weird, so you're talking to a sort of machine with just a fixed image…" (TC15)

"I would much prefer to have the person there than do it on a video link…" (TC09)

Social presence in context

The first element of social presence identified was the use of social interaction between agents in the teleconsultation. In some cases, the social interaction discussed was seen as a primary function of teleconsultation, ahead of any clinical or therapeutic requirements. The participants who described this particular benefit worked in settings where patients are able to 'dial-in' from their own homes – the clinical context where social interaction would seem most likely to have a positive impact. It is well-documented that lack of engagement with others can result in social isolation which, in turn, is linked with poorer mental and physical well-being (Dury, 2014). It is therefore important that nurses recognise how social interaction can act as a tool for mitigating isolation. The participant who described the use of teleconsultation as a vehicle for chatting as "absolutely fine" (TC01) appeared to recognise the importance of this informal engagement as part of their role.

There is little previous work that explores the social interaction element of the nursing role in teleconsultation. However, the role of video-mediated communication in promoting social interaction in the general population has grown exponentially in the past decade. The development of free-to-use applications such as Skype and FaceTime have led to social interaction via video ('video-chat') becoming commonplace (Williams et al., 2011). Though popular in many settings, video-mediated communication is particularly useful at facilitating social interaction and

connectedness between family members or friends separated by large distances or geographical barriers (Furukawa & Driessnack, 2013).

There is evidence to suggest that the use of social interaction by nurses in a broader context can yield some of the same benefits as those described by participants in this study. Though social interaction, or a simple chat, may seem to be a pleasantry rather than a necessity, there is evidence within the nursing literature that simple, mundane conversations can be a powerful tool in the development of the nurse-patient relationship. Öhman & Söderberg (2004) identified how 'small talk' helped developed a feeling of intimacy between District Nurses and people with dementia. This conversational approach was coupled with the use of humour, even in difficult situations, to build a therapeutic relationship between nurse, patient and, where appropriate, family members.

The use of humour, discussed briefly by Öhman and Söderberg (2004) and highlighted as important by participants in this study, has been recognised elsewhere as being a useful element of a nurse's communication skills. Even in challenging settings, where patients are seriously ill, living with long term conditions or requiring palliative care, there is evidence that humour can, when used appropriately, strengthen the nurse-patient relationship (Åstedt-Kurki et al., 2001). McCabe (2004:47) suggested that this may be because the use of humour and informality relaxes patients and that social interactions "…give patients the opportunity to step out of their sick role…"

Much of the work on the importance of social interaction in nurse-patient relationships has taken place in long-term settings where there is time to nurture and build a bond. However, even in shorter-stay areas such as day surgery, social interaction also appears to play an important role. As part of a grounded theory study, Mottram (2009)

carried out semi-structured interviews with 145 patients who had undergone day surgery. There was repeated reference to the role that social conversation or 'chit-chat' played in developing and strengthening the nurse-patient relationship in this short-stay context.

There are two particular elements of Mottram's findings that support and clarify some of the grounded theory related to teleconsultation. Firstly, a clear link was made between social interaction and therapeutic benefit, with patients describing how they appreciated and valued 'non-clinical' conversation with their nurses. Secondly, the work completed by Mottram (2009) was based in day surgery units where nurses and patients would only know each other fleetingly. However, in that time, partly through the use of general conversation, nurses could build up strong therapeutic relationships with patients. Though the day surgery environment is one of proximity between members of the nurse-patient dyad, the study findings suggest that the limited time and lack of previous relationship between agents in teleconsultation does not preclude the building of a rapport based partly on social interaction.

In some of the examples provided by participants, social interaction appeared to be *about* teleconsultation to some extent, rather than just *via* teleconsultation. Though there is more exploration of the enabling characteristics of teleconsultation in the next chapter, it is worth outlining at this stage how its role as a catalyst for conversation might be beneficial in promoting social presence.

In the broader nursing context, previous literature suggests that the less clinical and directly therapeutic elements of nurse-patient interaction tend to be neglected when there is pressure to complete tasks. For example, Wadensten (2005) found that nursing conversations with residents in a care home were overwhelmingly biased in favour of

questions related to health status, rather than including therapeutic or social characteristics. Looking at these findings through the lens of the grounded theory of teleconsultation, the nurses studied by Wadensten could be viewed as focusing on providing operational and clinical presence, rather than therapeutic or social. Where teleconsultation appeared be beneficial in this area is by offering 'novelty value' – it drives nurses, patients and other agents within the interaction to comment on and talk about it. By doing so, it may help to move some of the focus from completion of clinical tasks and enhance the social presence of the nurse or other remote clinicians.

Though there is little previous work on the role played by teleconsultation as a catalyst for social interaction in nurse-patient communication, there is some supporting evidence in associated areas. In a study of social workers supporting people with COPD via webcams, Pols (2011) described how the interaction was perceived as being less formal and serious than face-to-face consultation. This informality, coupled with the use of humour, appeared to a product of the medium used and was viewed as being a positive characteristic by both patients and practitioners.

Pappas and Seale (2009) explored the opening phases of video-mediated consultations between physicians and patients. Amongst their findings was that the novelty of using video as the mediator provided a topic of conversation between physician and patient that could 'break the ice' and pave the way for the more functional, healthcare-focused portion of the consultation. The work by Pappas and Seale (2009) also suggested that there are more subtle processes at play than there simply being something 'interesting' to talk about. Instead, the move from a traditional face-to-face environment where the patient can be seen as a guest and the physician as the host, to a video-mediated 'neutral' environment, flattened the power differential to some extent and supported a more social form of communication.

The instances of social interaction described by nurses in this study suggest that a similar process may have been apparent. For example, the references to nurses being asked to 'give a twirl' or the involvement of grandchildren in the consultation all allude to an informality that may have been missing from a face-to-face consultation based in a clinical environment. Teleconsultation may therefore encourage the use of social interaction both as an end in itself and as a foundation for further, more therapeutic and clinical communication.

The second element of social presence identified from the data was in relation to a feeling, on the part of one or more agents, of 'being there' with other people. This phenomenon has been explored previously within studies of communication generally, but technology-mediated communication more specifically, and labelled with the title 'social presence'. Proposed first as part of a work on the social psychology of telecommunications, Short, et al. (1976) conceptualised social presence as the degree of salience within a mediated interaction. The description of social presence put forward by Short and colleagues encompasses some of the feedback from participants in this study. For example, high levels of social presence are associated with characteristics such as warmth and sensitivity, whilst low levels are linked with coldness and insensitivity (Short et al., 1976). This mirrored the spectrum of participant's descriptions related to the extent to which they felt as if they were 'there' with the patients – from the *"natter-factor"* (TC11) down to *"you're talking to a sort of machine"* (TC15).

Since the original work of Short et al. (1976), many definitions of social presence have been proposed. One of the most succinct descriptions was that it represents 'the sense of being with another' (Biocca et al., 2003). This conceptualisation also extended the phenomenon of social presence beyond communication mediated through technology.

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This is an important extension of the idea because, where social presence is not mediated at all, it can be viewed as a simple, binary state: you are either with someone or you are not (Biocca et al., 2003).

Identifying the level of social presence is more complex when interactions take place via technology. Though there is no physical proximity, technology allows people to feel connected to varying degrees (Biocca et al., 2003). This has parallels with the 'degrees of presence' postulated within the grounded theory of teleconsultation and described in chapter 5, in which characteristics of the clinical context or type of interaction influence the degree to which presence can be achieved.

Whilst the original work of Short et al. (1976) used the term social presence to describe the feeling of 'being there', Biocca et al. (2003) referred to 'mediated social presence' to acknowledge the involvement of a technological medium. As a further extension of the terminology, Knudsen (2002:2) proposed the term 'telepresence' to describe "the subjective experience of being together in one place when one is geographically situated in another" in the context of video-mediated communication. In the parlance of one of the nurses in this study *"...it is like being in the room with somebody."* (TC04)

The data from this study suggested that as the sense of 'being there' increased, so the visibility of the actual teleconsultation technology seemed to decrease. One participant, when describing how the experience of using teleconsultation changed over time, suggested that *"...you probably notice the machine less now."* (TC07). From a phenomenological perspective, the ultimate aim within teleconsultation might therefore be to reach a point where the technology becomes what Ihde (1990) called 'embodied'. In this state, the technology allows the perception of things (e.g. a patient;

a doctor) but is not itself perceived. Ihde (1990) uses glasses as an example of embodiment; allowing us to perceive objects (indeed, enhancing our perception of objects), without themselves being perceived. In this instance, the glasses can be considered both literally and philosophically transparent.

A personal example illustrates the application of Ihde's theory to video-mediated communication: a cousin, living away from her parents, was feeling rather isolated, so decided to use Skype to contact home. Once the initial conversation had finished, the connection was left open and the daughter spent two hours watching her parents go about their daily business, occasionally stopping for a chat. From the parents' perspective, it was like having their daughter at home; from the daughter's perspective, she felt as if she were sat on her parent's sofa, watching the world go by. In that context, for that family, on that occasion, Skype and the laptop it ran on became embodied – they perceived each other through the technology rather than perceiving the technology. This move from short, focused conversations towards 'always-on' sharing of domestic life is becoming more commonplace (Neustaedter et al., 2015) and hints towards the increasing embodiment of the mediating technology.

None of the participants in this study gave an example where it could be considered that the technology had become entirely embodied. However, what was apparent was how teleconsultation technology achieved different levels of embodiment, with different nurses, in different contexts. As the level of embodiment increased, so did the transparency and invisibility of the technology and so, as a result, did the degree of social presence. On other occasions, where participants highlighted the use of technology as a mediator ("*…it's literally you're on their TV screen and you're looking at them from the TV screen…*" (TC12)), there was no suggestion of embodiment, and social presence was limited.

Some previous studies have focused on the ability of nurses and patients to feel that they are in the same room, despite geographical remoteness and the use of a technological mediator. Demonstrating some parallels with this current study, Sävenstedt et al. (2004) explored the links between conventional understanding of nursing presence and the concept of telepresence. Their study of teleconsultations between nurses and residents in a nursing home in Sweden supported some of the elements of this grounded theory, specifically related to the degree of presence being associated with the reduced visibility (or increased transparency) of the technology. When teleconsultation worked well, nurses described 'entering the room' of the resident, whereas when there were technical problems, the technology became more obvious and presence was compromised (Sävenstedt et al., 2004).

Conclusion

This chapter has demonstrated how the fourth of the subcategories of nursing presence – social presence – comprises two connected but distinct elements. At one level, the social presence of nurses during teleconsultation can be viewed almost as interaction without any distinct function. It is conversing, chatting, joking with and listening to patients at a social level. This social interaction is not between a nurse and a patient, but between two people. Though seemingly straightforward, this element of interaction can be valued by patients, and provide the foundation for the development of the nurse-patient relationship (therefore demonstrating some synergy with therapeutic presence). The social interaction identified may also be a sign that a nurse-patient relationship has evolved to the connected state described by Morse (1991), where the nurse is perceiving a person first, rather than a patient.

The second element of social presence is the application of existing concepts in which participants within an interaction feel that they are in the same place as each other, even when they are separated by distance and their communication is mediated by technology. Not only do the data from participants demonstrate how the level of social presence can vary between interactions, but they offer some insight into how the level of 'togetherness' could be gauged. As the technology becomes less apparent and more transparent, so the level of social presence increases. If a state of embodiment is reached, agents in the interaction no longer perceive the technology; they perceive each other through the technology.

This study builds upon existing evidence and ideas by identifying these elements of social presence in teleconsultation, across a wide range of clinical contexts. The grounded theory is also unique in that it brings together two aspects of video-mediated communication (social interaction and 'being there') under the umbrella of social presence, within a broader framework of nursing care.

The ability of the nurse and patient to interact socially, move along the spectrum of transparency and feel as if one is 'there' with a remote agent in a teleconsultation will depend on a number of factors. These will include the clinical context, the effectiveness of the medium and the willingness of the agents to engage with technology. These influencing factors, and their impact on all elements of presence, are discussed within the next three chapters.

CHAPTER 10: ENABLERS – *"IT'S JUST BETTER WHEN YOU CAN SEE THE WHITES OF SOMEBODY'S EYES"*

The previous four chapters explored the subcategories of nursing presence, outlined the different elements of each and contextualised them within the existing evidence base. Data from participants suggested that the degree to which nurses could offer each of these subcategories of presence depended on a range of influencing factors, including the clinical setting and acuity of care provided. However, it was those influencing factors linked specifically to the modality of care (i.e. teleconsultation) that emerged most strongly as part of the grounded theory. As analysis continued, three categories of influencing factors were identified: enablers, constraints and compensation.

The enablers that emerged from the data encompassed those characteristics of teleconsultation that facilitate the delivery of presence. Analysis of the data from interviews identified five specific enablers of nursing presence associated with teleconsultation: the ability to offer care regardless of distance, the value of sight, enhanced focus, the involvement of others and the opportunity to develop specialist nursing roles. Though specific elements of these factors appear within some previous literature, the grounded theory of teleconsultation builds upon existing knowledge and embeds them within the broader conceptualisation of nursing practice.

Offering care regardless of distance

The ability to provide care across geographical distance was one of the defining characteristics and core benefits of teleconsultation. It is widely recognised that when used appropriately, technology such as teleconsultation can provide a cost-effectiveness mechanism for expanding the scope and scale of clinical services (Korhonen et al., 2014). Many of these organisational benefits have been explored in

chapter 6 in relation to operational presence. However, this characteristic of teleconsultation also emerged as an enabler of all subcategories of nursing presence.

In relation to operational presence, a mutually beneficial relationship was identified. Chapter 6 outlined how the operational presence of nurses could serve to facilitate teleconsultation. Conversely, there were also data to suggest that teleconsultation could enhance the operational presence of some nurses by enabling them to meet a number of organisational goals, to smooth referral processes and to facilitate multidisciplinary communication. For those nurses operating in a more managerial role, their operational presence was enhanced by teleconsultation providing them with a tool that allowed them to meet their organisational goals more effectively. For example, where a nurse's operational presence was linked to the organisation of outpatient clinics, teleconsultation improved their ability to deliver the necessary capacity:

"...one of the challenges we were facing at the time we set this project up was the renal clinic was becoming very, very busy and the consultants were struggling to actually get through the sheer numbers in the time they had. [With teleconsultation] they had a lot more clinic time and therefore could get through the clinic patients..." (TC05)

"[Teleconsultation] meant we were able to offer a lot more clinic appointments." (TC06)

Where operational presence was associated more closely with delivering clinical services that met best practice guidelines or supported community-based care, teleconsultation was also viewed as an enabler:

"We offer a 24/7 thrombolysis service, which again, we've been doing for four or five years now and the telemedicine is used to facilitate that." (TC15)

"We have...kept people at home or in the nursing/residential home with the carers there or on their own if they are happy to stay on their own, but with us every few hours just having that contact with them to make sure that things aren't getting worse. As soon as things start to get worse, we get the ambulance to bring them in or we get the community team out." (TC01)

Clinical presence was also enabled by the ability of teleconsultation to facilitate the care of patients at a distance. In particular, the ability to assess, diagnose and plan care remotely offered nurses the opportunity to extend the reach of their clinical presence beyond normal boundaries:

"I can keep going back and looking at a patient every half hour, which out in the community, there'd be no chance I could do that at all...I can use my clinical assessment skills to far more people in a shorter space of time." (TC11)

The emergence of findings that demonstrated the benefits of being able to support care remotely mirrored some previous work in this area. Gagnon et al. (2014) described how teleconsultation enhanced access to healthcare services geographically (by reducing the impact of distance) and temporally (by shortening waits for treatment). The ability of remote care services to increase capacity in outpatient settings and reduce waiting times has been reported in a number of other clinical contexts, including mental health services (Simpson et al., 2001), dermatology (Al Quran et al., 2015), neurology and gastroenterology (Oliveira et al., 2011). Development of round-the-clock thrombolysis services for stroke patients, such as those described by

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participant TC15 (p178) has also been enabled by teleconsultation elsewhere (Schwamm et al., 2009).

The examples of teleconsultation as an enabler of presence outlined above all related to the broad ability of the medium to allow for care to be delivered at a distance. However, other media, such as the telephone, offer the same ability. For example, the NHS 111 service enables the assessment, triage and provision of healthcare advice to over 1 million callers per month across England (NHS England, 2015). Other enablers of teleconsultation that emerged from the data related to characteristics specific to the medium, which added value above and beyond other methods of supporting care remotely.

The value of sight

Participants described how the ability to see other agents within a teleconsultation offered a range of benefits. In most cases, the comparator medium was the telephone. By providing visual cues to patients, nurses, family and other participants in the interactions, teleconsultation was discussed as being 'better' than voice alone, either from the nurse's perspective…

"...we are using that video link as an eye through to, rather than it just be a telephone call, to provide the service, it could quite easily be just a telephone conversation, but that video link provides you with a pair of eyes to look on the other side of that telephone." (TC02)

",,,when you see a face and you remember the patient, you're more inclined to, I think probably to ask the right questions and it is more personal than the phone because it adds in being able to see them." (TC16)

…or from the patient's:

"And also, I think it makes people feel they've been reviewed after they've seen your face, but not necessarily after a phone call. So they accept that this is a proper appointment, but they might not think that a phone call necessarily is." (TC16)

Though lacking in detail, the examples above paint a clear picture of nurses considering video-mediated interaction to be more effective than the telephone. As a counterpoint to this, the next chapter includes a number of examples of nurses suggesting that video-mediated interaction is less effective than physical, face-to-face contact with patients. The framework that developed from this feedback was therefore one of different media for patient contact being ranked according to effectiveness and appropriateness. Face-to-face was considered the 'gold standard' by some participants; video was often preferred to the telephone where both options were available.

