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# Trust Me, I'm a Doctor:
# Understanding Clinician's Experiences of Service Separation and Trust Formation in Telehealth

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**Abstract**

This thesis reveals how health care clinicians experience service separation; and, how they perceive they can establish trust in the context of telehealth. Telehealth encompasses technologies such as video conferencing, store-and-forward email and robotic telepresence surgery used to provide health care at a distance. In Australia, telehealth uptake remains sluggish despite its benefits, particularly for rural and remote patients. However, if provider uptake is slow, how will customer demand for telehealth be met? Thus, the thesis aimed to advance knowledge in the applied telehealth context, foregrounding the providers' experience with separated services. Telehealth is a type of service separation. Service separation occurs when providers are not physically or temporally co-located in the same spatial or temporal dimension as their patient. Service separation is enabled by technology infusion, such as using video conferencing or robotic telepresence surgery to interact at an arm's length distance. Taking the service provider's perspective as the point of departure, I employed a practice-based approach as a theoretical lens to explore two research questions. The first research question elucidated how providers experience service separation in terms of specific clinical activities performed via telehealth. The second research question identified providers' perceptions of how they perceive they establish trust with patients via telehealth. Couched within an interpretivistic research paradigm, two complimentary methods - phenomenography and ethnographic observation - facilitated the data analysis. Data collection comprised qualitative empirical material comprised 33 in-depth phenomenographic interviews with clinicians spanning 19 fields and ethnographic observations of eight telehealth clinics.

The findings for question one indicated that providers experience service separation in four qualitatively distinct ways. These alternative understandings reflect what service separation means to providers; and, how they experience it based on their lived experiences as telehealth clinicians. The four understandings characterised service separation as: (a) *depersonalised*; and, (b) *clinically voyeuristic*; requiring (c) *negotiating intangibility*, (d) and *managing one's identity versus role* as clinical versus technical when delivering telehealth. The findings for question two highlighted the salience of trust for providers delivering separated services. This insight served as a contextual theme acknowledging the potential challenges faced by providers tasked with building trust via telehealth. Six different trust building practices were identified indicating that: (a) *leveraging face-to-face meeting opportunities*; (b) *transferring trust via third-parties*; (c) *conveying competence*; (d) *normalising telehealth*; (e) *establishing connections and reading emotions*; and providing (f)

*continuity of care* were used by providers to overcome their potentially depersonalised, clinically voyeuristic, intangible and identity versus role laden experiences of service separation. Deepening these findings were five telehealth activities, identified through the practice-based theoretical lens implemented during data analysis. These activities were data-grounded, highlighting what providers 'do' when delivering telehealth. This involved: (a) *assessing suitability and conducting preparation work*; (b) *establishing relationships*; (c) *vicarious examination*; (d) *making (differential) diagnoses*; and, (e) *on-referring, re-appointing or closing patient cases*.

This thesis contributes to the service separation and trust literatures in virtual contexts. First, by focussing on how providers understand service separation, I provide the first call to conceptualise service separation from the providers' perspective and highlight its multifaceted nature through the emergence of four understandings. This is an important contribution because integrating the provider's voice alongside the customer's in service separation research honours co-created service delivery as a double-sided process. Moreover, an enhanced characterisation includes acknowledging that there is not necessarily a singular experience of service separation but rather providers may relate to it in several different ways. Second, by highlighting six specific trust building strategies I extend knowledge of how providers perceive that they can establish trust via separated services. This is important because the onus for establishing trust is on providers/trustees; yet, the literature overwhelmingly privileges the customer's/trustor's view on trust formation. This elevates knowledge beyond *whether* trust formed as per existing service research couched from the customer's perspective to appreciate *how* providers delivering separated services perceive trust can be established and its differences when virtual. Practical implications are for providers tasked with virtual service delivery via technology infusion to better understand their own experiences and what service separation means for themselves and their professional practice. Knowing the specific trust practices which emerged in this telehealth context paves a way forward to explore how the trust building practices can be leveraged to strategically build trust in a more considered manner; contrasted against existing understandings of trust as a more organic, innate process unique to individuals. Appreciating the challenges to service delivery and trust building which can be imposed on providers as a result of service separation may enhance understanding of potential mechanisms hindering Australia's uptake of telehealth.