This informal ranking of different modalities of care fits with long-standing theories of technology usage. Korzenny (1978) proposed a 'theory of electronic propinquity' that predicted users of technology will, given the choice, choose to use the communication medium that offers the most sensory cues. If that optimal medium is no longer available, users will perceive the next 'richest' channel of communication as offering a high level of proximity (or in the terminology of this grounded theory, the highest degree of nursing presence). With more explicit reference to presence, Short et al. (1976) recognised how the visual quality of early video-mediated communications supported the delivery of a higher level of social presence than the telephone (though less so than physically proximal, face-to-face interaction).

More recently, Bohannon et al. (2013) suggested that where face-to-face interactions are available, they will be viewed as the approach with the greatest level of information richness, because they offer the most sensory cues (sound, smell, sight, touch). Where face-to-face consultation is not available due to geographical or logistical reasons, then agents are likely to view video-mediated consultation (with sound and sight) as having greater information richness than the audio-only telephone (Bohannon et al., 2013)

The fact that participants in this study described the added value of sight as an important advantage of teleconsultation over phone-related interventions is of no great surprise. In addition to the long-established hierarchy of information richness described above, there is recognition that sight is the most objective and least ambiguous of the senses (Sinha, 2000). As a result, it is a logical presumption that it will be the sense that can facilitate a range of nursing roles and functions. What this grounded theory adds to previous evidence is greater insight into why nurses value sight so much, how it enhances their interaction with patients and how it facilitate the provision of nursing presence.

In relation to clinical presence, there was recognition that in the case of patient assessment, the ability to see all or part of the patient was hugely valuable. In some cases, this was simply because it allowed for a focused assessment of a specific issue (such as a burn or wound), whilst other respondents described the enabling of clinical presence through a much broader patient assessment:

"You need to be able to see the patient. And I think we can tell a lot from sight. You can tell if somebody's breathless; you can tell if they're distressed…you can see if someone's cyanosed, what kind of pallor they've got. You know, if they look very thin;

if they look gaunt. I mean, I was able to see from somebody that she was dehydrated because her mouth was dry; her tongue was dry." (TC12)

Previous teleconsultation projects involving nurses have highlighted how video, even when of a relatively low fidelity, can provide nurses with important information regarding the clinical status of patients. Jenkins and White (2001) described how nurses could gather assessment data from patients with heart failure via a small (3-inch) video screen. Despite the technological limitations, nurses reported being able to assess a range of clinical features, such as ankle oedema, wounds or abnormalities in gait.

Beyond the specific physical assessment of the patient, other participants also alluded to the visual cues available through teleconsultation providing insight into other elements of patient well-being, such as personal hygiene or maintenance of a safe and secure environment:

"...we can actually see when somebody is really very sick and we need to get something done quickly...we can see whether they are caring for themselves, we can see whether they are caring for their surroundings, we can see if there is something happening and you can't tell that over the telephone." (TC01)

Other than being able to visualise the object of the assessment and the wider environment, the sight provided by teleconsultation appeared to enable a greater degree of therapeutic and social presence through enhanced communication between parties in the interaction. Participants described how the availability of visual cues allowed to them to communicate more effectively through the utilisation of nonverbal signals and body language:

"My own experience is that it definitely helps having the picture as well…we pick up non-verbal cues. So, yeah, it probably helps from that aspect." (TC05)

"People react differently when they are face-to-face then they do when they are on a phone and I suppose that is an issue of communication because there's so many non-verbal components to communicating with another human being, you know, are you smiling? Are your gestures open? Are you making eye contact? Do you care? Are you bothered? You know, they all come across when you are talking to someone face-to-face." (TC04)

The importance of nonverbal communication is well-established in nursing. Cues such as body language, facial expression and posture are thought to influence the capability of nurses to develop therapeutic relationships and optimise the outcomes of nurse-patient interactions. The types of nonverbal communication and their relative importance within interactions will vary depending on the context. However, there are some repetitive themes within the existing evidence base. Caris-Verhallen et al. (1999) explored the nonverbal behaviours present within face-to-face interactions between nurses and older patients. Of the six behaviours observed during the 165 interactions, the most prevalent three were patient directed gaze, affirmative head nodding and smiling – all elements which could be utilised during video-mediated communication (but not via the telephone). It was only the three least commonly utilised nonverbal techniques (forward leaning, affective and instrumental touch) that would be difficult or impossible to practice during teleconsultation. This work supported the findings of previous studies that recognised the importance of patient-directed gaze, head nodding and smile as primary methods of building a rapport with patients using nonverbal behaviours (Caris-Verhallen et al., 1999).

In addition to rapport-building, nonverbal techniques enabled through teleconsultation can also enhance the quality and effectiveness of an interaction. Wright et al. (2001), described a belief amongst nurses that communication with the families of people with dementia could be enhanced by the availability of visual cues offered by video, compared to their experiences of using the telephone. Work on *why* this might be the case suggested that the main drivers of improved communication were eye contact and the ability to see facial expressions.

Eye contact during interactions is an important element of patient centred communication and can enhance the level of trust that a patient has in a healthcare practitioner (Gorawara-Bhat & Cook, 2011; Bohannon et al., 2013). The ability to use visual cues in consultations can also help participants judge understanding of others and reduce the amount of explicit verbal checks (e.g. "Does that make sense") that they need to carry out (O'Malley et al., 1996). The use of video to mediate interactions can also allow for the demonstration of emotion via facial expressions, thereby providing another layer of information to enhance communication (Schmidt et al., 2011).

Sight can also aid in supporting fundamental elements of conversational etiquette. For example, 'turn-taking', the action of one participant speaking after another has finished speaking or performing a task, can enhance the flow of a conversation. Given that turn-taking is enhanced by visual cues such as the movement of participants' mouths (Tachakra & Rajani, 2002), the use of video-mediated communication is likely to enhance this element of interaction above the level available with other media.

This enhanced communication was described as being beneficial to nurses in enabling presence and was also perceived as being valued by patients:

"I feel I might be able to pick up things that I'm not going to pick up over the telephone. From [the patient's] perspective, I wonder if they would feel a bit more comforted actually seeing you." (TC08)

"They like seeing a face. They do like seeing a face…there's definitely a link with what I feel is a difference in the quality of the consultation and that interface with your patient if you can see them. The voice on the phone; it does not work quite as well, I feel…From a human point of view, it's just better when you can see the whites of somebody's eyes." (TC11)

The availability of visual cues also enhanced nurses' ability to offer social presence during interactions. This was the case in relation to both the 'socialising' element and of the conceptualisation of social presence as feeling as if participants are physically proximal:

"[the patients] remember it and they remember the fact that you spoke to them and you explained what you were doing and all that sort of thing and when they come and see us, they go 'ooh, look so-and-so, look little Johnny, this is the lady that was on the telly.'" (TC03)

"They can see that you are acting calm, that you are talking calmly…with a telephone, they may be talking over you, whereas with the video link you can maybe intersect so that they can see your physical presence…they speak to us as if they are here in the hospital almost." (TC02)

The visual cues available through teleconsultation also enabled presence during interactions with agents other than the patient. In some cases, the clinical presence of nurses was enabled by allowing them to visualise the object of an assessment, whilst gathering additional information from a third party who was proximal to the patient. This therefore gave the remote nurse the necessary information, whilst also providing additional support to a proximal, and possibly less skilled, practitioner.

"They [the remote practitioners] can't explain it the way that we need to hear it explained…I don't know what their experience is, so I don't know if they have ever seen a burn or whether they have seen 25…So the telephone doesn't give you enough information – burns is a visual wound: you have to look at it to decide what you are doing with it. It is very hard to describe it unless you are experienced in burn care." (TC03)

In NP-Pr teleconsultations, the fact that they could be seen was exploited by nurses to allow the remote practitioner to build a more comprehensive picture of patient need; something that would be difficult to achieve without the presence of visual cues:

"It doesn't matter how eloquently you describe a wound on the phone, it will never replace seeing it and so it is a fantastic tool in my view." (TC04)

In addition to gathering assessment data and thereby enabling clinical presence, examples were given of sight allowing participants to identify and rectify misconceptions or differing perceptions. In one example, it appeared that the visual cues offered by teleconsultation overcame potentially serious miscommunication between healthcare practitioners:

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"An example that I can provide is a lady in a nursing home staff had called through to say she had become increasingly short of breath and increasingly chesty during the day...I looked at this lady and she was laid flat, pancake flat, in the bed...I did ask if they had sat her up and initially they said yes, but on further questioning, it was just literally to get her out on the commode and back in bed again. Now, if they had told me [on the telephone] that she had been sat out, I might not have thought to question for how long...when I said 'can we sit her up a bit', they said 'right, well we've done that', and she was literally on a pillow. I said 'no, you need to get her properly sat up' and their perception of 'sat up' was putting another pillow behind her where she wasn't any more elevated than she had been previously. If I hadn't seen that, I couldn't have progressed that. If they say 'she is sat up' over a telephone conversation, you would believe that. A verbal perception and a visual perception of something is quite different." (TC02)

Greater focus within the interaction

There was evidence from participants that the use of technology to mediate communication between practitioners and patients not only added an important sensory cue, but changed the general dynamic of the interaction. Some of these changes were perceived as being rather negative, and are therefore discussed within the next chapter (focused on constraints to presence). Those participants who described a changing dynamic in a more positive light suggested that this was often due to a greater level of focus on the patient. One clinic nurse described how, during her face-to-face consultations with patients, it was sometimes difficult to focus in on the key aim or object of the interaction. This seemed to be due in part to a tendency for the conversation to wander – something that teleconsultation addressed to some extent:

"...it's sometimes quite difficult to focus your patients in on something [during a 'traditional' clinic appointment], patients that you do know and they do know you; they will just come and chat. So, this way [teleconsultation], you have them more focused from the start, so there's a positive there as well…you can control the time a bit better I find." (TC16)

The same respondent later provided more information on how the focus was on the clinical objective of a teleconsultation and how this had an impact on the overall time spent interacting with the patient:

"…I find my [teleconsultation] appointments are much shorter, because patients are much more ready to cut to the chase and focus…you're more focused on, probably their blood glucose levels. You're more focused in on that." (TC16)

Though the overall length of the interaction may be shorter, another respondent suggested that teleconsultation enabled that time to be more dedicated to the patient:

"You are with that one particular person for a length of time that you need to be, without any distractions…I feel that gives a good channel as well as to give a thorough assessment and as long as they need…it's a one-to-one; they've got your full attention for however long you need to be with them." (TC02)

A reduction in interruptions, linked to a different approach to interaction when mediated by video, was also described by a participant who facilitated NP-Pr teleconsultations;

"…from the main unit point of view, they get less interruptions. It's a more structured approach." (TC05)

This changing dynamic offers something of a paradox. Though the greater focus and structure described by participants TC16 and TC05 allowed practitioners to manage their time more effectively, there may be a danger of teleconsultations turning into rather perfunctory, 'illness-focused' interactions. Some evidence of this has been seen in telephone-mediated interactions, where consultations are often much shorter than face-to-face interaction, offering less time for rapport building and collection of assessment data (McKinstry et al., 2010).

Oliveira et al. (2011:35) described teleconsultation in their Portuguese service being shorter than face-to-face interaction because "…small talk is reduced to a minimum…" Though this was described by Oliveira and colleagues in a positive tone, there is a danger that minimalizing the amount of small talk might reduce the benefits from elements of social presence (such as relationship-building) described in the previous chapter.

In her qualitative work on remote care, Pols (2010) identified how nursing observations were more focused (or, in her own words, *specialised*) during technology-mediated interactions. Rather than looking at the whole patient, remote nursing could result in only specific information (e.g. vital signs) being collected and acted upon. One participant alluded to this potential for a more reductionist approach to care. The nurse, who took part in NP-Pr teleconsultations as part of outpatient clinics, described carrying out physical examinations on behalf of the remote consultant. Even though she was physically with the patient, she still reported having a slightly different approach during teleconsultation, as compared to more traditional interactions;

"I suppose it's feeding back in a slightly different manner...I suppose following a medical model much more – you're feeding back as you would examine them...it wouldn't be a full examination; it would just be the bit that somebody's worried about." (TC09)

Conversely, the ability to focus attention specifically on one patient, offer them dedicated time and reduce distractions, could enhance the interaction and enable greater nursing presence. As with participants from this study, previous literature offers some evidence of the more focused and dedicated nature of teleconsultation, when compared to face-to-face interaction. Goran (2010) described how nurses overseeing critically ill patients through teleconsultation could enhance the focus on their patient's specific needs "without the various disruptions that can plague bedside care" (Goran, 2010:52). Sävenstedt et al. (2004), exploring the use of teleconsultation in care homes, also found that there tended to be increased attentiveness from patients, thereby supporting a more focused interaction.

Sometimes, the perception of enhanced focus and dedicated time described by participants could be linked to the environmental set-up of the teleconsultation. Some of the participants in this study carried out their teleconsultations in settings where both they and the remote patients were alone in rooms at either end of the video-link. In these cases, the teleconsultation was quarantined from distractions such as other staff or patients. There is also some suggestion from previous literature that the use of video to mediate the interaction may, in itself, enhance the perceived focus of both nurse and patient. Sävenstedt et al. (2005) described how care home residents with dementia, when involved in teleconsultations with nurses, would remain more focused due to an enhanced level of gaze from both parties. It was hypothesised that this might have been in part due to the novelty of having a practitioner/patient on screen, or

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because the slightly offset gaze present in teleconsultation (explored in more detail in the next chapter) made this 'quasi eye contact' easy to maintain (Sävenstedt et al., 2005). Pols (2011) identified similar patterns in her study of teleconsultation, using terms such as 'intensive gazing' or the syntactically challenging 'hyper face-to-face-ness'. Again, the reason underpinning this increased focus was thought to be a product of the use of technology *per se* and the particular framing of individuals' faces.

The involvement of others

One of the other differences highlighted in the dynamic of interactions during teleconsultation was the open nature of communication. Whereas a telephone conversation might be considered a one-to-one, 'closed' conversation, teleconsultation allowed for participation and input from other agents in the interaction. This could be family and friends, informal carers or, in the case of NP-Pr teleconsultations, the RN themselves. One of the benefits of this outlined by participants was that the nurse or other agents in the open interaction had additional opportunities to support patients and their carers:

"...it's not like it's a one-to-one thing. [The patients] have got, you know, a group of people round them that if they don't understand what's said or if they – you know – can't hear the Doctor or something, there's the other people to help with the communication process." (TC14)

As a result, the clinical presence of the nurse as an intermediary, explored in chapter 7, could be enhanced. In some cases, this intermediary role was expanded further, with the open nature of teleconsultation allowing nurses to act as a strong advocate for their patients. This appeared to be due to a different dynamic when communicating with colleagues during teleconsultation. One senior nurse, whose teleconsultation role

included assessment and prescription of care for children with burns, described how the open consultation could be manipulated to ensure that the best care was provided to patients:

"So if I am not confident that the Doctor is actually playing ball as it were, I'll do that. I'll say 'there are a few things that need to be done...I'll speak to the Doctor afterwards and explain about the cannulas, catheter and tubes that we need to sort out before you come to us'...because then if it doesn't get done, I know that the nurse was a witness to it. Without it, if it was just one telephone conversations, he could deny that I have ever said that..." (TC03)

The combination between visual cues and openness also appeared to enhance the level of negotiation between parties within the teleconsultation:

"...there is room for negotiation because you can actually see them. Also, because everyone is there – there might be a doctor and a nurse there so the doctor might say 'yes that sounds a really great plan' but the nurse might say 'but we don't have that lotion or potion or that particular dressing'. So that gets built into the negotiation." (TC04)

Other participants gave similar examples of providing clinical presence through advocacy and shared decision-making during teleconsultation. However, they also alluded to some challenges associated with the openness of the interaction, which are explored in more detail within the next chapter:

"...the patients and quite often the relatives are sat there while it's happening, so you've got to do your etiquette and be polite...If you're not sure of something with a patient...if [the consultant] is stood next to you, you can sort of step back a bit and

sort of – you know what I mean – you can say things a lot more openly can't you? Whereas, if they're there [points at teleconsultation screen] and you've got to speak loud enough for them to hear you, you've also got to remember that you've got your patient and relative sat there." (TC10)

"I think that must be quite difficult for the receiving professional…because they can't take you to one side and say 'I didn't want you to do it that way, I wanted you to do it this way' because the patient is in front of you." (TC04)

The descriptions of the open nature of teleconsultations suggested that the prominence of the role of nurses and other agents changed throughout the interaction. For example, there are points where the nurse took a step back whilst another practitioner talked to the patient during a NP-Pr teleconsultation; at other points, the nurse was directly involved in discussions with the remote practitioner or in assessment of the patient. This demonstrated how teleconsultation enables nurses to vary the level of presence they offer, depending on the stage and context of the interaction.

This shifting of roles has been described previously by Monk and Watts (2000), based upon the concepts of primary and peripheral participants. In some teleconsultations (particularly NP-Pr interactions) nurses spent some of the interaction as peripheral participants – able to see and hear the content of the teleconsultation, but without an active role. However, the openness of the interaction allowed them, where necessary, to increase their level of presence and become primary participants who were actively involved. This change in the level of presence relates to the mobility of participatory status described by Monk and Watt (2000), in which actors in teleconsultation take on different roles at different times.

Expanding the role of the nurse

One of the findings to emerge from the data was that not only did teleconsultation allow nurses to do things differently, but also, on occasions, to do different things. As a result, some nurses suggested that their level of presence could be enhanced through the ability to have an extended role or to hold a more powerful position than they might do in a traditional interaction.

One of the simplest examples of teleconsultation expanding the role of the nurse and enabling a wider scope of operational presence was through the introduction of technical support into the nurse's repertoire. Though a common theme, it was best demonstrated by the previously cited statement from participant TC10 – "*…9 times out of 10, by turning it off and rebooting it and stuff, I've sorted it out.*"

This element of operational presence required nurses not simply to take on another task, but to become the experts in understanding the functioning of the technology. The growth of expertise was also apparent in some clinical tasks. In N-P teleconsultations, nurses described how they were empowered to carry out a wider range of clinical roles autonomously:

"*[the nurses] are skilled to develop their clinical abilities…the nurses are very, very good at triaging and when we do need a doctor they usually agree with what we thought…*" (TC01)

In NP-Pr teleconsultation, the nurses who were proximal to their patients described being given additional autonomy to carry out new roles and enhance their clinical presence to support the remote practitioner. One particular example related to the assessment carried out by nursing staff of patients with suspected stroke, who were potentially suitable for thrombolytic therapy:

"...the consultants were worried that [the nurse] might make a mistake or they might miss something. So, initially, they would sort of watch everything...As it's gone on, I'd say the telemedicine is used less. I'd say the telemedicine is used a bit more as an eyeball than an actual assessment...because the nursing staff have been doing it for a long time and the consultants all know the nurses and the nurses all know the consultants, they are actually quite happy and quite confident in, you know, 'the nurse says the score's this' that they'll go with it." (TC15)

This example demonstrated how teleconsultation enabled the clinical presence of the nurse. In traditional practice, when all practitioners are at the bedside, the nurse may play a relatively passive role, focusing on supporting the patient (i.e. a focus on provision of therapeutic presence). However, nurses from this service described how, over time, their role had become broader and more prominent because of the new dynamic within the teleconsultation.

Carrying out the role of 'assistant' or a 'pair of hands' during a teleconsultation, even if an expansion of the previous role, could hypothetically challenge the autonomy and professionalism of nursing staff. Sandelowski (2002) drew parallels between the role of a nurse in an NP-Pr teleconsultation and the stereotypical view of the profession as physicians' assistants. Indeed, there were occasional hints in the data that the doctor-nurse relationship during teleconsultation still demonstrated a rather old-fashioned power dynamic:

"We've then got to get the position right of the [teleconsultation] cart. You're supposed to move the cart to the [indicates right hand side of bed] *because the doctors always like to stand on the patient's right...So you have to make sure that you get the medicine cart in the right place, otherwise they chunter at you!"* (TC10)

However, previous studies of nurses and teleconsultation have identified that the change in the delivery of care has often been accompanied by an expanded, more autonomous role (Gerrard et al., 1999). Aas (2001) carried out a qualitative study of healthcare practitioners working within a range of clinical services utilising teleconsultation. One of the findings was that practitioners took on a range of new roles and skills linked to the new modality of care. Many of those roles identified by Aas (2001) were technical roles, supporting some of the findings from this study. From a professional perspective then, the use of teleconsultation may broaden the scope of nursing and therefore enhance the range of clinical presence achieved.

The work of Mort et al. (2003), based in a teledermatology clinic in which nurses were proximal to the patient, highlighted how their role evolved over time, carrying out a range of clinical and technical functions and developing a skill set that incorporated areas surrendered by the remote practitioner. Rather than simply answering questions and following instructions, the nursing role evolved "…from information gatherers to knowledge producers, from delegates to mediators" (Mort et al., 2003:289).

There was evidence from participants that in addition to taking on new clinical roles, they too developed some of the mediation and knowledge producer characteristics identified by Mort et al. (2003). In some cases, the use of teleconsultation enabled nurses to pass on their skills and knowledge to less-experienced or unregistered colleagues at the other end of a video-link:

"..I think it is almost like some form of clinical education in a way…Some of the nursing homes do have blood pressure monitors and the staff should be well aware of how to use it, but again, if they are having difficulty, we can guide them through. So it

is almost like a junior member of staff shall we say, that we have to guide and teach and educate…" (TC02)

The intermediary role described in chapter 7 as an element of clinical presence was also enabled through specific characteristics of teleconsultation. Because some agents in interactions were physically remote and connected through technology, the intermediary role held by the nurse became even more important. In addition to the technical interpretation discussed in chapter 7, where nurses explained to patients or other agents the function and purpose of the teleconsultation technology, video-mediation also required nurses to play a greater role in interpreting and mediating communication between different agents. For example, one nurse involved in NP-Pr teleconsultations described the importance of the role in those patients struggling to hear information from the remote physician:

"If they're hard of hearing then it is as well a case of making sure that they have understood what he's meant to a much greater extent…" (TC09)

The nurse's intermediary role could be enhanced to such an extent, that the traditional power dynamic of the physician leading the consultation alone could alter:

"It feels a bit more of a partnership really. They will ask you to double-check things and 'can you get them to do that?'" (TC15).

Conclusion

Participants within this study suggested that there are certain characteristics of teleconsultation that enabled the provision of nursing presence. The characteristic cited most often was the ability for different parties in the interaction to be able to see each other. The availability of visual cues appeared to particularly enable clinical

presence (by offering a more detailed assessment of patient need) and therapeutic presence (by improving different elements of nurse-patient communication).

Other characteristics also acted as powerful enablers of presence. Operational presence was increased by offering nursing care regardless of distance or other barriers; the open nature of consultations increased clinical presence by enabling a greater role in decision making; the ability to focus more on the patient without distraction enabled all elements of presence.

In addition to enhancing existing nursing roles, teleconsultation appeared to enable presence by underpinning expansion into new roles. The need for technical support and interpretation was filled by the nurse; the requirement for physical examination on behalf of another offered new clinical roles; the opportunity to support and guide remote agents in the delivery of care allowed for the development of an enhanced role in education and delegation.

Many of the enablers discussed by participants were described in comparison to alternative methods of mediated communication – notably the telephone. The data therefore placed teleconsultation on a spectrum of communication modalities where, in relative terms, it was viewed as being a richer and more effective medium than the telephone. As an extension of this hierarchy of media, the next chapter highlights that many of the constraints to delivering nursing presence in the context of teleconsultation were framed in comparison to face-to-face, physically proximal interaction with patients.

CHAPTER 11: CONSTRAINTS – *"THERE IS NOTHING TO REPLACE A CUDDLE"*

Analysis of the data from interviews lead to the emergence of findings demonstrating that nurses perceived a series of factors, related to teleconsultation, which acted as constraints to their nursing presence. Some of these constraints were linked to the inherent characteristics of video-mediated care, such as the inability of the remote practitioner to touch the patient. Others were not due to the use of teleconsultation *per se*, but were more dependent on the reliability or performance level of the technology (e.g. picture or sound quality).

Much of the discussion within this chapter focuses on those constraints directly related to video-mediated communication, including the loss of touch, lack of physical proximity, abnormal gaze, feedback delay and technical failure. However, there is also some discussion of constraints associated with broader factors, such as feelings of professional worth, disruption to previous patterns of working and levels of personal Information Technology (IT) literacy. As with the enablers discussed in the previous chapter, constraining factors of teleconsultation were often discussed in relation to other modalities of interaction (notably face-to-face).

Losing touch

One of the defining characteristics of carrying out a consultation via video is that the two 'ends' of the interaction are unable to have any physical contact with each other. From a nursing perspective, this was most keenly felt when the nurse was remote from the patient (i.e. during N-P teleconsultations). Participants described this constraint both in relation to the direct effect that lack of touch had on their clinical presence, and the impact on broader, more therapeutic, elements of the nursing role:

"I think that the most difficult part of it initially was not being able to physically touch the person that you were speaking to, which is a huge thing....to touch them, to reassure them, to feel their pulse, to feel their skin. All your visual assessments that that you do as a nurse, we do have that video link, but that touch element of that isn't there." (TC02)

"...as a nurse, you're used to being able to observe your patient and touch your patient and see everything about your patient. And you might get much more non-verbal cues and everything while your patient's physically in front of you." (TC14)

"[I was sceptical about]...the idea of assessing a patient when you're not actually physically in front of them and you can't touch them." (TC12)

There was also recognition that external perceptions of the value of teleconsultation might be negatively influenced by the fact that touch was lacking from the interaction between nurse and patient:

"People's perceptions out there is – at this moment in time – if you can't touch a patient, it's not right." (TC11)

Whereas an inability to touch might be considered a constraint for any healthcare professional involved in teleconsultation, it is arguably of particular relevance in nursing practice, where touch is sometimes considered to be an inherent part of the role. There is a plethora of research, opinion and reviews in the nursing literature, highlighting the importance of touch as a prerequisite to high quality care. For some authors, the place of touch as a central tenet of nursing care is unquestionable. Chang (2001: 820), for example, claimed that "...it has been accepted that physical touch is an essential and universal component of nursing care..." The literature surrounding

touch in nursing can go beyond simple claims of its importance, and drift towards standpoints that are arguably overly emotive and lacking in objectivity. One notable example is from Edvardsson et al. (2003: 606), who described the phenomenon of touch by nurses in caring for older people as "…an experience where one suddenly perceives oneself to be a valuable person and professional – a person and professional who is no longer powerless in the face of older patients' haunted and disrupted bodies, but one who, by means of touch, has gained power to ease this suffering."

The grounded theory of teleconsultation outlined within this thesis raises a challenge to opinions such as this. The findings from this study suggested that the lack of touch might constrain the level of presence that can be delivered through teleconsultation. However, those authors for whom touch is central to the nursing role appear to argue that the delivery of 'real' nursing is not feasible at all by a remote nurse via video-mediation. Though the data suggest that lack of touch is indeed a constraint, it is neither an insurmountable one, nor one that detracts from the essence of nursing care – nurses involved in teleconsultation are still caring, just in a different way.

Arguing that nursing without touch is still nursing requires some dismantling of the view that touch is fundamental to the delivery of care. There is no doubt that touch is something that takes place in very many nurse-patient interactions, that touch can be a powerful facilitator of nurse-patient communication and that there is good quality evidence that touch, when used appropriately by nurses, can offer benefits to patients in a variety of clinical settings (Coakley & Duffy; 2010; Karagozoglu & Kahve, 2013; Lindgren et al., 2013). It could therefore be hypothesised that if a nurse is remote from their patient and only able to communicate through the medium of video, an inability to touch will preclude them from offering high-quality care.

However, being commonplace and providing benefit, does not, in itself, make a particular intervention or approach a fundamental and universal element of the nursing role. For example, medicines management is an extremely common element of many nurses' roles. It has been estimated that in some clinical areas, up to 40% of a nurse's time may be spent engaging in the administration of medication (Audit Commission, 2001). It is also self-evident that the accurate, timely and safe administration of prescribed medication will provide benefits for patients. Medication administration also provides opportunities for patient-centred interactions that can promote understanding and patient participation (Bolster & Manias, 2010). These factors do not, however, mean that a nurse whose specific job role does not include the administration of medication should be considered in any way to be 'less' of a nurse. In the same way, there is no doubt that touch is an important aspect of nursing care, but it should be considered to be a tool – one part of the nurse's armoury that can be utilised when feasible and appropriate. Like any tool, it can be valuable when used correctly; counterproductive when not. When touch is not possible, as is the case with teleconsultation, this study demonstrates that nurses use other tools to compensate and adapt. In essence, nurses can nurse without touch; carers can care without touch. This was highlighted by a number of participants who suggested that losing the ability to touch did not impact substantially on their capability to carry out their clinical roles:

"...you can still do an ABCDE on them. You can still look at them and you can still get quite a good picture as to whether they're quite right or not..." (TC13)

"...specific clinics, obviously we will need to touch and examine the patient, but most of the outpatient clinics are I suspect are very much sitting, talking, discussing and consulting." (TC01)

Though the lack of touch did not seem to remove entirely the ability to care, findings suggested that some nurses felt a direct impact of the lack of touch in relation to the level of clinical and therapeutic presence that they could provide. In terms of the former, there were specific activities or areas of care where the inability to touch the patient meant that no degree of clinical presence could be achieved. In these areas, the lack of touch underpinned decisions about where teleconsultation would or would not be a suitable modality of care. Where clinical presence was not possible due to the inability to touch (and could not be compensated for through other means - see Chapter 12), nurses came to the conclusion that teleconsultation would not be an effective or appropriate approach:

"...you can't inspect someone's injection site, so if it was a physical examination, it wouldn't be appropriate." (TC06)

A more detailed and nuanced exemplar of this was explored in Chapter 5, with the burns specialist nurse who was a strong advocate of teleconsultation in the context of acute assessment, but did not support an extension of the video service into follow-up clinics because *"there is no substitute for feeling a burns scar"* (TC03). This insight, and those from other participants, suggested that nurses were able to identify clear lines of demarcation where teleconsultation could and could not facilitate clinical presence – a point explored further in the following chapter.

With clinical presence, the inability to touch could, in some circumstances, have a binary impact: either it was possible to offer presence or it was not. In the case of therapeutic and social presence, the impact was subtler. Instead of necessarily excluding certain activities from being suitable for teleconsultation, the lack of touch instead influenced the degree to which therapeutic and social presence could be

achieved and, as a product of this, the quality of care provided. Though the scope of this project did not include the capture of direct patient feedback, some of the nurses interviewed implied that the lack of touch had a negative impact on the experience of those receiving care:

"For me, as a children's nurse, [the inability to touch] is quite a loss actually, because we touch children and their parents when they are upset quite often…there is nothing to replace a cuddle. You know, a reassuring hand around the back." (TC04)

"If somebody was to get upset for example at the other end, I would find that quite difficult to provide the reassurance that I could provide face-to-face." (TC16)

The impact that losing touch had on presence in teleconsultation mirrored previous work on the different types of touch in nursing more generally. Fredriksson (1999), as part of a qualitative research synthesis of the caring conversation, described three categories of touch: 'task-orientated', 'caring' and 'protective'. Though the final of these three (which represented touch to prevent physical or emotional harm) was not explicit within the findings of the current study, there seemed to be alignment between task-orientated touch and clinical presence, and between caring touch and therapeutic presence.

Other authors have adopted alternative terminology to represent the different types of touch. For example, Routasalo (1999) described the difference between necessary and non-necessary touch. Necessary touch was that which nurses needed to do to carry out certain tasks (such as feeling a burns scar) whereas non-necessary touch related not to a specific task, but may provide reassurance, enhance communication or strengthen the nurse-patient bond (Routasalo, 1999). This conceptualisation fits neatly with the data from participants in this study: where remoteness precluded the use of necessary

touch, clinical presence could not be achieved and the modality was not considered appropriate (unless an effective form of compensation could be identified). Where it was non-necessary touch that could not be provided, it was still possible to provide nursing care and have some degree of presence. However, in some circumstances, the degree of therapeutic presence was not as high as participants appeared to wish.

In terms of therapeutic presence then, the data from participants seemed to fit with a 'better than nothing' conceptualisation of teleconsultation, in which the nurse is not able to offer the same level of presence as a face-to-face interaction, but can supply at least some of the care required. Previous authors have supported this view. Low et al. (2013), explored the care and support provided to a dying patient and their family via teleconsultation. Though expressed using rather emotive language, the arguments put forward by Low and colleagues were very similar to those proposed by some participants in this study: "The warm touch, the hug, the wiping away of tears can never be performed remotely…However, between a telemedicine encounter or worse still, nothing at all, the former could act as a better bridge between patient and physician or nurse" (Low et al., 2013: 355).

For nurses who were physically proximal to patients during interactions with medical staff or other practitioners (i.e. NP-Pr teleconsultations), there was similar feedback related to the need for clinicians to be able to touch their patient. In terms of the grounded theory, these could be conceptualised as suggestions that teleconsultation did not allow other practitioners to offer the necessary clinical presence…

"They take on the whole patient on a ward round and they should look at the whole patient. You know, down to have they got swollen ankles and all the rest of it. Whereas, if you're sat at home watching telly, you ain't going to pick up something's not right about them. You know, what they can and can't do. And I think they need to be there to actually put their hands on somebody when they're doing that sort of thing. You know they need to listen to the chest." (TC10)

…or therapeutic presence:

"And it's that personal doctor-patient relationship which you're not getting with that." [points at teleconsultation cart] (TC10)

In these examples, the constraints of teleconsultation related not directly to the level of nursing presence, but to the presence of other parties. The nurses' roles in these circumstances focused more on helping others to compensate for the lack of touch – a subject addressed in more detail within the next chapter.

What also became apparent in relation to N-P interactions was that the move to using teleconsultation by some of the study participants had led them to reflect on just how often they did need to touch patients. In some cases, the conclusion was that losing touch made little difference to the quality of care that they provided:

"...once you get used to not physically being able to put your hand on a patient's arm or whatever, there's very little else. As long as you can see the patient, that for me is the vital bit." (TC11)

"I mean, do we touch patients that much? I don't know. Maybe we think we do. I don't know." (TC13)

In others, however, the loss was felt to a much greater extent:

"...it's amazing how much you get from being able to touch. I didn't realise – that's one big thing I've learnt from coming down here [to the teleconsultation service]: how much I use my sense of touch. And for reassurance as well." (TC12)

These quotes all echoed the definition of non-necessary touch proposed by Routasalo (1999) – the use of touch was not integral to the delivery of care, but was something that some respondents valued more than others.

Losing proximity

The inability to touch patients is an obvious consequence of the distance between both agents in a video-mediated consultation. However, it is also possible that the lack of proximity itself may impact on the effectiveness of nursing interactions with patients. Some of the data from interviews that highlighted the constraints of teleconsultation on delivering presence made no explicit reference to touch, but alluded to a broader issue:

"You know, it ticks all the boxes in that you can talk to them, but yeah, there's something about face-to-face contact that you lose...you've got all your key aspects of communication. You've got your sound, you've got vision. I don't know. There's something, something I can't really define that you lose." (TC05)

One possibility was that the element lost from face-to-face contact was the ability to forge a strong therapeutic relationship. For some authors, the development of an effective nurse-patient relationship is predicated on the need for the two parties to be spatially close (Peter & Liaschenko, 2004). It this standpoint is taken, then physical

proximity in nursing is not simply a means to an end (the end being the ability to touch the patient) but is an end in itself.

Malone (2003) described proximity as being a foundation of all nursing care and suggested three subcategories: physical proximity (involving bodily nearness and touch), narrative proximity (which relates to 'getting to know' the patient and their needs) and moral proximity (in which the nurse recognises the need to act on the patient's behalf). Malone suggested that these elements of proximity are 'nested', with moral proximity dependent on the successful achievement of narrative proximity which, in turn, can only occur when physical proximity exists. It is this final point that is contradicted by the findings from this current study. Whereas previous chapters have demonstrated the building of effective nurse-patient relationships via teleconsultation, Malone (2003) suggested that without physical proximity, such a relationship cannot be developed. Though Malone uses the title 'distal nursing' to described those with a less patient-centred, more administrative role, it could be hypothesised that she would also characterise nurses remote from their patients in similar terms.