**Declaration by author**

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

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## Publications during candidature

Peer-reviewed papers

Green, T., Hartley, N., & Gillespie, N. Service Provider's Experiences of Service Separation: The Case of Telehealth. *Journal of Service Research,* 19(4), 477-494.

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| Contributor | Statement of contribution |
|---|---|
| Teegan Green (Candidate) | Research design (80%)<br>Wrote and copy-edited the paper (70%)<br><br>Data collection and transcription (100%)<br>Data analysis (90%)<br>Interpret and communicate results (80%) |
| Dr Nicole Hartley | Research design guidance (10%)<br>Co-wrote and copy-edited the paper (20%)<br>Data analysis – interpretation checks (5%)<br>Interpret and communicate results (10%) |
| Associate Professor Nicole Gillespie | Research design guidance (10%)<br>Co-wrote and copy-edited the paper (10%)<br>Data analysis – interpretation checks (5%)<br>Interpret and communicate results (10%) |

## Contributions by others to the thesis

Dr Nicole Hartley and Associate Professor Nicole Gillespie of the UQ Business School, and Associate Professor Anthony Smith of the School of Medicine supervised the thesis.

As joint principal advisors to the thesis with 45% supervisory loadings each, Dr Nicole Hartley and Associate Professor Nicole Gillespie provided advice on the thesis' conceptualisation and subsequent research design throughout the confirmation, mid-candidature and final thesis review milestones, provided guidance on accuracy and rigour of data analysis, assisted with interpretation and communication of the qualitative analysis results, and helped clarify and contextualise the contribution of the thesis. Both principal supervisors provided critical feedback on the thesis to aid clarity, flow and relevance.

Dr Nicole Hartley and Associate Professor Nicole Gillespie provided advice as co-authors in the publication of the chapter five results in the *Journal of Service Research.*

As an associate supervisor to the thesis with a 10% supervisory loading, Associate Professor Anthony Smith assisted with site access and provided advice on the initial conception of the research design ahead of the confirmation milestone.

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service separation, trust, telehealth, phenomenography, ethnography, qualitative, health care, providers, marketing, management

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FoR code: 1117, Public Health and Health Services, 10%

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## List of Abbreviations used in the Thesis

| Abbreviation | Meaning |
|---|---|
| DNA | Did Not Attend (Telehealth Clinic) |
| GP | General Practitioner |
| IHIP | Intangibility, Heterogeneity, Inseparability, Perishability |
| MGMT | Management |
| MKTG | Marketing |

# 1. **Introduction**

*From our seats in Brisbane, we dialled patients in one location, and then another – all at the push of a button, and all without the doctor moving from their seat. We zoomed in and panned out using the camera to see more detail on the patients when required. For some consults, we viewed multiple patients at once. We provided health care for patients who would not otherwise receive medical attention so quickly, easily, or virtually. We completed virtual rounds as nurses rolled a telerobot through the ward with our faces on it. Images flew in on clinicians' mobile devices to be diagnosed via email. Elsewhere, surgeons conducted robotic telepresence surgeries using machinated 'master slaves' rather than their own hands, avoiding the large abdominal incisions typically required with hands-on open surgery.*

*Narrative amalgamation of field notes, 2014*

## 1.1 **Technology, Trust and Telehealth: Understanding Service Separation**

Advancements in technology continuously afford new possibilities for improving service delivery. Technology infusion into service delivery decouples service production from service consumption, both spatially and temporally. For example, we can shop online rather than in-store, study online rather than on campus, or apply for mortgages online without visiting brokers. Health care is no exception. Telehealth – the context for this thesis – allows service providers to use technology to provide health care virtually. No longer must patients and doctors be in the same place at the same time for a clinical consultation to occur. However, service separation fundamentally changes the service delivery that is offered by a service provider. Whilst these technologies are used in daily service encounters such as online retailing, online banking and online education, their application to separate production and consumption in health care service delivery is less familiar. The question is, how is separated service delivery experienced by providers; and, what are the implications for trust-building when interacting virtually with patients to deliver services at a distance?