Malone's paper on proximity in nursing contains a number of warnings regarding the impact that changes to the organisation of nursing and healthcare (such as shorter length of stay and alterations to nursing documentation) may have on the standard of individualised patient care. There are elements of Malone's theory that appear at times as a rather rose-tinted retrospective examination of 'the good old days' of nursing (a section bemoaning the elimination of the back rub as a part of routine nursing care serves to strengthen that perception). However, the essence of what Malone suggests – that patient-centred nursing care is built upon physical proximity - seems to support the perceptions of some participants in this study.

Aside from the examples where lack of touch impacted on clinical and therapeutic presence, a number of respondents also described a vaguer, more nebulous feeling that interactions through teleconsultation were just 'not the same' or were 'missing something':

"This is going to sound stupid and I know that it is face-to-face, but it is not the same as actually having the person in the room." (TC09)

"I just feel there's a barrier there – I don't know why…I think you position yourself appropriately more [in face-to-face consultations], whereas over the telemed, I don't think it feels as personal." (TC13)

There is a case to made that the 'something' that is lost relates to the lack of physical proximity which may, in turn, impact on the ability to develop the narrative and moral proximity described by Malone (2003) as being necessary for an effective relationship. This was alluded to by one participant who used teleconsultation to support the delivery of out-patient clinics:

"...people, I find, are less willing to kind of share information with you through a video link than they are with you if they're in the room with you as well…You know, they're less forthcoming via the video-link." (TC16)

Though this suggests that Malone (2003) may be wrong in her assertion that physical proximity is a necessity to provide nursing care *per se*, it may be that in some contexts and with some practitioners, a quasi-physical proximity (which could be seen as 'virtual proximity') may not allow for the optimal development of a therapeutic relationship.

Literature focusing on nurses' use of technology also offers some clues into what the 'something' is that may be lost during a teleconsultation. Nagel et al. (2013) described a weakness of video-mediated communication that linked to the loss of physical proximity on the part of the nurse, but was not a specific product of the lack of touch. Their argument, (or at least their challenge) was that nurses cannot provide holistic care when they are only able to see or assess a section of their patients' needs. This relates not simply to the inability to carry out a physical assessment, but focuses more on the ability to 'know' the patient when reliant on video-mediated communication.

Knowing the patient, their behaviours and their personality has been a theme within academic nursing discourse for over 20 years and is seen as fundamental element of nursing care (Tanner et al., 1993). In a review of the previous two decades' work in this area, Zolnierek (2014) highlighted the complexities inherent in the process of knowing patients and cited the importance of factors such as informed thinking, reflection, observation and, of particular importance in the context of this study, physical presence. Though Zolnierek (2014) did not discount the ability of nurses to know patients without having physical presence, it seems implicit within her argument that this process would be hindered. In works specifically focused on nurses and technology, the impact on knowing the patient is outlined more explicitly: Nagel et al. (2013) argued that the capacity to know patients in a traditional nursing sense is reduced during a teleconsultation or in other telehealth applications, due to the reduced richness of the interaction. One explanation of the 'something' described by participants in this study may therefore be a lack of knowing about their patients.

Eye contact and time lapses

The nebulous 'something' described by participants as being missing during teleconsultations may be linked to factors of a much more technical and specific nature than loss of touch or a lack of 'knowing'. In particular, some participants described how the relationship built with patients during teleconsultation was affected by the inability to make normal eye contact:

"There's the problem with eye contact. That's one downside that I find, 'cause it's difficult looking into the camera, which sits on the top part of the computer, because you're not looking at the patient on the screen in front of you. But by doing that, you're not making eye contact with them, which is, I think, something that you lose doing that…I think you lose a kind of warmth." (TC16)

In most teleconsultation systems, video cameras are positioned at the top of any screen, thereby compromising the ability to make 'natural' eye contact. Instead, looking directly at the image of the individual(s) on the screen will give the appearance to someone at the other end that gaze is being directed downwards (figure 11.1) (Tam et al., 2007).

Given that eye contact is considered a fundamental element of effective practitioner-patient communication (Caris-Verhallen et al., 1999; Gorawara-Bhata & Cook, 2011), it seems feasible that the abnormal gaze identified as a characteristic of many teleconsultations does indeed explain, at least in part, why some of the nurses interviewed felt that there was something missing during video-mediated interactions.
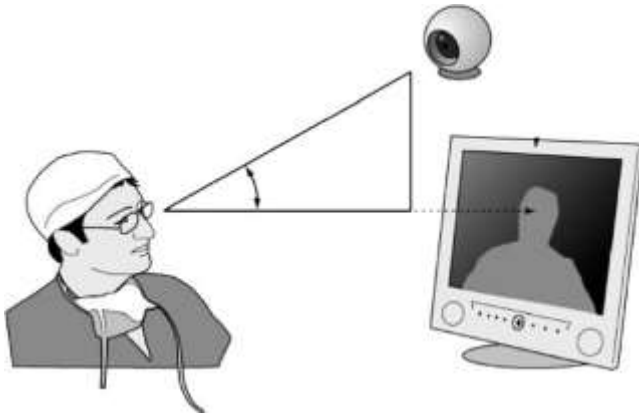
Figure 11.1: Eye gaze angle in a traditional teleconsultation. The angle means that the practitioner will appear to be looking down, even though they are looking directly at the patient on screen (from Tam et al., 2007:36)

The slightly unnatural nature of teleconsultation suggested by some participants may also link to changes in auditory cues. Some participants described the presence of visual or auditory feedback delays during teleconsultations. These delays appeared to impact on not only the quality of interactions (through, for example, causing the conversation to become stilted), but also on broader feelings about the value and feasibility of video-mediated communication:

"You've got a slight time lapse which some people find it difficult to get the hang of. It's not hugely obvious, but it is there, so you'll find that perhaps [the patient] will interrupt [the consultant] before he's kind of finished the question." (TC09)

"We had some technical problems at the start…There would be things like feedback from the speakers that was really distracting – you could hear what you were saying and it was delayed on the other end. It was quite frustrating for me at the start as well…I've had times where I think 'oh goodness, this just isn't going to work." (TC16)

Within video-mediated interaction, small feedback delays (less than 80msec) may be tolerated without any impact on the quality of conversation. However, longer delays will have an impact, due to them breaking the synchrony between audio and visual cues (Bruce, 1996). Delays are thought to contribute to increased frustration amongst participants in video-mediated interaction and cause difficulty in interpreting the

emotions of others (Powers et al., 2011). Delays also hinder the ability of participants to manage turn-taking during the interaction, thereby leading to overlapping speech and disrupting the performance in any task being undertaken via video (O'Malley et al., 1996). This may offset some of benefits of sight as an enabler of nursing presence, as explored in the previous chapter.

In the context of nursing teleconsultation, the impact of time delay is less well understood. Sorknaes et al. (2011:32) mentioned briefly that nurses operating their teleconsultation service experienced a feedback delay, but give no more detail on the impact of this, other than it "…was slightly disturbing." Similarly, Hibbert et al. (2004) described how technical issues, including time delays, caused stilted conversation between participants in teleconsultations. This study was based on technology from 2001, so could be considered non-representative of current systems with higher bandwidth connectivity, but the point holds that sub-optimal technology is a limiting factor in the effectiveness of teleconsultation.

Though feedback delays and their impact on the quality of the interaction were described by participants in the study, they were by no means mentioned frequently. This could be considered a surprise given the effect that feedback delays can have on the effectiveness of teleconsultation. Part of the reason why feedback was mentioned infrequently may have been because the technology used by those nurses involved in the study had a high standard of performance. The amount of delay experienced in video-mediated conversation has certainly decreased since much of the work on feedback delay was first published in the 1990s and early years of 21st Century: a time associated with dial-up internet access, low bandwidth communication and slow refresh rates on cathode-ray monitors. However, it is also possible that the reason

feedback delay was not described regularly was because the phenomenon was not perceived consciously by participants.

Feedback delays that participants are not conscious of, but which are long enough to disrupt the flow of conversations, have been identified during previous studies of video-mediated communication (Parkinson, 2008). It is possible therefore that these 'micro-delays' were present in nurses' interactions with patients, but were not being consciously noted by nurses (and therefore not discussed during interviews). However, these subliminal delays may have contributed to the strongly emerging finding that conversation during teleconsultation was 'not quite the same' as face-to-face interactions.

Technical failure

The constraints associated with eye gaze angle and feedback delays in audio transmission are inherent aspects of communicating via video, often present even when the technology is performing to its optimal effectiveness. However, there was much discussion by participants regarding occasions where the technology failed to function properly (or optimally), and the impact that this had on the quality of the interaction and the delivery of care. There is a long-held and intuitively sound understanding that whenever technology is used in nursing practice, failure of that technology will hinder nurses' ability to carry out care (Wright et al., 2001). These technical issues were often described as caveats to the general effectiveness of teleconsultation – for example, one participant highlighted how their teleconsultation service was extremely beneficial *"...as long as we have a good quality picture"* (TC01), with picture break-up occasionally getting in the way of carrying out a full assessment.

In most cases of technical failure, the root of the problem appeared to be the connectivity between different participants in the video-mediated interaction. When connections had either failed entirely or were too slow to facilitate the necessary quality of interaction, participants described delays in the delivery of care and frustration for practitioners and patients. The level of disruption and anxiety caused to nurses appeared to be greater when the primary function of teleconsultation was linked to the delivery of acute care. One such event was described by a nurse who provided support to patients with symptoms of stroke, whilst participating in video-mediated assessment by a consultant neurologist:

"There have been occasions where it's not worked and they have had to do it over the telephone, with the consultant not even being able to see the patient, which obviously isn't very good. I've had problems in regards to the technology at night and that the telemedicine wouldn't work and the consultant was getting more and more annoyed…that all impacts on you as the nurse stood with the patient." (TC10)

Even in less acute settings, technical failure could be extremely disruptive, particularly for those users who may already have misgivings about using technology. Another participant described the impact that technical failures had on patients taking part in video-mediated out-patient clinics:

"...there's a number of people [patients] who aren't particularly comfortable with it and they'll tolerate it if it's working, but they get quite agitated if it doesn't work. A lot of our patients are older, so the technology is all new to them." (TC16)

The impact of technical failure on the quality of the teleconsultation (or even on the ability to complete it) appeared, in turn, to limit the degree of presence a nurse could have during the consultation. Poor picture quality hinders the ability to carry out a

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visual assessment, thereby reducing clinical presence; problems with transmission of visual or auditory cues impact on non-verbal communication and thereby limit therapeutic and social presence. Complete failure of the system may even lead to the entire interaction between nurse and patient failing to take place, disrupting the pathway of care and thereby constraining the operational presence of the nurse.

Professional worth

Some of the constraints explored above impacted not only on the perceived quality of care delivered to patients, but also on feelings of professional worth articulated by some respondents. The inability to touch or be close to patients led some of the participants to suggest that engaging in remote consultations was a move away from their traditional nursing role. In the terminology of the grounded theory of teleconsultation, these nurses may have been responding to the fact that the constraints of the medium meant that they were not able to offer the same level of nursing presence as in other types of caring interactions. For some of those nurses who had become specialist teleconsultation nurses, with no traditional 'bedside' functions remaining as part of their role, this prompted reflection on elements of nursing that they missed from previous times:

"I think [I miss] the physical contact, the basic cares, the washing, the being close to the patient in that way. Talking to them in a more natural way. That bond that you get with your patients." (TC12)

"...some really don't like to do it. They would much rather be out there 'hands on' with the patient..." (TC01)

In one specific case, a specialist teleconsultation nurse was asked if, from a purely nursing perspective, she derived the same level of job satisfaction:

"No. No you don't. No. Because, I suppose, I like doing the actual cares. You know, the personal care – 'C'mon, we'll have a wash', and then you chat, don't you. You're not getting that…" (TC13)

Issues such as this have not been discussed widely in the literature surrounding teleconsultation. However, parallels can be drawn from exploration of similar issues, but with slightly different modalities of care. For example, Brewster et al. (2013), in a systematic review of the barriers to frontline staff accepting technology-mediated care services (specifically remote monitoring services), alluded to some issues linked to discomfort over changing roles. The review described how literature related to nurses and remote monitoring suggested that practitioners felt discomfort in making the move from direct to technology-mediated interactions with patients.

Elsewhere, there have been similar findings apparent in studies related to nursing roles in the telephone triage sector (such as NHS Direct/111). These works have shown how telephone triage nurses, working without the ability to either touch or see their patients, seek to carve out a nursing niche and struggle to convince others that they are carrying out 'real nursing' (Purc-Stephenson & Trasher, 2010; Snelgrove, 2009; Snooks et al., 2008). Findings from this study suggest that nurses who carry out video-mediated consultations with patients as all or most of their nursing role, experience the same guilt, pangs and tensions as those working within the context of telephone triage.

Though the findings from this and other works may relate to some of the specific issues described here in the context of teleconsultation (loss of touch; lack of physical proximity), they also reflect more general issues with the introduction of technology

in nursing care. The relationship between nursing and technology has been the subject of much debate, and previous work suggests that whenever any technology is introduced into the care environment, it can provide a challenge to the role of nurses as providers of patient-focused, holistic care (Turkel, 2001). Literature exploring this area has often taken the simplistic position that the use of technology and the delivery of humane, individualised nursing care are opposing concepts (Barnard & Sandeloski, 2001). This might, in turn, result in nurses feeling that technology constrains their professional desire to offer individualised care (Barnard, 2000). Much of the work around the broader impact of technology in nursing has focused on devices that have a direct, functional role in care delivery, such as ventilators, dialysis machines and infusion pumps. Nurses working in environments where these technologies are prevalent (such as critical care) have reported that they feel the focus of care can shift from the patient to the technology. Though the evidence-base is less mature in areas such as teleconsultation, this current study suggests that there is also evidence that nurses using telehealth technologies such as teleconsultation experience similar challenges.

The work in this area and the findings from the current study all offer clues to why nurses working in technology-rich environments generally, and with teleconsultation specifically, might feel this type of role discomfort. Some of the potential reasons have already been discussed within this chapter: loss of touch, lack of physical proximity, or a reduced sense of knowing patients may all impact on job satisfaction and feelings of professional worth. Equally, there are suggestions that working through a technological medium may result in a more reductionist, rather than holistic, approach to nursing care (Nagel et al., 2013). There is some evidence that this may have been the view of respondents within the current study. There was a clear focus from some

participants on the 'object' of teleconsultations – i.e. an emphasis on operational and clinical rather than therapeutic and social presence. This focus on 'harder', rather than 'softer', elements of nursing practice may not be to the liking of some staff, resulting in a degree of role anxiety.

Disruption to previous systems of work

By their very nature, teleconsultation services are designed to disrupt existing patterns of working and modalities of care. Face-to-face services are replaced by video-mediated interaction; geographical considerations become irrelevant; the provision of specialist support can be reorganised. Though this can bring great benefits to patients, their carers and the providers of healthcare, disruption can be associated with constraints and challenges that impact on the role of nurses.

Though teleconsultation may reduce travelling time for some patients or practitioners, the actual act of setting up the necessary video equipment can add to the workload of nurses. Those respondents who referred to this problem identified it as a substantial challenge, particularly in relation to encouraging the use of teleconsultation by other nurses:

"I get really quite frustrated that there hasn't been more engagement. I think people are busy. The reason people don't engage is they are all busy and they think this is an add on." (TC01)

"I think the main difficulty is people's perception of it that it is not a time wasting thing, but that it is a time impacted thing. You know, it does take longer to do…" (TC03)

"Well there is a resistance sometimes to using the equipment…people would say 'I'm not going to telemed that, I haven't got time. It is too long a process and we've got too many patients.'" (TC04)

The previous chapter highlighted how the operational presence of nurses involved in teleconsultation may be enhanced and enabled through the need to supply technical support and expertise. Though this expansion of their role might be welcomed by some, it is important to remember that with extra roles come extra workload. Given the pressures often experienced by nurses, this increase in workload may exacerbate their reluctance to accept teleconsultation as a feasible way of delivering care.

The disruption to established practice did not simply relate to the scope and level of nurses' work. On some occasions, the disruption and constraints were linked to extremely mundane items such as the physical environment in which teleconsultation could take place:

"You know, how do you get the audio-visual equipment to hang from an open plan, old [intensive care] unit, where they've got fake ceilings, etc., etc?" (TC17)

"I think one of the problems has been actually finding a place to do it…it's getting a room suitable for doing an outpatient videoconsultation. That's part of it." (TC05)

"… [there are difficulties with] the practical aspects of putting it somewhere. It is a big piece of kit. It's not small and there is not really anywhere to put it…" (TC03)

However, literature related to previous teleconsultation projects suggest that when the perceived benefits for patients are great, nurses are willing to tolerate inconvenience and additional workload. Wright et al. (2001) described a teleconsultation programme for patients in the United States with COPD. A range of challenges and constraints

with the service and the technology were described. However, the nurses involved were able to cope with and overcome these because they "…believed that the technology was an inconvenience for them, but was effective for the patients." (Wright et al., 2001:214). In a broader technological context, Brewster et al. (2013) identified that nurses participating in the use of remote monitoring services reported similar issues, with concerns about additional workload being overcome as long as there appeared to be benefits for patient care. The data within this study suggested similar feelings amongst those nurses using teleconsultation – a willingness to tolerate constraints to presence as long as patient benefits are achievable:

"So I think people's perceptions, the training issues and the size of it are the main drawbacks, but I think that from my point of view, I still think the benefits outweigh all of those." (TC03)

Differing perceptions of constraints

During interviews, participants expressed a range of views on the different constraints they had encountered during their experiences of teleconsultation. However, some also reflected on why they or some of their colleagues were more sensitive to those constraints than others. These reflections suggested that the context-specific influences on nursing presence in teleconsultation were not due simply to the clinical context or performance of technology, but to differences in nurses' acceptance of new systems of working.

In some cases, the feeling from participants was that nurses were resistant to using teleconsultation because of a more generalised resistance to changes in practice:

"I think it is a personal view [why some nurses don't engage] rather than necessarily from evidence, but I think partly sometimes there are things they like doing and things they don't. There are other people that are far more open to change and new innovation than others…" (TC01)

Others felt that the technology itself was the primary factor that influenced acceptance. On occasions, the fact that teleconsultation relied on the use of innovative technology exacerbated any general misgivings about the potential benefits; in other examples, the use of technology was in itself an attractive proposition:

"...there are just some people that really don't really get on with the technology…" (TC01)

"I have people that are technophobes and people that are really into technology and want to use it." (TC03)

Many of the participants described not only their own colleagues' feelings towards the use of new technologies in care, but also reflected on their own sensitivities to the constraints of new ways of working. Much of the discussion in this area appeared to be related to existing levels of IT literacy generally and comfort with video-mediated communication specifically:

"I am not very IT literate, so it has been a very steep learning curve for me." (TC02)

I think for the younger generation, they probably won't have a problem with it, because they're used to – you know- iFacing (sic) *and all the rest of it. For people of my generation, I think we would probably find it much more difficult."* (TC17)

"Technology does worry me because I'm of that generation where I'm still learning about it…you know, I've never Skyped anybody." (TC08)

Fear of using new technologies in the workplace is a well-documented phenomenon in nursing and other sectors. In the field of nursing informatics, there is recognition that for many nurses, a move from paper-based documentation to electronic records can be a source of technophobia-based anxiety and apprehension (Bergfeld & Parker, 2010). Parallels can be drawn with the introduction of teleconsultation: anxieties related to the move from face-to-face to video-mediated communication mirroring those accompanying the transition from 'traditional' paper-based documentation to computer systems.

Where specific anxieties about a move towards teleconsultation have been explored in previous works, general worries regarding using technology can be exacerbated by specific characteristics of video-mediated communication such as nurses feeling self-conscious about seeing themselves on a television screen (Gerrard et al, 1999). Again, this was identified by some participants within this study:

"...nobody really likes seeing themselves on telly." (TC15)

Conclusion

This study highlights a range of constraints, both actual and perceived, linked to the use of teleconsultation by nurses. These constraints have an impact on the degree to which nurses can demonstrate nursing presence when providing or supporting care that is mediated by video. In some cases, these constraints are purely technical in nature and are mitigated over time as technology becomes more sophisticated and reliable. In others, the constraints are linked to the inherent remoteness of teleconsultation, with the loss of touch and physical proximity.

One thing that is clear from the interviews with nurses is that these constraints vary in scale and impact according to a range of factors. The clinical context, the nature of the teleconsultation, the type of technology used and the general outlook of those nurses involved, will all play a part in the extent to which constraints influence the degree of nursing presence achieved.

The level of constraint on presence can also be mitigated by the final of the three context-specific influencing factors: the use of a range of organisational, clinical, personal and technical compensatory mechanisms.

CHAPTER 12: COMPENSATION – *"YOU USE THE CARERS AS YOUR HANDS BECAUSE YOU CAN'T DO THAT"*

Previous chapters described participants' perceptions of how teleconsultation can act as both a constraint to and enabler of nursing presence. These influencing factors were often described in relative terms to other modalities of providing care: constraints were framed in comparison to proximal face-to-face consultations and enabling factors with reference to the benefits of video above and beyond the characteristics of the telephone.

The findings that emerged from the data also suggested that these constraints and enablers were dynamic, altering over time and in response to the application of compensatory mechanisms by nurses or other agents in the teleconsultation. By identifying and implementing compensatory mechanisms, constraints could be mitigated against, reduced, or, in some cases, turned into enablers of nursing presence.

The data suggested that there were four types of compensatory mechanism related to teleconsultation: The third party, workforce education and development, temporal compensation and exclusion from teleconsultation.

The third party

One of the most commonly cited compensatory mechanisms described by participants was the involvement of a 'third party' who was proximal to the patient during the teleconsultation. The third party took on a number of roles that overcame some of the constraints associated with teleconsultation, notably the absence of touch and physical proximity between the remote practitioner and the patient. In N-P teleconsultations, this third party could be an unregistered practitioner, an RN with a less specialist skill set, or a member of the remote, 'spoke' medical team:

"...you can certainly get community staff, a third party, to come in and do what you are wanting them to do…" (TC01)

"...you can actually start saying [to the third party] 'right, I need you to do this, I need you to do that.'" (TC03)

In NP-Pr teleconsultations, the third party was the RN themselves, as outlined by the nurse who described her operational presence whilst being physically alongside her patients during remote clinics with a specialist physician:

"It means being not exactly the clinic nurse but acting as the nurse within the clinic. So it's kind of supporting the patient, being there to make sure that everything works okay" (TC09)

On occasions, where the teleconsultation was a multi-agency interaction, more than one third party was present and playing a part:

"There will be the patient, their family members there. There'll be me there and probably a doctor there. At the other end, there'll be a doctor. Sometimes there is a nurse or a senior nurse there as well." (TC04)

The role of the third party, whether it be the RN or another practitioner, appeared to be multifaceted. A powerful example of the importance of the third party role was described by a nurse who supported care home residents and unregistered staff via teleconsultation. The nurse described the experience of a colleague (another RN) who, during a teleconsultation, saw a resident collapse and was able to guide the care workers through the immediate assessment and commencement of basic life support:

"...this person initially, at the beginning of the consultation, was sat on the edge of the bed looking quite unwell, quite pale, quite clammy – all the usual symptoms that come along with someone who is actually unwell and during the consultation she witnessed him collapse down on the bed. The carers were with him so she then guided the carers - they were her hands shall we say; they were her hands and eyes which is the way we like to use it. She actually guided them to find a pulse, to see if he was breathing, to see if he had any chest movement so she was guiding the carers to be able to answer that for her. She could obviously see that he was in a collapsed state and obviously wanted to do that for herself but obviously physically you can't do that so you have to use the tools around you and the resources you've got for somebody else to do that. She guided them to start CPR [cardiopulmonary resuscitation] while she was calling the ambulance. She stayed on the line to guide the carers and educated and guided them on doing the CPR until the ambulance crew arrived then she was able to give the ambulance crew a clinical handover when they arrived." (TC02)

This vignette raised a number of specific issues related to the third party role. The real-time use of a third party provided a 'pair of hands' and overcame the challenges associated with a lack of touch. This suggested that the third party can be utilised to compensate, at least in part, for a reduction in nursing presence related to the use of video as a mediator. For example, where the distance between nurse/practitioner and patient constrains the ability to provide an operational presence (such as the coordination and administration of a nurse-led clinic) a proximal third party can provide the necessary on-site support:

"One of the things we identified is that you can't just set up the [videoconference] equipment and expect patients to come in. You need – at the very least – a sort of nursing assistant to coordinate the thing at our ends so you've got a flow of patients coming in and out." (TC07)

In this example, the third party was necessary in relation to two aspects of operational presence. Firstly, the clinic as a whole might not be deliverable without them, resulting in a failure to provide clinical services or meet organisational goals. Secondly, even if the clinic could be delivered, the administration of it would have been compromised greatly by the lack of a physically present healthcare practitioner.

In the previous chapter, the impact of distance and the lack of proximity on the completion of specific clinical tasks were discussed. The proximal third party also has an important role to play compensating for these constraints, as described below by a provider of nurse-led teleconsultation clinics:

"...they [the third party] will bring [the patient] into the room and sit them in front of the telly and make sure that everything is working and then they'll leave. But say I maybe wanted bloods doing or a urine specimen, they would then obtain the bloods or give them a specimen container..." (TC06)

In another example, linked to burns assessment in the ED, the third party was described as compensating for the remote nurse's inability to touch the patient:

"To find out how deep a burn is, you press on it, so you can't do that [during teleconsultation], but you can get someone over there to press on it. So you can get the camera to focus in and say 'right, press on that bit there; press on that bit there.'" (TC03)

Another example of the third party compensating for a remote nurse's lack of clinical presence was provided in relation to the assessment of patients in care homes:

"I've had the carer lay [the patient] on the bed and watched her palpate their abdomen and watched how the patient's responded that. So you have to use the carers as your hands because you can't do that." (TC12)

The same nurse also provided an insight into how she had even learnt to adapt this compensation in response to any limitations in the skills of the third party:

"And they can't all do observations, but you can say to them 'just feel and tell me, is the pulse going boom, boom, boom, or does it feel like it's thready and irregular?'...Or if I say to them 'does he feel hot to touch?', then, you know, you can tell when someone's properly pyrexial. If they've got a tememperature of 38, you can feel it when they touch them. So you're kind of using them as a vessel to get the information yourself." (TC12)

The third party, whether it be an RN or an unregistered practitioner, also had a role to play in compensating for a lack of operational presence, by supporting the technical elements of the teleconsultation:

"...you have to guide them [the third party] to move the camera and the laptop to an appropriate position where you can see the person in question who you are dealing with." (TC02)

In other interviews, nurses described a converse arrangement, in which they acted as the third party. By providing a nursing presence whilst at the patient's side during an NP-PR teleconsultation, these RNs were themselves providing the compensation for the constraints of video-mediated care. In some cases, this was articulated in broad

terms, as with the nurse who was physically proximal to patients during teleconsultation oncology clinics:

"If somebody comes with a problem that needs examination, then it'll be me that does it, rather than the [remote] consultant." (TC09)

In other cases, there were much more specific roles to fill, as highlighted by a nurse assisting, at the patient bedside, with teleconsultation as part of stroke assessment:

"So you get the medicine cart in the right place for them, and then we go through the process of doing our assessment again with them watching…sometimes [the remote consultant] will say 'will you just get them to do such-and-such?'" (TC10)

Though the grounded theory of teleconsultation organises and contextualises the role of the third party in teleconsultation, specific occurrences of the role are described in previous literature. Ferguson (2006) described the role of a proximal practitioner carrying out tasks on behalf of their remote, more specialist colleague during teleconsultations. Esterle and Mathieu-Fritz (2013), in an observational study of approximately 100 teleconsultations between specialist consultants, geriatricians and patients, highlighted the importance of physical examination being delegated to a proximal practitioner. LeRouge et al. (2012:629) outlined a similar role for proximal practitioners in a range of telemedicine (teleconsultation) services, describing them as "…a conduit of the doctor's arms and eyes…" Some of the participants in the current study who described their role as the third party were involved in stroke care, an area where the need for proximal practitioners to carry out assessments on behalf of the remote specialist has also been described elsewhere (Hervieu-Begue et al., 2013). Shah et al. (2013) outlined the function of a practitioner within their teleconsultation

service – the Certified Telemedicine Assistant – that demonstrated the importance of the proximal third party through formalisation of the role.

Pappas and Seale (2010) used conversation analysis to explore the process of teleconsultation for patients requiring cardiovascular care. The analysis identified a range of roles for nurses who were physically with patients. In addition to the set up and optimisation of technology (e.g. ensuring the camera was properly positioned), nurses played a pivotal role in the physical examination. This included answering specific requests for information and carrying out simple procedures under the guidance of the remote physician (Pappas & Seale, 2010). All of those nursing roles described within this service fit neatly within the conceptualisation of operational and clinical presence that form part of the grounded theory of nurses and teleconsultation.

Torppa et al. (2006) described a broader third party role, observing that nurses who were next to patients during teleconsultations with GPs had additional communication functions, often having to verbalise assessment findings to the doctor and act as a go-between. This required the nurse to oscillate her focus of communication between the patient and the doctor and have different levels of involvement throughout the interaction. As such, the work of Torppa and colleagues also validates the findings of this study related to the involvement of others and the mobility of participatory status (Monk & Watts, 2000) described in chapter 5.

The role of the nurse as intermediary was also described by Tachakra and Rajani (2002) in the context of teleconsultations to support emergency care. During these NP-Pr interactions, nurses were not only asked to perform physical and technical tasks in their role as third party, but they also acted as an important channel of communication. In some instances this was to compensate for technical issues (for example, poor audio

may have made it difficult for patients to hear questions), whilst in others, the nurse-as-third-party was used to 'translate' medical terminology for the benefit of the patient. One of the conclusions reached by Tachakra and Rajani (2002) was that the interactions between the nurse and patient at one end of the teleconsultation had a large bearing on its success. This supports the findings of this current study, by recognising that acting as a third party during video-mediated communication is an important and complex nursing role.

One of the constraints of teleconsultation identified in chapter 11 was an inability to provide some of the comfort and support associated with therapeutic presence. One of the participants quoted in a previous chapter articulated how she was troubled by the inability to be physically there for patients who became upset (*"I think that if someone had got upset at clinic…you couldn't comfort them…"* (TC06)). However, the same nurse also recognised the compensatory role of the third party, able to offer the necessary therapeutic presence:

"…but I suppose, at the end of the day, you've got the healthcare assistant at the other end who could show a bit of compassion." (TC06)

This suggested that the third party also acted to enhance communication (verbal and non-verbal) during the interaction, thereby compensating for any constraints to therapeutic presence. This role has been suggested previously by the work of Sävenstedt et al. (2005) that explored the role of Enrolled Nurses (ENs) who were proximal to care home residents whilst having teleconsultations with an RN. One of the core roles played by the EN in this triad was to act as an intermediary between the RN and the resident, providing additional explanation or translating instructions and requests. One of the features of the project reported by Sävenstedt and colleagues was

that the residents were all living with dementia, providing an additional barrier to communication that the presence of the EN was able to compensate for.

One of findings to emerge from the data in relation to the third party role was that it is a dynamic one that can change over time. These changes appeared to be driven largely by the building of a relationship and trust between the practitioners at different ends of the interaction. This was apparent in both categories of teleconsultation: N-P (when the RN was reliant on the third party as compensation) and NP-Pr (when the RN was acting as the third party). In N-P teleconsultations, where the compensatory role of the third party was reliant on delegation from the remote RN, the building of trust between agents appeared to be a crucial element:

"It's difficult at first, because I tend to like doing things myself and getting those results back. There is definitely a sort of, an issue of sort of trust in there that I have done. And I can't say – am I doing it [checking results] less? Probably. When I first started doing it, I would have got a set of obs and said 'can you recheck them again for me?'...that sort of thing – a lot of it was a trust issue on my part… [now] unless it's something obvious; unless I've a really good reason to say 'recheck', I will trust that those are what they are." (TC11)

Where roles were reversed and the RN was acting as the third party at the patient's bedside, the importance of trust as an antecedent to delegation was also apparent. Again, this relationship changed over time as interlocutors became more confident with each other's abilities. The previous chapter included a quote that outlined how consultants deciding remotely on a patient's suitability for stroke thrombolysis had become much more relaxed about believing the proximal nurse's findings, rather than

asking to view a repeat of the assessment themselves. This changing relationship was reinforced from another participant involved with stroke teleconsultation:

"I think as much as anything, they trust us more as well, from a consultant point of view. I think when we first started, especially the stroke leads, they were very cautious that we knew what we were doing…So I think it was their trust in us that we actually knew what we were doing and what we were saying – 'right, I score them this, this and this', they were thinking 'yeah, I know she's got it right and she's got it right the last ten times I've done it with her, so why would they get it wrong this time?'" (TC10)

The suggestion that the relationship between different practitioners in a teleconsultation is a crucial element of a successful interaction is supported by some previous literature. LeRouge et al. (2012) suggested that the relationship needed to be close and effective enough to allow the remote and proximal practitioners to collectively embody a single care provider. Mullen-Fortino et al. (2012) explored the implementation of video-mediated communication between bedside intensive care nurses and remote, specialist critical care practitioners. The study found that bedside nurses were less likely to utilise, or to follow the advice of, remote clinicians where they were not familiar with them.

Similarly, Esterle & Mathieu-Fritz (2013) described the importance of remote clinicians having confidence in the ability of those that they are delegating third party functions to. Not only does this resonate with the grounded theory of nurses and teleconsultation, but also has parallels with some of the discussion in previous chapters related to the importance of relationship-building between nurses and patients who are engaged in remote interaction.

Overall, the data from interviews and previous literature suggested that building relationships with other participants in the teleconsultation can compensate for constraints to nursing presence and can enhance the effectiveness (or at least the perceived effectiveness) of the interaction – particularly in relation to the role of the proximal third party.

The data from interviews also seemed to suggest that there were two mechanisms of relationship-building at play. Firstly, relationships may have pre-existed and teleconsultations were simply another way of communicating between people who were already familiar with each other. This was the case for a number of participants where the delivery of existing outpatient clinics or ward rounds had been changed to a video-mediated format, but the personnel remained the same. The second mechanism required the building of relationships and trust from scratch, often through repeated interactions.

Whichever mechanism of relationship-building took place, there seemed to be a clear message that the dynamics of the interaction between remote and proximal practitioners varied according to the level of trust and foreknowledge that the clinical participants had with one another. This was particularly the case in relation to the delegation of tasks to a proximal third party; this has obvious implications for practice, which are discussed in more detail within the final chapter. The impact of different relationships was encapsulated by a participant who acted as the specialist in N-P teleconsultation:

"If someone has done it before, I find it is more up to me to say 'how are you getting on?', 'what would you like me to help me with?' and to be that much more accommodating and a bit more clear in what I am asking for. Whereas if they have

never met me before, you have to start that relationship from the ground so you have
to convince them that you know what you are talking about before you can actually
start saying 'right, I need you to do this, I need you to do that." (TC03)

Workforce development

The discussion of constraints to nursing presence associated with teleconsultation identified that remoteness, technical shortcomings and a lack of physical proximity could impact on communication and the transfer of information. In terms of compensation for this constraint, participants suggested that these problems could be lessened through development of skills and experience on the part of different agents.