## 1.2 **A Brief Précis of the Literature**

To inform this thesis' investigation, I draw on two key scholarly literatures. The first derives from services marketing, specifically the literature pertaining to: service separation,

technology infusion and the provider's experience. The second draws on trust, as examined in virtual contexts and in services marketing. I also review the practitioner literature within which the research is situated in telehealth. The following provides a brief overview of each literature.

### 1.2.1 *Why Service Separation?*

Service separation is defined as the "…customer's absence from service production, which denotes the spatial separation [and]…spatial decoupling between service production and consumption" (Keh and Pang, 2010, p. 55-56). Service separation is enabled by the increasing infusion of technology into service delivery processes. This creates new ways for services to be delivered. Several scholars have suggested that services can be simultaneous or separated based on two dimensions: time and space. For example, Betancourt and Gautschi (2001) developed a matrix juxtaposing the production, distribution and consumption of services against their spatial and temporal dimensions. In the services marketing literature, technology infusion for 'service separation' reflects technology mediated service delivery. To understand service separation, I explore technology use from the providers' perspective in delivering services virtually. This is important because of the focus on the customer's perspective to date in the literature, with little known about the providers' experience. For example, recent research by Keh and Pang (2010) demonstrated that customer reactions to service separation are generally favourable. Although service separation increased customer's perceptions of 'access convenience and benefit convenience' it also increased 'performance risk and psychological risk' (Keh and Pang, 2010, p.55). More recently, Paluch and Blut (2013) showed a relationship between service separation and customer satisfaction; for provider-initiated services, customers should be involved whilst customer-initiated services should not involve customers in the delivery process. Grönroos (2011) observes that with 'co-created service delivery' research generally focuses on customers, rather than providers. However, the paradox is that by nature of being 'co-created', services require at least two parties to the exchange; so, what of the voice of the provider? As such, this thesis explores service separation from the perspective of service providers to understand how they experience being physically absent from the service delivery alongside customers. Arising from this physical absence is the need to appreciate whether a service provider's virtual presence is sufficient to establish a relationship - which entails trust development - with customers (i.e., patients) at a distance.

### 1.2.2 *Why Trust?*

Trust scholars concur that trust is highly salient to interpersonal interactions (Mayer, Davis and Schoorman, 1995; Rousseau, Sitkin, Burt, and Camerer, 1998). Trust, being central to human relationships (Deutsch, 1958), provides a point of departure to explore providers' experiences of service separation in terms of how they perceive that they can establish trust via telehealth. Trust processes differ when conveyed virtually rather than face-to-face (Jarvenpaa, Knoll and Leidner, 1998; Jarvenpaa and Leidner, 1999; Jarvenpaa, Shaw and Staples, 2004). Moreover, richer media interfaces better facilitate interpersonal trust formation. The richer the media, the greater is the ability for individuals to perceive non-verbal and visual cues (Martins, Gilson and Maynard, 2004). The ability to read such cues provides salient information when making trust-based decisions. In virtual contexts, trust has been shown to mitigate the psychological separation effects that spatial or temporal separation can have on individuals interacting across the globe in virtual teams (Walther, 1995). Whilst much is known about trust in virtual contexts such as teams, less is known about trust in virtual service delivery, especially from the trustee's perspective. This is surprising given that trustees (i.e., service providers) are the ones needing to gain the trust of the trustor (i.e., customer). As such, in this thesis I explore how service providers perceive that they can establish trust virtually. The empirical context selected to explore service separation and trust in this thesis is telehealth.