Some of this workforce development simply involves enhancing the hands-on skills of proximal third parties. The data from interviews suggested that the remote practitioner and the practitioner providing third party support (either or both of which could be nurses) would usually have different responsibilities and skill sets. As a general rule, it seemed that the more specialist, clinically advanced practitioner would be acting as the remote agent in a teleconsultation. The third party would either be an unregistered practitioner or an RN with less advanced clinical skills than the remote agent. This seemed to support the one of the broad operational objectives of teleconsultation as a mechanism for offering specialist support to a wider range of users:

"...specialist expertise can be given remotely as long as you have got people who can carry out whatever is being asked to be done. So you can have a very senior person remotely and a less senior person who is very skilled at the patient bedside doing the hands-on stuff..." (TC01)

By enhancing the skills of the third party, the information gathered would be more accurate and rich, and the level of trust between practitioners - discussed earlier in the chapter – would be greater:

"Again, we have trained the healthcare assistants at the other end to be able to give a patient a [blood glucose] meter with instructions, so they can do most things." (TC06)

Training in specific skills, in addition to enhancing broader communication, appeared to have a positive impact on the overall interaction. This supported a long-held belief that the greater the skills of the interlocutors in a mediated conversation, the more effective the communication is likely to be (Korzenny, 1978).

Workforce development with a more technical focus was also described by participants. This took place not only in the early stages of teleconsultation service development…

"Before we even started, we had to make sure that all the staff had been given training on the actual use of equipment. So the idea was to make them as comfortable as possible before we went live with it." (TC05)

…but was also required on an ongoing basis to raise awareness and ensure that staff remained comfortable with how to use it:

"I have shown all of them. They have either been up with me for a training session and watched me train the doctors, or they have been up and seen an actual telemed conference." (TC03)

"I have tried really hard to get everyone used to and involved with telemedicine, so that when I go in there and check the equipment, I take whoever is with me…to get used to the fact that this is a piece of everyday equipment for us to use…" (TC04)

Workforce development was also an important tool for overcoming some of the perceived constraints of teleconsultation. Some nurses who were interviewed described their own journey from scepticism to acceptance which was built upon actually becoming involved in the service:

"It was very, very strange at first. Very, very strange and I was prepared not to like it at all. I was like 'no, not going to like this.' But actually, once you get used to not physically being able to put your hand on a patient's arm or whatever, there's very little else, d'you know what I mean?" (TC11)

This example not only highlighted changing perceptions, but also the development of individual skills and mechanisms to compensate for any constraints associated with offering presence in teleconsultation (notably the lack of touch and physical proximity). The development of skills directly related to the implementation and operation of teleconsultation appeared to be important at a number of levels. For example, a practitioner with a sophisticated working knowledge of the video-mediation technology is more likely to be able to prevent, mitigate and correct any of the technical issues viewed as be constraints of teleconsultation. By providing an operational presence focused on technical issues, nurses reported being better equipped to ensure that interactions were effective from the perspective of patients and practitioners.

In some clinical areas that were accessed during the study, this enhancement of nurses' skills had culminated in the development of specific 'teleconsultation nurses' who held a role focused entirely on delivering care mediated via video:

"...we do have a team now of three nurses during the day who are telemedicine nurses...they do telemedicine all the time." (TC01)

The grounded theory highlights workforce development as an important theme throughout teleconsultation implementation. This is supported by previous literature that discusses staff training requirements in technology-based projects elsewhere. For example, a retrospective review of seven video-mediated care services in Scotland highlighted the importance of training in technical issues and in the overall approach to communicating via technology (Brebner et al., 2005).

Cronin (2013) outlined the development and implementation of a stroke thrombolysis teleconsultation service similar to that described by some participants in this study. The service was built upon a comprehensive programme of training and education, focusing on clinical and technical competence, that helped pre-empt and prevent difficulties with implementation.

Cummings et al. (2007) and Moeckli et al. (2013), in the context of critical care teleconsultation, recommended a combination of initial and ongoing training to ensure confidence in technical aspects of the service and encourage cooperation between all agents. In addition, Cummings and colleagues advocated the development of a core of 'telemedicine nurses' whose role was focused purely on video-mediated care – a suggestion supported by the findings of this study.

Some authors have reinforced the importance of workforce development by exploring the impact of insufficient staff training and education. Shah et al. (2013) carried out a qualitative study exploring the use of teleconsultation to support the acute care of older people. One of the difficulties faced by practitioners who played a part in teleconsultations (whether remote from or proximal to the patient) was a lack of training, leading to reduced confidence and effectiveness.

Temporal compensation

One of the constraints highlighted in the previous chapter is that the degree of nursing presence, and particularly therapeutic presence, was not as great during teleconsultation as it was in face-to-face, proximal interactions. Reasons for this appeared to be related to lack of touch, the awareness of a technical barrier, time lapses and unusual gaze patterns. However, the data from participants suggested that these constraints could be compensated for through interacting with patients more regularly. Though each individual consultation may be limited to some extent by a lack of proximity, the greater frequency with which this modality of care allowed for consultations to take place provided a form of 'temporal compensation' that enhanced the development of the nurse-patient relationship:

"...you can be seen more frequently and more quickly." (TC07).

A similar sentiment was articulated by participants who used teleconsultation to communicate with patients in care homes:

"I am very, very used to hands-on with patients...but I find, one of the main aspects is, from here, I can keep going back and looking at a patient every half hour, which [when I worked] out in the community, there'd be no chance I could do that at all." (TC11)

"...we can remotely see them and assess them regularly. Hourly, if we want to." (TC01)

The fact that teleconsultation was not perceived as being as rich as face-to-face interaction could be offset by the fact that the frequency of interaction was greater. Though the term 'temporal compensation' has not been used in previous work on

teleconsultation, the characteristics of the concept have been reported in previous research into nurses and technology mediated care. Pols (2010) described how the provision of remote nursing care via technology could intensify the contact between nurse and patient through increased frequency of interaction. Nilsson et al. (2010) discussed district nurses' experiences of using internet chat rooms and text messages to communicate with patients living at home with chronic disease. Though the medium of care did not have the sensory richness of face-to-face consultation, the greater frequency of interactions with patients appeared to compensate for this and facilitated a stronger nurse-patient relationship. The immediacy of access to reassurance, support and advice for patients and their families was also highlighted as a particular strength of technology-mediated nursing by Jenkins and White (2001).

The improved access to patients and the greater frequency of interaction also compensates for the constraints that teleconsultation presents in relation to knowing the patient. Though the lack of physical presence offers a barrier to knowing, Zolnierek (2014) described a temporal environment in which the degree of knowing the patient is strengthened. By spending time with patients and having sustained contact and continuity, knowing can be enhanced. Therefore, in the instances where nurses described teleconsultation as a mechanism for increasing access and frequency of contact, this will compensate for the reduced richness of interaction and thereby facilitate knowing. Given that nurses often define their role in relation to the level of availability they can offer to patients, teleconsultation supports a principle held as a central tenet of those within the profession (Sandelowski, 2002).

The discussion of the challenges posed by a lack of closeness in the previous chapter made reference to the theory outlined by Malone (2003), who described the links between physical proximity and nursing presence. Though Malone suggested that

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proximity was required to achieve presence (thereby casting doubt on the appropriateness of video-mediated nursing), another element of her theory provided a link to the concept of temporal compensation. Malone suggested that proximity was not simply a spatial phenomenon (i.e. being physically near the patient), but also had a temporal dimension. In essence, the more time a nurse spends with a patient, the greater the degree of proximity. This point was also alluded to by Oudshoorn (2009) who took the concept of proximity and applied it to the work of telemonitoring nurses caring for heart failure patients. Oudshoorn highlighted that though basing nursing care on digital information related to vital signs and symptoms did not allow for physical proximity, this could be offset to some extent by the fact the telemonitoring nurses have daily 'digital proximity'.

It can be concluded that existing literature exploring issues such as knowing and closeness related to nursing care supports the importance of temporal compensation in teleconsultation. The move from face-to-face to video-mediated interaction may constrain presence to some extent, but is compensated for through the increased regularity of contact.

Exclusion from teleconsultation

Possibly the most straightforward method of compensating for the constraints of teleconsultation described by participants (though the one with the greatest impact on implementation) was to avoid using the modality of care altogether in particular clinical situations. The perceived constraints of teleconsultation, notably related to the loss of touch and the potential for technical problems, led a number of participants to describe a very clear schema of where the limits were for its use. A number of specific examples were given by participants, often with a rationale for why a particular

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application of teleconsultation would not work. Chapter 5 included an example from participant TC03 related to not using teleconsultation in follow-up burns clinics because *"...there is no substitute for feeling a burns scar."* As a result, this participant – an advocate for teleconsultation in the context of acute burns care – did not support expansion into the provision of remote clinics.

In another example, a participant who recognised the value of teleconsultation for stroke assessment voiced dismay at the thought of expanding the service into less acute services (specifically weekend ward rounds):

"...in an emergency situation, where you need something doing quick, and you've got a time window, that's fine. But...to me, a ward round, if you're going to do it, they need to be physically there to do that ward round." (TC10)

In addition to specific examples of clinical situations that were perceived as being unsuitable for teleconsultation, two groups of activities emerged repeatedly within this subcategory of compensation. Firstly, there was a feeling from some (but by no means all) of the participants that the service should not be provided for 'new' patients that the nurse had not previously met in a traditional face-to-face manner:

Interviewee (TC05): *"...if you had a new referral, you maybe wouldn't want to see them for the very first time over videoconsultation...you'd maybe want to see them a couple of times face-to-face and then put them on a VC list. So maybe for the first consultation it wouldn't be appropriate."*

Interviewer: *"Have you got any thoughts on why you feel that way?"*

Interviewee (TC05): "You're always trying to establish a rapport and relationship and I think it's probably quite difficult to do that from videoconference. If you have those one or two face-to-face sessions, then that would help. You've introduced yourself to them, they know you a little bit, they're likely to feel a bit more at ease trying something like teleconference."

Some participants, who raised the same issues regarding first-time patients, linked this back to the previously discussed perception that you 'lose something' in a teleconsultation, in comparison to a traditional face-to-face encounter:

"You would never see a new patient, a completely new patient…the patients are already anxious about meeting somebody new and then they have also got the anxiety of the technology and they don't know how it is going to work." (TC09)

"I think it would be quite a difficult thing to do with brand new patients because…you do lose something…I think it's quite important that you've maybe built up a bit of a relationship with these people beforehand." (TC16)

The question of new patients' suitability for teleconsultation has appeared occasionally in the literature. LeRouge et al (2012), in a study of relationships within teleconsultation, identified concerns about the prospect of first-time meetings being mediated via video. As a result of concerns such as this, some clinical areas ensure, where possible, that initial contacts are made face-to-face, with subsequent appointments considered suitable for teleconsultation (Wright et al., 2001; Jenkins & White, 2001). The reason behind this may link to the literature on 'knowing' patients that has been discussed previously. If the lack of physical proximity in teleconsultation limits the ability of nurses to know their patients, then desiring pre-existing knowledge of them would seem a logical position for some nurses to take.

One important nuance of the emergence of newness as a contraindication to teleconsultation is that the nurses who raised concerns about the issue all worked in areas where there was not any particular necessity to build relationships purely via video. Nurses from other areas, such as those who supported residents in care homes or assessed patients with burns or symptoms of stroke, often had teleconsultations with patients who they had never met before. None of these nurses raised any particular concerns about first-time interactions via teleconsultation, and most felt that the modality could be extended to other areas of care where new patients would be included.

The suggestion then seems to be that the thought of seeing new patients via teleconsultation was far worse than the reality. In the same way as nurses' perceptions of teleconsultation *per se* seemed to change as they used it, so particular preconceptions about its suitability for new patients can be challenged by actually participating in interactions.

The second area where teleconsultation was viewed as inappropriate (and an area where the consensus was much broader) was in relation to the breaking of bad news. A view that breaking bad news via video would be inappropriate emerged strongly amongst participants from all clinical contexts. The reasons for this appeared to link directly to the 'softer' elements of the nurse's role in breaking bad news – i.e. therapeutic and social presence. The exchange below provided some broad reasons why this might be the case and linked back to some of the constraints described in the previous chapter:

Interviewee (TC04): *"I think there are certain things, particularly things that involve negative diagnosis. I don't think people should be given diagnosis via telemed…people shouldn't find out those earth-shattering things via telemed."*

Interviewer: *"What makes you say that?"*

Interviewee (TC04): *Because you need to touch them and they do need to make eye contact and they do need to feel like you care about them."*

Another interviewee provided an even more specific, and typically British, reason why breaking bad news via teleconsultation would seem inappropriate:

"I would be shocked if anyone was given bad news via something like that…I wouldn't be able to touch them. And what sounds the most bizarre thing is that I wouldn't be able to say 'right, there's nothing I can do about this, but shall I make a cup of tea?' Literally, practically, you wouldn't be able to do all those mundane things that we all do." (TC11)

The views on breaking bad news via teleconsultation provided an insight into the perceived dehumanisation of interactions when mediated by technology. Though most nurses were willing to accept a reduction in their level of nursing presence – notably therapeutic and social presence – for most interactions, breaking bad news was seen as a 'red line' that should not crossed. Another nurse described issues such as proximity and personalisation as the reasons behind avoiding breaking bad news via video:

"…you get a bit closer, don't you? I'd like sit there [indicates seat next to interviewer] *if I were breaking bad news. So I think you position yourself appropriately more, whereas over the telemed, I don't think it feels as personal."* (TC13)

Intuitively, this was because breaking bad news could be perceived as an intervention that often requires the judicious use of therapeutic touch, comforting hugs and (based on the testimony of participant TC11) the provision of hot, sweet tea. These are all elements that could be compensated for by the third party, but the view of those interviewed seemed to be that this was not sufficient at such a difficult moment. As a result, the only course of action available was to avoid breaking bad news in this way at all.

The literature on breaking bad news is extensive, though there is very little related directly to the use of teleconsultation. Work that does exist tends to be case study reports that suggest that it may be feasible to use teleconsultation for breaking bad news only in specific circumstances. For example, Sabesan et al. (2014) offered a case study of an effective teleconsultation in which a diagnosis of incurable cancer was broken to a patient remotely, but with a third-party, physically proximal nurse available to offer support.

Some links can be made between the concerns raised by participants in this study and the literature on telephone-mediated breaking of bad news. Dosanjh et al. (2001) outlined concerns held by doctors related to breaking bad news via the telephone, citing an inability to respond to patient and family emotions. From a patient perspective, Schofield et al. (2001) found that one-third of patients had their diagnosis of cancer told to them over the telephone, but half of those would have preferred to be given the news face-to-face. Schofield and colleagues alluded to the presence of temporal compensation in relation to this issue – though the telephone may not be the best medium, this is offset because the provision of a remote diagnosis reduces waiting times. Figg et al. (2010), after carrying out a survey of oncology patients, concluded

that despite the potential benefit of a reduced waiting time, bad news should always be delivered face-to-face, rather than via the 'impersonal' telephone.

The findings from this study and from previous literature suggest that breaking bad news via a technological medium is widely perceived as inappropriate. There is no doubt that it remains an emotive topic, the complexities of which are perhaps best demonstrated by a recent, high-profile example from outside healthcare.

In early 2014, a Malaysian Airlines plane went missing with 239 passengers on board. After a detailed and high-profile search lasting a number of weeks, the airline informed the families of those on board that it should now be assumed that their loved ones were dead. However, to try and get the message to all families at the same time (and ahead of the inevitable media announcement) the medium for breaking this bad news was SMS text message (Withnall, 2014).

The actions of the airline were, not surprisingly, roundly condemned, a response that offers a tangential link to participants' reluctance to accept teleconsultation as a modality appropriate for breaking bad news. Looking at the Malaysian messaging incident from the perspective of the grounded theory of teleconsultation suggests that in terms of operational and clinical presence, the actions of the airline were extremely successful. The purpose was to ensure that families were made aware of the bad news promptly, equitably and clearly. The text messages certainly achieved this – arguably more effectively than trying to make individual phone calls or sending representatives of the company to meet with relatives. The failing of the approach was related to perceptions of therapeutic and social presence. Using text messages left relatives with no-one to ask questions of; no-one to express their feelings to; no-one (possibly, depending on their circumstances) to give them a hug; no-one to make them a cup of

tea. The use of text messaging was effective but cold, in the same way that the lack of face-to-face presence in teleconsultation in the context of breaking bad news was described as being impersonal and uncaring.

Whatever the type of intervention excluded from teleconsultation and whatever the specific rationale given, the data from participants resonated with some of the earliest literature associated with technology-mediated communication. Short et al. (1976) hypothesised that users of communication media will recognise the degree of social presence that will be achievable and will avoid using the medium if a higher degree of presence is required. In essence, if the medium is not considered good enough, it will not be used – exactly the approach identified within this study.

Conclusion

This chapter has highlighted how nurses used a range of strategies to compensate for the constraints of teleconsultation. They utilised and exploited the presence of a third party to provide touch and support where they were not able; they enhanced their skills and those of those of others to maximise the potential of teleconsultation; they interacted with patients more often, offering temporal compensation for reductions in nursing presence.

Where these compensatory mechanisms were not effective enough to allow a sufficient degree of presence, nurses simply chose not to use teleconsultation. For those seeking to implement video-mediated services, the optimisation of compensatory mechanisms is therefore paramount, as is a recognition that nurses will only support the use of teleconsultation at the right times, in the right contexts, for the right patients.

CHAPTER 13: REFLECTIONS, IMPLICATIONS AND NEXT STEPS

The preceding chapters have outlined a substantive grounded theory, generated from interview data, which explains and explores nurses' roles within teleconsultation. The theory outlines a number of different aspects of the role, all centred on the core category of nursing presence and all subject to context-specific influencing factors: enablers, constraints and compensation.

By shedding light on this innovative approach to the provision of care, the work has implications for future development and delivery of teleconsultation services. Equally, by providing an insight into nurses' experiences and perceptions of video-mediated health care, the work also raises questions about the broader roles and responsibilities of the nurse. By doing so, the work highlights a number of areas where further research is required. This final chapter offers some reflections on the research process, discussion of study limitations, and exploration of the implications for research and practice.

Dissemination of findings

The first step in developing the findings from research is to share them with peers, opening them up to critique and debate. Even prior to the completion of this thesis, early steps in the dissemination of findings had been taken. In September 2014, a preliminary version of the grounded theory was presented to a conference focused on the implementation of technology enabled care services and the impact on healthcare professionals. The event, part of the Mainstreaming Assisted Living Technologies (MALT) project, was an opportunity to test out some of the principles within the grounded theory with experts from the field.

Given that the event was focused on barriers and drivers of adoption and acceptance, the presentation focused on the enablers and constraints that formed part of the grounded theory. Feedback on the content was positive, particularly because some of the influencing factors of nursing presence identified in the grounded theory with relation to teleconsultation (such as technical functionality, or fears regarding the place of technology in healthcare) mirrored those that the MALT project had identified in relation to telehealth adoption (Brewster et al., 2013; Taylor et al., 2015). As a follow-up, the findings of the study will be presented in June 2015 to a group of NHS professionals who are exploring the issues associated with implementing teleconsultation in practice.

Following completion of doctoral studies, the dissemination plan for the project is rooted in the development of written outputs and presentations at appropriate conferences. The first written output, initially targeting the Journal of Clinical Nursing (IF 1.233) will encapsulate the entire project, introducing the grounded theory of teleconsultation to the wider nursing audience. Secondly, the scoping literature review described in Chapter 3 will be expanded and systematised to offer a comprehensive overview of the current evidence related to the role of teleconsultation in healthcare. This will be submitted to the Journal of Telemedicine and Telecare (Impact Factor (IF) 1.736) Thirdly, a piece will be submitted to the Journal of Advanced Nursing (IF 1.685) offering a more philosophical view on the implications of the grounded theory of teleconsultation on the wider concept of nursing presence and the broader role of the nurse. Finally, a piece will be produced, again targeting the Journal of Telemedicine and Telecare, that will explore the compensatory mechanisms used by nurses to overcome some of the challenges presented by teleconsultation.

Following the publication of academic journal articles, an openly-available project summary will be written. This will provide an overview of the work, the findings and the potential implications. It will be provided to all members of the participant pool (those who were sampled and those who were not) and will be placed on the Faculty of Health and Social Care website. The availability of the summary will be publicised through existing networks and social media feeds. In addition, the full thesis will be made available through Hydra - the University of Hull's digital repository (https://hydra.hull.ac.uk/).

Conference abstracts will be submitted to two broad categories of event. From a more technological perspective, a presentation focusing on the implications of the study for adoption and acceptance of teleconsultation will target the King's Fund International Congress on Digital Health and Care. From a nursing perspective, the RCN International Nursing Research Conference will be targeted for an abstract focusing on the use of teleconsultation by nurses and the implications for the profession in a time of rapid technological development in healthcare. This presentation will also introduce the reconceptualization of nursing presence and discuss the insight it provides into the broader nursing role.

Implications for future research

Grounded theory helps researchers develop a framework, generated from data, which explains a specific phenomenon – in this case, nurses and teleconsultation. The development of a grounded theory offers new insights into this area of nursing practice and, as such, can only be viewed as a starting point for a more comprehensive programme of research. The direction, scope and approaches to that research

programme are dependent on two main elements of this current study: the limitations of the study itself and the questions raised by its findings.

Limitations of the study

By examining the limitations of the study in more detail, it is possible to identify what areas were not explored from the outset and what questions remain unanswered. By doing so, it is possible to identify which areas need exploring with different research aims, objectives, outcomes and approaches.

The use of grounded theory as a method brings with it inherent limitations. The approach is dependent on the development of theory based on data from a relatively small and narrowly defined group. As such, the generalizability of findings to broader populations is questionable (Egan, 2002). Previous chapters have outlined the steps taken throughout this study to enhance the rigour and generalizability of the resulting theory. These include a clear and transparent approach to theoretical sampling, the inclusion of primary data to support findings and an exploration of the evolution of the grounded theory (Chapter 5). Nonetheless, once a grounded theory has been developed, further steps can and should be taken, outwith the study itself, to verify, validate and refine it. This is particularly important in an area such as the use of teleconsultation by nurses, where a theory will need to evolve and adapt in response to fast-moving technological, clinical and contextual developments (Chiovitti & Piran, 2003). As a result, the grounded theory will be utilised as the starting point of a broader series of research, seeking to refine its application to nurses and teleconsultation, whilst also exploring its validity in other areas of clinical practice. The specific foci of these validation studies are explored later in the chapter, but will broadly seek to

explore whether the reconceptualization of nursing presence is a true reflection of the work of nurses regardless of context.

Aside from the broad question of generalizability linked to grounded theory studies, another potential limitation of the study was the use of theoretical sampling. Chapter 5 has described how, early in the theoretical sampling process, a decision was taken to exclude nurses with no experience of using teleconsultation. As a result, all the nurses involved in the study had utilised technology as part of their care delivery, to one extent or another. By selecting those who had adopted such technologies, it could therefore be argued that the sample was inherently biased towards its use. There are two counter arguments to this. Firstly, using a technology does not necessarily mean that one is a fan of it. Indeed, many of the participants described past or present feelings of antipathy towards teleconsultation, suggesting that no such positive bias existed. More importantly, the grounded theory does not in any way place a value judgement on the use of teleconsultation. It seeks simply to explain nurses' use of teleconsultation – not conclude whether they like it or not, or whether it is an effective modality of patient care. It is true that a nurse with a more favourable view of teleconsultation may accentuate the positive (the enablers) and downplay the constraints. However, the data from these 'teleconsultation champions' still support the suggestion that the influencing factors outlined in the grounded theory are extant.

Plans for future research

The scope of the study, described and justified in chapter 2, could also be viewed as a limitation. The decision to focus only on the roles of nurses in teleconsultation results in the perceptions of other important agents, such as patients, carers and other practitioners, to be overlooked. As the recipients of care and support through

teleconsultation, patients and carers are arguably the priority for further study that builds an understanding of their experiences and perceptions.

Though exploring the experiences and perceptions of patients in relation to teleconsultation was outside the scope of this study, some insight on 'perceived perceptions' was gathered from the nurses interviewed. Some descriptions of patient experience were extremely positive…

"Patients love it." (TC01)

…whereas other respondents reported that some patients were more sceptical and resistant:

"Some [patients] just don't like the thought of being in front of a video screen." (TC06)

There were also some interesting statements regarding more nuanced aspects of user and carer acceptance…

"...sometimes we get family members that don't want it anymore because they think that we are stopping admitting their fathers, mothers because of it – and the patients actually say 'no, I want it.'" (TC01)

…or the way that patients perceived teleconsultation as a viable alternative to face-to-face interaction:

"And also, I think it makes people feel they've been reviewed after they've seen your face, but not necessarily after a phone call. So they accept that this is a proper appointment, but they might not think that a phone call necessarily is." (TC16)

There has been previous work exploring the experience of patients involved with teleconsultation. Harvey et al. (2010) described patients' responses to the use of teleconsultation to interact with GPs in rural Scotland. Many of the comments mirrored those of nurses in this current study. For example, patients were positive about the convenience and accessibility associated with teleconsultation, but reported unhappiness with technical problems occurring. They also alluded to the concept of therapeutic presence in these NP-Pr teleconsultations, by describing the proximal nurse as being reassuring. Similar feedback on improved accessibility to care, coupled with a general perception that they would rather be seen face-to-face, has also been reported by patients in the context of haemodialysis teleconsultation (Whitten & Buis, 2008). Whilst popular with young women in the context of sexual health, technical issues were also identified by Mabragaña & Carballo-Diéguez (2013) as a problem experienced by users of the service.

One of the clinical contexts well-represented in the current study was the assessment and care of people with acute stroke. One recently published study has focused on the patient and carer perceptions of teleconsultation in this context (Gibson et al., 2015). As with studies from other areas of practice, patient and carers suggested that the use of teleconsultation was well-received. There were some findings that resonated very closely with the grounded theory, such as descriptions of teleconsultation feeling as if the remote practitioner was 'in the room'. Once again though, some feedback suggested that there may be certain groups or situations (such as with older people, who may be less comfortable with video-mediated communication) where teleconsultation would not be appropriate (Gibson et al., 2015).

In a qualitative study of teleconsultation in the context of palliative care, Johnston et al. (2011) used focus groups to explore the views of patients with life limiting diseases

and their carers. Though some patients identified a preference for face-to-face care over "talking into a machine" (Johnston et al., 2011:158), there were findings of particular interest in relation to breaking bad news via teleconsultation. Unlike the findings that emerged from this current study, the patients with palliative care needs suggested that in some contexts, having bad news broken remotely might be beneficial, allowing them to be in their own home, with their loved ones around them, and avoiding the need to travel when unwell or upset (Johnston et al., 2011). The benefits felt by patients from having family with them during teleconsultation was also identified by Seaven et al. (2008) in interviews with service users in Northern Canada. In addition, this study of patients using video-mediated communication to enhance LTC management identified benefits associated with reduced travel and increased accessibility.

This previous literature suggests that nurses' perceptions of patients' and carers' views on teleconsultation in this study may be broadly accurate. However, most studies of patient and carer perceptions have focused purely on one service for a defined group of patients, rather than a more generalizable overview of experiences and perceptions.

As a result, the proposed follow-on study to supplement the findings of this work is to explore the views and experiences of patients across a range of teleconsultation applications within acute and long-term care settings. In essence, this follow-up study will mirror the methods described here (grounded theory based on data collection through semi-structured interviews), but with the focus on patients and, where appropriate, carers. The proposed work will also incorporate some ethnographic and observational elements not evident in the current study. This work will seek to develop a theory of patient and carers' use of teleconsultation that will supplement the grounded theory of the nurse's role.

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Further research is also required on the effectiveness and appropriateness of teleconsultation in specific patient groups. One of the compensatory mechanisms identified in this study was nurses ensuring that certain clinical situations were not addressed via teleconsultation. However, there was no consensus on exactly where the boundaries of teleconsultation as a modality of care ended. For example, there was some disagreement about the appropriateness of interacting with patients for the first time via video. Those nurses who saw new patients through video-mediated interaction as part of their current role seemed comfortable with the concept, whereas those who did not were more sceptical. Further work is therefore required to explore the use of teleconsultation for initial patient meetings, where it is and is not appropriate, and how constraints can be mitigated.

There was broad agreement amongst participants that video was not an appropriate medium for breaking bad news. However, as teleconsultation becomes more widespread in healthcare, the situations in which this may occur, even if it was not the primary reason for an interaction, are likely to become more commonplace. As the work of Johnston et al. (2011) highlighted, the issue may not be as clear cut as this study suggests and some patients may benefit from being at home when bad news is broken. Further work is therefore required to understand the nuances of breaking bad news during teleconsultation and identifying what (if any) contexts it might be appropriate or even beneficial.

The other area of study prompted by this grounded theory is an exploration of whether the findings are applicable to nursing care outside of the context of teleconsultation. Literature that has previously discussed the role of nurses in teleconsultation has tended to accept existing definitions and conceptualisations of nursing presence and then attempt to apply them to the context of video-mediated care. This study has taken

the polar opposite approach: through grounded theory, data from interviews have generated a new framework of nursing presence. Though conceived in the context of teleconsultation, another stage of its development will be to explore its validity in other contexts of care.

The core category of nursing presence and the subcategories of operational, clinical, therapeutic and social presence were generated from data related to teleconsultation. However, the descriptions from participants of their interactions with patients face-to-face or via the telephone suggested that the role can be conceptualised in the same way regardless of the medium of care. It is only the degree to which different elements of presence can be reached, influenced by enablers, constraints and compensation, which is context and medium dependent.

The conceptualisations of nursing presence and its subcategories within the grounded theory therefore require exploration in different clinical contexts, with different modalities of care and different groups of nurses. Doing so will help ascertain whether the reconceptualization of nursing presence is accurate and whether it is applicable across the nursing community.

The nuances of the grounded theory also need exploration. Greater clarity is required on exactly where (if at all) there is overlap between different subcategories of presence. The theory in its current form, based on the data from this study, conceptualises the relationship between presence subcategories as a 'chain', with overlap between operational/clinical, clinical/therapeutic and therapeutic/social. However, in a broader context and with further study, these relationships may become more complex. For example, there may be some element of overlap between

therapeutic and operational presence which did not become apparent from the data in this study.

There also needs to be focused study on whether attempting to provide one subcategory of presence can impact adversely on other types – essentially, further study is required on the interrelatedness and interconnectedness of different subcategories of nursing presence.

For example, if a nurse organised the transfer of a patient to another ward in the middle of the night to free up a bed for another admission, they are arguably providing substantial operational presence: they are carrying out a task that may promote the most effective use of resources and facilitate the achievement of organisational targets. However, the level of therapeutic presence provided to the patient who is moved in the early hours of the morning is adversely affected. In an example such as this, where should the nurse's priority lie? Is it better for one patient to be inconvenienced to make room for another, or should the nurse refuse to transfer her patient because it does not fit with the principles of therapeutic presence? Role tensions such as these have been discussed before. For example, the work (discussed in more detail earlier) of Allen (2004) highlighted the conflict that can occur between an expectation of nursing being based around provision of holistic care and a reality of the role being multi-skilled and often focused on delivering organisational objectives. Future research is required to ascertain whether similar role tensions exist between the four subcategories of nursing presence, and explore how they are managed by nurses.

At a more granular level, there is also some further research required on the temporal relationships between different subcategories of nursing presence during individual nurse-patient interactions. Though this study has identified the subcategories that exist

during interactions, the work was not designed to explore when different types of presence will be most prominent. For example, in a clinic appointment, does the nurse start with elements of social presence to 'break the ice' before adopting a more clinical presence? Once the broad framework of nursing presence is accepted, there needs to be a more detailed examination of the nuances and relationships contained therein. A degree of observational and ethnographic work is therefore required to supplement and expand existing knowledge of the mechanisms of video-mediated communication in healthcare. In particular, more work is required using conversation analysis approaches to understand the detailed interactions between nurse, patient and other agents.

From a research perspective then, this study provides a springboard for two broad streams of subsequent work. It prompts questions related to the use of teleconsultation as a modality of care – how it should best be used; how patients perceive it; where the limits lie. More ambitiously, the work opens up the potential for further study of nursing in general. Nursing presence, its subcategories and its contextual influencers, may be applicable generally, providing a framework for understanding the role of nurses across clinical contexts. By reconceptualising nursing presence, the study offers a new perspective on nurses, their role, their place in practice, and the care they provide.

The implications for practice

The implications of this study for practice are manifold. The findings highlight a number of practical considerations in relation to the development, planning and implementation of teleconsultation services in the future.

The specific enablers, constraints and compensatory mechanisms associated with video-mediated interaction influence the likelihood of teleconsultation being successfully implemented and adopted by nurses. This is not an entirely new finding – there has been recognition for some time that clinician acceptance is key to the successful implementation of telehealth services (Wade et al., 2010).

Established models of technology adoption also highlight how the attitudes, perceptions and experiences of potential adoptees is crucial to the success of an intervention. At the broadest level, Rogers' 'Diffusion of Innovation' describes factors linked to adoption, including usability and relative advantage (i.e. how useful the new innovation is compared to normal practice) (Rogers, 2003). Similar concepts can be found in those models that focus specifically on the adoption of new technologies. These technology-focused models include the Technology Acceptance Model (TAM) (Davis et al., 1989), which has, in turn, been honed to focus more specifically on the implementation of video-mediated communication by nurses, in the shape of the 'Telemedicine TAM' (Kowitlawakul, 2011). In each of these two models, key antecedents of adoption include perceived usefulness (PU) and perceived ease of use (PEOU). The grounded theory suggests direct applicability to the TAM, with the specific constraints and enablers impacting on the PU and PEOU of teleconsultation.

The nurses interviewed within this study described (albeit implicitly) a range of perceptions that linked directly to the concepts of PU and PEOU. Most of these discussions have been explored in previous chapters, but the implications for practice can be seen most clearly in those responses where the nurses drew direct links between the influencing factors and the process of implementation. In some cases, a judgement appeared to have been made by nurses about the balances of risk and benefit, or enablers and constraints, when deciding on the overall merits of teleconsultation:

"So I think people's perceptions, the training issues and the size of it are the main drawbacks, but I think from my point of view, I still think the benefits outweigh all of these." (TC03)

Placing this statement into the context of the Telemedicine TAM, the participant stated that the PU outweighs any perceived difficulties with the PEOU. These problems with PEOU were most clearly seen in relation to the technological constraints described by some of the participants, which serve as a substantial barrier to the personal acceptance or organisational adoption of teleconsultation:

"*I think even the smallest problems are enough to act as really powerful barriers for people.*" (TC04)

In this quote, a low PEOU is described as providing a barrier that potentially reduces acceptance. In practical terms, the results of this study suggest that complex or unreliable technology is unlikely to be adopted. Though this statement is rather trite, it is also important. Those responsible for implementing teleconsultation services need to understand the importance of reliability and ease-of-use, particularly at the start of any new development.

The findings of this study suggest that failing to ensure reliability and high levels of functionality will increase levels of resistance amongst nursing staff. Resistance to change has been previously documented amongst nurses when technology is being introduced to clinical practice. Though many of the examples are of interventions other than teleconsultation, there are striking parallels to be drawn with some of the findings from this study. For example, Timmons (2003) explored nurses' resistance to the introduction of computerised care planning systems within the UK. Though there was evidence of 'technophobia' underpinning an unwillingness to engage by some nurses,

other factors were also apparent. These included issues with reliability, sub-optimal performance and the time consuming nature of using technology (Timmons, 2003) – all issues raised by participants in this study.