### 1.2.3 *Why Telehealth?*

In our ever-changing world, technological developments are increasingly prolific, and health care innovations are at the helm with new health care technologies continuously emerging. Amongst the latest in these novel advances in separated service delivery is telehealth. Telehealth is defined as "…the delivery of clinical services to patients by providers who are physically located a distance…which encompasses all the uses of information and communication technology…[and] includes real-time applications, such as video consultations, and store-and-forward applications, such as transmitting still images" (Wade, Eliott and Hiller, 2014, p. 682). Telehealth technologies include 'real-time applications' for video based teleconferencing, store-and-forward images via email (Tulu, Chatterjee, and Maheshwari, 2007; Wade et al., 2014), and, in this thesis, robotic telepresence for surgical procedures.

Telehealth presents a promising advance for health care delivery, particularly for countries such as Australia. Australia's geographic vastness challenges the provision of quality, equitable care to our rural and remote patients. Catering to a geographically disparate clientele is only worsened by the disproportionate distribution of specialists in our nations' coastal cities. However, there would be severe diseconomies of scale in funding specialists to be posted rurally as this would geographically isolate specialists from higher-traffic urban areas in terms of patient referral numbers. Also, in the next twenty years Australia faces an unprecedented growth in its elderly population. The onus of care is placed firmly on the health system, as the baby-boomers of the 1940s and 1950s become the octogenarians of the 2010s and 2020s and beyond. We need affordable, sustainable ways to keep individuals at home and not in hospital; and, for providers to serve rural and remote communities equitably by comparison to their urban counterparts. In terms of service separation, telehealth is a context where several different technologies are used to deliver health care virtually. Similarly, given the salience of perceived risk, high-level patient dependence on providers, and information asymmetries stemming from provider's high-level specialisations which is unique to health care, renders this an ideal context to explore the nuances of trust formation. As such, from this brief review of the literature and empirical context, two research questions are identified.

## 1.3 **Thesis Aims and Research Questions**

This thesis aims to explore the phenomenon of service separation in the context of virtual health care service delivery. It explores how technology infusion shapes providers' experiences of providing telehealth. Thus, research question one explores:

RQ1: *How do providers experience service separation?*

As noted in the preceding discussion, a particularly relevant factor arising in human exchanges – such as service interactions between providers and customers - is trust. Trusts' salience is only heightened by technology infusion to separate the service delivery. Trust is central to how human interactions unfold; yet, little is known about how providers delivering separated services perceive they can establish trust when interacting virtually. This is important because without providers' feeling that they can establish trust, the uptake of the telehealth services is likely to remain slow (Smith and Gray, 2009). Hence, the second research question explores:

RQ2: *How do providers perceive they can establish trust via separated services*?

In summary, the research purpose was dual. First, drawing on the context of telehealth the aim was to understand the experiences of service providers engaged with providing separated services. Second, after appreciating the nuances in different providers' experiences of service separation, the aim was to explore how they perceived they could establish trust virtually with their patients as a result of technology infusion. The following section highlights the salience of technology use in health care from the services literature.

## 1.4 **Infusing Technology to Separate Services: The Case of Telehealth**

Different technologies can be infused to separate services, such as video conferencing, robotic telepresence, or email. As noted by services marketers in the 1990s:

> "…videoconferencing, a service institution that is gaining prominence in certain settings, has been demonstrated to be a benefit to society in the new area of '*telemedicine'* by separating [service] activities in space while joining them in time" (Gautier, 1995; cited in Betancourt and Gautschi, 2001, p. 168, emphasis added).

Similarly, Schumann, Wünderlich and von Wangenheim (2012) cite telemedicine as an example of a remote service, referring to the world's first transatlantic robot tele surgery in 2001 completed between surgeons in New York and 68-year-old patient in France. Moreover, in smart interactive services the need for trust is complex: "…remote diagnosis, remote repair of equipment, and *telemedicine*" highlight the need for providers "…to emphasize the *interpersonal* elements of the [smart interactive virtual] service by providing control cues, raising social presence, and enhancing human *trust* mechanisms" (Wünderlich, v. Wangenheim and Bitner, 2013, p. 3, emphasis added). More recently, Parasuraman and Colby (2015) have argued that technological advances in health care are crucial to services marketing. The authors predict that "…digital health care will present opportunities wrought by wearable devices, robotic aids, telemedicine, and so on. Robots will open a revolutionary frontier that could upset traditional customer-employee relationships" (Parasuraman and Colby, 2015, pp. 59-60). However, before the 'rise of the robots' draws upon us, it is timely to review what remote service provision, in the form of service separation, means for service providers who are still tasked with operating technologies – including robots - to interact with customers. The salience of service separation and how providers are faced with remote service delivery has never been

greater. Telehealth provides a theoretically rich context to answer the research questions driving this thesis. In the absence of knowing *how* providers experience service separation, the potential for remote service delivery may not be realised.

## 1.5 **Structure of the Thesis**

The remainder of the thesis is organised across six chapters. Chapter two outlines the literature related to services marketing, trust and telehealth. A new understanding of service separation is required capturing the provider's experience –not just the customer's. Central to this revised understanding is the thesis' focus on trust in technology infused contexts, such as those characterised by service separation. Chapter three outlines the methods, data collection and analysis procedures used to address the research questions. Data collection was based on phenomenographic interviews with 33 specialists and ethnographic observations of 8 telehealth clinics across two Australian hospitals. In chapter four, a practice-based theoretical approach foregrounds telehealth as a context where specific activities undertaken by providers reconstitute virtual health care service delivery in new ways. Chapters five and six present the results for questions one and two respectively. Chapter five describes four understandings of service separation as a *depersonalised experience* that requires *negotiating intangibility* which can feel *clinically voyeuristic* and necessitates *managing one's identity versus role*. Chapter six highlights six trust practices adopted by providers when establishing trust. These included: leveraging face-to-face meetings, transferring trust from third parties, conveying competence, normalising telehealth, reading emotions and maintaining continuity of care. Chapter seven discusses the findings from chapters five and six to show the thesis' contribution to literature and practice. Limitations and future research directions are also discussed.

Throughout the remainder of the thesis, first and third person voicing is used discretionally for two effects. These effects are complementary and serve a linguistic and methodological purpose. First, the use of first person highlights instances where observations are my own, rather than those of interviewees or those of authors whose research was sourced from the extant literature whilst developing the thesis. Second, the use of first person is consistent with the interpretive approach to the collection of the qualitative empirical material underlying the research, whereby the agency of the researcher in the field is both explicit and part of the (re)telling of the data in its synthesised form. First person, in this sense, heightens the degree of pragmatic validity (Sandberg, 2005) fundamental to phenomenographic research.

# 2. **Literature Review: Service Separation, Trust & Telehealth**

> "*Virtuality requires trust to make it work"*
>
> Jarvenpaa et al., 1998, p. 30

## 2.1 **Chapter Overview**

This chapter draws on three key streams of literature. First, in support of research question one – how providers experience service separation - the services marketing literature including service separation research is reviewed. The aspects of the services marketing literature reviewed include: characteristics of the services marketing paradigm, technology infusion and service separation, and what is known about providers' experiences of technology infused services. Services' marketing is defined in terms of its origins and distinction from physical products based on the four characteristics of intangibility, heterogeneity, inseparability and perishability (Lovelock and Gummesson, 2004). Next, the infusion of technology (Bitner, 2001a; 2001b) is reviewed in response to the breakdown of the inseparability assumption and the rise of separated service delivery (Keh and Pang, 2010; Paluch and Blut, 2013). Several types of technology infused service are reviewed, reflecting the shift from high touch low tech, to high tech, low touch service delivery (Schumann et al., 2012). By way of transitioning to the second research question focussed on providers' experiences of trust, trust's importance in services marketing (Morgan and Hunt, 1994) and virtual service contexts is provided.