Hibbert et al. (2004) reinforced the importance of reliable and simple technology by highlighting nurses' reservations about using teleconsultation due to technological issues such as poor picture and speech delays. These problems caused resistance towards new services and provided a barrier to 'normal' nurse-patient interactions. Taylor et al. (2015), focusing on the use of telehealth by community nurses, found, for example, that early problems with the introduction of new services could have long-lasting implications for staff acceptance. They also identified that nurses' concerns about the effect of telehealth on their role and their ability to use new technologies, could act as powerful barriers to acceptance (Taylor et al., 2015).

The discussion of constraints in chapter 11 identified that the impact of technical problems changes over time. The nurse who had described colleagues' reactions to early technical issues as *"oh –this is hopeless; can't use this"* (TC05) suggested that similar problems still occurred but *"no-one ever mentions it now"*. Other respondents described similar processes of teleconsultation becoming more embedded in practice over time, reducing the impact of technical issues. There appeared to two processes at play here. In the terminology of the grounded theory, there appeared to be a process of compensation taking place to mitigate the constraints of the modality of care. Nurses got better at preventing and fixing any problems over time. Secondly, where the same type and scale of problems occurred later on in the development of the service, they appeared to have less of an impact on PEOU and likelihood of acceptance by nursing staff. The exaggerated impact of these technical 'teething' troubles has been reported previously (Gerrard et al., 1999). Linking to existing theories of

technology adoption, the reduced impact of technical problems suggest that teleconsultation becomes *normalised* over time.

The process of normalisation has been previously recognised as an important element of any implementation of new services. As teleconsultation could be regarded as a complex intervention, it can be linked to the normalization process model (NPM) described by May (2006). This provides a model against which complex interventions can be tested. The NPM has four constructs;

- Interactional workability: the impact of a complex intervention on encounters between those using it (e.g. nurses and patients; nurses and other healthcare professionals)

- Relational integration: how interventions can alter the knowledge and practices that underpin clinical encounters

- Skill-set workability: the agreed distribution of work, role boundaries and performance monitoring associated with a complex intervention in healthcare

- Contextual integration: the ease with which a complex intervention fits with organisational processes such as resourcing, risk management and service evaluation

Though applicable to any development, May (2006) used teleconsultation projects as exemplars, arguing that to become normalised, a complex intervention must fit within current services and processes rather than disrupting them; it must enable interaction rather than act as barrier. The NPM has subsequently been applied to the implementation of teleconsultation. For example, Mair et al. (2008) found that the NPM was able to explain factors (including technical and professional) that inhibited

the normalisation of a teleconsultation and telemonitoring service for people with COPD.

Some of the nurses involved in this current study described how teleconsultation had become 'embedded' or 'normal' over time. In some cases, this normalisation manifested as a desire to identify new areas into which teleconsultation could be implemented:

"...most of the outpatient clinics are very much sitting, talking, discussing and consulting...My view would be that most of the things we do at outpatients could be done by remote consultation..." (TC01)

Other participants outlined specific methods for supporting this normalisation process, including workforce development and awareness building, including trying to portray the 'everydayness' of teleconsultation:

"...when I go in there and check the equipment, I take whoever is available with me...to get them used to the fact that this is a piece of equipment that is an everyday piece of equipment for us to use..." (TC04)

Normalising teleconsultation also requires the support and buy-in of nurses. The grounded theory highlights how workforce development is an important compensatory mechanism that can reduce anxiety and increase confidence in new ways of working. Training and education must therefore be weaved throughout any project development and must focus not just on the 'how' but also the 'why' of teleconsultation, demonstrating to nurses the potential benefits that a change in practice can bring. By doing so, teleconsultation services can achieve the levels of contextual integration and skill-set workability described as key elements of normalisation by May (2006).

The challenges faced when attempting to normalise teleconsultation will be context-specific and will often depend largely on whether the new service is a replacement for a different form of interaction. For example, if teleconsultation is introduced as an alternative to face-to-face care, then the findings of this study suggest that nurses may perceive this as being a less effective form of interaction than the previous situation. This is likely to lead to some resistance that will need mitigating by managers highlighting the potential benefits – e.g. a less rich communication medium but with the pay-off of improved access and increased frequency of contact (the temporal compensation discussed in chapter 12). Conversely, where teleconsultation is being introduced as a 'step-up' from telephone interactions, then nurses are likely to see the benefits associated with a move towards a communication medium with a greater level of sensory richness. As a result, resistance is likely to lessen and the barriers to implementation will be easier to overcome.

Where barriers do exist, those responsible for implementing and operating teleconsultation services, whether they be senior nurses or other healthcare professionals, need to be cognisant of how to overcome them. The grounded theory identifies a range of compensatory mechanisms that can be put in place to mitigate the constraints of teleconsultation and aid implementation.

Arguably the most important of these is to empower frontline nurses to use their clinical skills and judgement to identify where the use of teleconsultation is feasible and appropriate. This study has identified that nurses have the capability to draw very clear lines of demarcation between those clinical activities where video is an appropriate medium and those where physical face-to-face interaction is necessary. Managers should respect these boundaries, whilst also empowering nurses to explore

the potential for other compensatory mechanisms, such as the use of third parties to provide physical proximity, which may broaden the scope of teleconsultation.

Conclusion

The grounded theory outlined within this thesis has a number of implications in relation to further research and to the implementation of teleconsultation. For the former, the priority is to repeat the methodology described in this thesis to explore the perceptions and experiences of patients and carers. By doing so, a holistic picture can be built of teleconsultation from key agents within the interaction. By examining the experience of patients, it will also be possible to shine a light on some of the questions left unanswered in this study, such as the acceptability of breaking bad news via video.

More broadly, work is required to identify whether the framework of the grounded theory of teleconsultation is applicable to nursing in general. Within this thesis, findings have been discussed in the context of previous literature from nursing academia, notably in relation to nursing presence. Further research is required to validate the reconceptualization of presence and provide more detail on the interrelationship and interdependencies of the subcategories identified.

For practice, this study offers an insight into the real-world enablers and constraints that nurses must face when developing and delivering teleconsultation services. By doing so, the findings build on established theories of technology implementation, offering managers and clinicians guidance on challenges and solutions. The study reinforces the importance of reliable, effective, simple technology; the need to ensure that staff understand and see the benefits of the service; the role of training and development in building the confidence and skills of nurses.

Teleconsultation is an innovative, expanding and exciting approach to the delivery of healthcare. For nurses, it offers the chance to not only do things differently, but to do different things. This thesis goes some way to explaining how nurses are using teleconsultation to enhance care, but it is only a stopping off point in a longer journey towards understanding how best to use technology for the benefit of patients.

APPENDIX A: REFERENCES

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APPENDIX B: STUDY INFORMATION SHEET

UNIVERSITY OF **Hull**
Faculty of Health and Social Care

Study Participant Information Sheet

Nurses' experiences of teleconsultation

Participant information leaflet
We are inviting you to take part in our research study. Before you make a decision, you should understand why the research is being done and what it would involve for you. If – after reading this information – you are interested in taking part, then the contact details of the lead researcher can be found on page 3 of this information sheet.

Background
Teleconsultation – the use of video technology to support healthcare – is an innovative way of enhancing the care provided to patients. Nurses across the UK are using teleconsultation to support care in a number of contexts, such as prison healthcare, stroke assessment and burns care.

Though the use of teleconsultation is becoming more widespread, the impact on nurses of using video to communicate with patients, carers and other practitioners is not well understood.

What is the purpose of the study?
We would like to talk to nurses who have experience of using (and/or views on using) teleconsultation within their own practice.

The research – which is part of the lead researcher's PhD studies - is seeking to explore the impact of teleconsultation on issues such as nurses' relationship with patients and their ability to carry out a comprehensive clinical assessment.

The main output of the study will be a theory that explores and explains the main issues related to nurses' use of teleconsultation. In practical terms, this will help nurses understand how using teleconsultation will affect their role, what training and development they might need and how best to develop new services.

Why have I been invited?
You have been invited to participate in this study because you have expressed a broad interest and have experience of, or views on, the use of teleconsultation by nurses.

Do I have to take part?
It is up to you whether or not you wish to join our study. If you are interested in taking part, then once you contact the lead researcher, they will contact you by phone or email to answer any questions and then – if you are still interested – will place you on a list of potential participants. If you are selected to be interviewed, then you will be sent a consent form to sign and return. You are free to withdraw at any time, without giving a reason.

What will happen to me if I take part?
Once we have recruited a number of people willing to participate in the study, then we will select approximately 15-20 nurses to interview about their experiences. The reason for deliberately selecting people is to ensure that we have a range of different people (e.g. different lengths of time since qualification; different genders) and experiences (e.g. people who have used teleconsultation for different clinical reasons).

This means that if you consent to take part, then you may not be interviewed at all. However, the researcher will contact you and let you know if this is going to be the case. You will also be sent a summary of the final project report for your information.

If you are chosen to be interviewed, then the researcher will either come to where you work or contact you via the telephone (whichever is most convenient for you). The researcher will then talk to you for about 30 minutes about your experience of, and/or thoughts on, the use of teleconsultation. The interview will be recorded so that the researcher can play back the interview afterwards and write down what was said. This will allow us to analyse what has been said to try and understand better the experience of using teleconsultation. Before and after the recording takes place, the researcher may also jot down any comments that you make – however, they will ask your permission before doing this.

Confidentiality
All results from the research are kept confidential, so that only members of the research team have access to your personal information. This will be used for contact purposes only. The recordings of our interview - and the written copies of what has been said – will be kept in a secure place within the University of Hull or on password protected, University-owned computers. Any information

that is used or published will be completely anonymous, and cannot be traced back to you.

What are the possible disadvantages and risks of taking part?
The only thing that you should be aware of is that if – during the interview – the researcher judges that you are about to disclose any examples of unsafe practice that have not been resolved or reported appropriately, then the researcher may suggest stopping the interview.

What are the possible benefits of taking part?
We cannot promise the study will help you, but the information we get from this study will help us better understand nurses' experience of using teleconsultation. You may also find that talking about your experience of using teleconsultation provides you with the opportunity to reflect on practice.

What will happen if I choose to withdraw my consent?
If you choose to withdraw your consent before the interview has taken place, then we will simply take your details off the list of consenting participants, and you will not be contacted again about the research.

If you choose to withdraw at any point *after* the interview has been carried out, then all recordings and written transcripts of your interview will be destroyed.

What if there is a problem:
If you have concerns about any aspect of the study, you should speak with the lead researcher **(David Barrett: 01482 464683)** who will do his best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the Head of Department for Health Professional Studies, Anji Gardiner (a.b.gardiner@hull.ac.uk).

Confidentiality
All information which is collected about you during the course of the research will be kept strictly confidential. Any publications related to the study may have some interview quotes included. However, these will be completely anonymous, so there will be no way in which you can be identified from them.

Who is organising and funding the study?
This study is being supported and supervised by the Faculty of Health and Social Care at the University of Hull. The study is unfunded, but is being carried out as part of the lead researcher's PhD project.

Who has reviewed the study?
The study has been considered and approved by the Faculty of Health and Social Care Ethics Committee at the University of Hull.

Further information and contact details
If you would like further information about this study, please contact;

David Barrett
Nurse Lecturer in Telehealth
University of Hull
Cottingham Road
Hull
HU6 7RX

01482 464683
d.i.barrett@hull.ac.uk

APPENDIX C: STUDY CONSENT FORM

UNIVERSITY OF Hull
Faculty of Health and Social Care

Study Number:

Participant Identification Number for this study:

CONSENT FORM

Title of Project: Nurses' experiences of teleconsultation

Name of researcher: David Barrett

Please initial box

1. I confirm that I have read and understood the information sheet dated 9th July 2013 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I understand that if I divulge any instances of unsafe or negligent practice, that the lead researcher will be required to ensure that these have been reported appropriately.

4. I understand that interviews will be audio-recorded and that anonymous direct quotes may be used in subsequent publications

5. I agree to take part in the above study

_____   _____   _____

Name of Participant   Date   Signature

_____   _____   _____

Name of Lead Researcher   Date   Signature

APPENDIX D: INITIAL INTERVIEW SCHEDULE

Nurses' experiences of teleconsultation

Interview schedule – Version 1.0 (May 2013)

Introduction;
- Introduce background and current role of researcher
- Describe broad aims and objectives of study
- Ensure that participant remains happy to have interview recorded and transcribed
- Ensure that participant agrees that memos can be written in relation to any comments of interest made before or after recording is taking place

Laddered questioning;

Note: These are just intitial prompts. Emerging areas should be explored and noted down to inform further development of the interview schedule

Stage 1 – questions about actions;

- Ask participant to describe how they use teleconsultation within their area of practice
- Ask for examples of situations that they have dealt with using teleconsultation

Stage 2 – questions about knowledge

- Ask participant for their knowledge of other areas where teleconsultation is used
- Ask for any feedback that they have recieved from patients, carers and other practitioners in relation to teleconsulation

Stage 3 – questions about feelings, values and beliefs

- Ask participant about their general feelings regarding the use of teleconsultation
- Explore any beliefs related to the impact of teleconsultation on the nurse-patient (or multidisciplinary) relationships
- Explore any thoughts related to the impact that teleconsultation may have on the role of nurses
- Explore issues related to technical quality of consultations

Finish interview with an open question regarding any other issues that they wish to discuss regarding current or future use of teleconsultation.

Finish with thanks to the participant and a promise to send a summary of the final thesis in 2015.

APPENDIX E: PARTICIPANT SUMMARY

Number	Role	Teleconsultation experience	Clinical area
TC01	Nurse manager	Some management oversight and clinical involvement with N-P teleconsultation	Acute care
TC02	Teleconsultation nurse	Specialist clinical role involving N-P teleconsultation	Acute care
TC03	Clinical nurse specialist	Managerial and clinical role related to N-P teleconsultation	Burns care
TC04	Staff Nurse	Clinical experience as proximal nurse within NP-PR teleconsultation	Emergency department
TC05	Charge Nurse	Managerial and clinical experience as proximal nurse during NP-Pr teleconsultation	Renal medicine
TC06	Clinical Nurse Specialist	Runs clinics through N-P teleconsultation	Diabetes
TC07	Clinical Nurse Specialist	Clinical experience of NP-Pr teleconsultation	Oncology
TC08	Staff Nurse	Some experience of education via teleconsultation. Extensive use of telephone interaction with patients	Gastroenterology
TC09	Clinical Nurse Specialist	Clinical involvement as proximal nurse during NP-Pr teleconsultation	Oncology
TC10	Charge Nurse	Clinical involvement as proximal nurse during NP-Pr teleconsultation	Stroke care
TC11	Teleconsultation nurse	Specialist clinical role involving N-P teleconsultation	Acute care
TC12	Teleconsultation nurse	Specialist clinical role involving N-P teleconsultation	Acute care
TC13	Project support nurse	Project management and clinical experience associated with N-P teleconsultation	Acute care
TC14	Staff Nurse	Clinical involvement as proximal nurse during NP-Pr teleconsultation	Stroke care
TC15	Clinical Nurse Specialist	Clinical involvement as proximal nurse during NP-Pr teleconsultation	Stroke care
TC16	Clinical Nurse Specialist	Runs clinics through N-P teleconsultation	Diabetes
TC17	Senior critical care nurse	Involvement with implementation of teleconsultation in intensive care setting	Critical care

APPENDIX F: ETHICS COMMITTEE DECISION LETTER

UNIVERSITY OF Hull

Mr D Barrett
Faculty of Health and Social Care
University of Hull
HU6 7RX

**FACULTY OF HEALTH
AND SOCIAL CARE**
T: 01482 464530
E: j.kelly @hull.ac.uk

Our REF 108

28 June 2013

Dear David

The use of teleconsultation by nurses

Thank you for submitting the above proposal to the Faculty of Health and Social Care Research Ethics Committee, which was considered on 24 June 2013.

Overall, this was an excellent proposal and exemplary in parts with just a few ethical issues to be addressed, which are as follows: (excuse the list)

1) The committee were not convinced that it needs to go through NHS REC as it only involves staff not patients. Please check the specific requirements for this on the NHS REC website as it may save you significant time! Our ethical approval maybe sufficient.

2) PIS, needs to state early that this is a PhD study

3) A23 if poor practice is revealed you need to say supervisors will be involved in decisions about appropriate action.

4) A27-1 how will information be circulated, email, how will potential participants be contacted, says twitter/website later in form but needs clarification here

5) A29 better to ask participants to contact PI

6) Where will face-face interviews happen

7) Will managers be informed of the study. This is good manners if nothing else

8) how will you decide who to interview and how will explain to those who are not chosen

9) A71 is it really single centre?

10) Consent form, seems a bit perplexing to ask for consent and then decide who's going to participate. needs to be other way round

11) Consent form – need to add clause about audio-taping and using direct quotes.

The Committee hopes that you will not find these issues too onerous to address. Once you have done so satisfactorily (by return email to me) then I will be in a position to grant Chair's approval.

Yours sincerely

Dr Janet Kelly
Chair, Research Ethics Committee

cc: file

APPENDIX G: ETHICS COMMITTEE APPROVAL LETTER

UNIVERSITY OF Hull

Mr D Barrett
Faculty of Health and Social Care
University of Hull
HU6 7RX

**FACULTY OF HEALTH
AND SOCIAL CARE**
T: 01482 464530
E: j.kelly @hull.ac.uk

Our REF 108

16 July 2013

Dear David

The use of teleconsultation by nurses

Thank you for submitting the above proposal to the Faculty of Health and Social Care Research Ethics Committee, which was considered on 24 June 2013.

Following your comprehensive and prompt response to the points raised, I am delighted to give you Chair's approval as permitted under the Terms of Reference of the Committee.

Yours sincerely

Dr Janet Kelly
Chair, Research Ethics Committee

cc: file

APPENDIX H: EXAMPLE OF OPEN CODING PROCESS

The section below is a transcript from the interview with participant TC03. The screen shot demonstrates the line-by-line analysis that took place as part of the open coding stage. The 'review' functionality of Microsoft Word was used to annotate the transcript with codes that served as the starting point in the development of the grounded theory.