Second, to advance knowledge for research question two - how providers perceive they can build trust via separated services - trust in services and its application in virtual contexts is reviewed. Key areas from the trust literature that are reviewed include: defining and conceptualising trust and its different forms, key factors that provide a basis for trust and key mechanisms for trust development, as well as how this manifests in virtual contexts. First, a definition and conceptualisation of trust is provided, including discussion of trust's referents and levels, to ground the discussion in this thesis' variable of interest. Next, a dominant trust model (Mayer et al., 1995) is described highlighting the salience of trustworthiness, perceived risk, and trust propensity. The behavioural intention to trust based on reliance and disclosure (Gillespie, 2003) precedes discussion of interpersonal trust's affect based and cognitive based dimensions (McAllister, 1995). Calculus, knowledge and identification based trust (Lewicki and Bunker, 1996) are highlighted before elaborating the four

presumptive bases of impersonal trust (Kramer, 1999), encompassing third party trust transference, category, role and rule based trust. Finally, swift trust (Meyerson, Weick and Kramer, 1996) provides a way to review the literature on trust in virtual context (Jarvenpaa and Leidner, 1998). Rounding out the chapter to synthesise the contextual relevance of service separation and trust in health care, the telehealth practitioner literature is reviewed.

## 2.2 **Defining Services**

Clarifying precisely what services are and how they are characterised has been of interest to marketers for the last six decades. Services were first acknowledged as being distinct from goods in the 1950s (Fisk, Brown and Bitner, 1993). At this time, Regan (1963) claimed a 'service revolution' was afoot. Services were seen as activities (Blois, 1974; Grönroos, 1982) that yielded benefits and satisfactions (Regan, 1963) from physically intangible transactions (Grönroos, 1982) - which excluded tangible commodities (Judd, 1964). Services were defined as performances of acts (Rathmell, 1966; Zeithaml, Parasuraman, and Berry, 1985) enacted during specific time periods (Shostack, 1987) which were informed by dramaturgical metaphors and the use of service 'scripts' (Solomon, Surprenant, and Czepiel, 1985) which provided accepted ways of interacting in a servicescape. Grönroos (1978) suggested services could be characterised as rented, owned, or non-goods based (Judd, 1964), or instrumental versus expressive performances (Grönroos, 1984); whilst providers themselves were seen as offering people-based or equipment-based services (Thomas, 1978). Whether the performance was people-based or equipment-based (Thomas, 1978), it inextricably linked the provider to the act of service performance. Moreover, this was long thought to necessitate customer presence for a service to be delivered, because equipment immobility tethered providers to geographic locations where their service equipment was based (Grönroos, 1982). From this, Lovelock (1980) argued that customer presence was fundamental to understanding service delivery:

> "…throughout service delivery...to initiate or terminate the service transaction… [or] not at all (the relationship with the service supplier can be at arm's length through …electronic media)? Does the customer need to be *mentally* present during service delivery? Can mental presence be maintained across physical distances?" (p. 12).

## 2.3 **Characterising Services' IHIP Paradigm**

From the late 1970s and early 1980s, once services marketers had a clearer grasp on what services were, an overarching characterisation of services' unique aspects was sought. Shostack (1977) argued that marketing was 'myopic' in having neglected to develop a sufficient paradigm for services. As noted by Kuhn (1970), scientific progress often requires a field paradigm or shared fundamental assumptions in a given community. As such, several scholars advanced characteristics for a services paradigm based on intangibility, heterogeneity, inseparability and perishability (IHIP) (Bessom and Jackson, 1975; Parasuraman, Zeithaml and Berry, 1985; Regan, 1963; Zeithaml, Parasuraman, and Berry, 1985). From this, Fisk et al. (1993) confirmed these four characteristics as "…the underpinnings for the case that services marketing is a field distinct from goods marketing" (p. 68), reflecting a dominant paradigm in services marketing – the IHIP paradigm.

First, intangibility is the most widely cited differentiator between goods and services (Lovelock and Gummesson, 2004) appearing in early characterisations of services marketing (Bateson, 1979). Highlighting intangibility's salience, as Parasuraman et al. (1985) explain, "…services are intangible…because they are performances [which are experienced] rather than objects [which are held]" (p. 42). To indicate briefly the scope with which intangibility was considered as a defining characteristic of services, Table one summarises the dominant conceptualisations of intangibility noted from the 1960s to 1980s. These definitions foreground the inability of services to be touched or held - unlike physical goods. The definitions in Table 1 highlight the experiential nature of services.

**TABLE 1. DEFINING INTANGIBILITY IN SERVICES MARKETING**

| Author | Year | Conceptual Definition of Intangibility |
|---|---|---|
| Rathmell | 1966 | "… 'goods'; these are tangible economic products that are capable of being seen and touched and may or may not be tasted, heard, or smelled. However, 'services' seem to be everything else" (p. 32). |
| Donnelly | 1976 | "…because they are intangible, services *cannot* be stored, transported, or inventoried" (p. 55, emphasis added). |
| Shostack | 1977 | "…a service is rendered. A service is experienced. A service *cannot* be stored on a shelf, touched, tasted or tried on for size" (pp. 73-75, emphasis added). |
| Levitt | 1981 | "…all products are in some important respects intangible…when prospective customers *can't* experience the product in advance" (pp. 96-97, emphasis added) |
| Parasuraman et al. | 1985 | "…most services *cannot* be counted, measured, inventoried, tested, and verified in advance of sale to assure quality" (p. 42, emphasis added). |

Second, heterogeneity encompasses "…variability, inconsistency, or nonstandardization [sic]" (Lovelock and Gummesson, 2004, p. 25). As Zeithaml et al. (1985) explained "…heterogeneity concerns the potential for high variability in the performance of services. The quality and essence of a service (a medical examination, car rental, restaurant meal) can vary from producer to producer, from customer to customer, and from day to day" (p. 34). No two haircuts, restaurant meals, or airline flights are the same – replicating environmental conditions of the service experience is impossible. Whilst goods are standardised in controlled production environments which do not require customer presence, services are only *partially standardised* offerings in *partly controlled* consumption environments which rely on customer-provider interactions (Grönroos, 1990). As a result of heterogeneity in service delivery and defining services as 'performances', inevitable performativity fluctuations signal that the "…consistency that you can count on and try to communicate to the consumer is not a certain thing" (Knisely, 1979, cited in Zeithaml et al., 1985). As Sasser, Olson and Wyckoff (cited in Lovelock and Gummesson, 2004) noted, there are service delivery-based challenges stemming from a service provider's performance variability. This reflects performance variability amongst different providers, but also within the same provider and even whilst interacting with the one customer, on the same day. Moreover, aside from providers themselves, "…customers and their behaviour [sic] cannot be standardized and totally predetermined" (Schneider, 1986, cited in Grönroos, 1990, p. 7). This is particularly the case if the service script is not adhered to or cannot be adhered to, disrupting the norms of the service delivery to which providers and customers in given service delivery contexts are likely accustomed.

Third, inseparability reflects the perceived inability to separate service production (i.e., requiring the provider's presence to produce the service) from consumption of that same service (i.e., requiring the customer's presence to consume the service). As Zeithaml et al. (1985) explained, "…inseparability of production and consumption involves the simultaneous production and consumption which characterizes most services" (p. 33). Bessom and Jackson (1975) explain that "… 'A hotel room is the most perishable commodity imaginable. If it's not booked tonight, that revenue is lost forever.' Unsold theatre tickets and empty seats on airline flights also illustrate the risk inherent in service perishability" (p. 76). As such, many services are seen as inseparable because production and consumption are not only *thought* to occur simultaneously (Donnelly, 1976; Parasuraman et al., 1985), but rather that they *must* occur simultaneously due to their highly interactive nature (Grönroos, 1978). Carman and Langeard (1980) state that with inseparable services the buyer is forced

into direct 'intimate' contact with production processes – such as hairdressing, dentistry, or taxi services. Moreover, due to the equipment-based nature of service provision as highlighted by Thomas (1978) "…the geographic area in which most service marketers can operate is, therefore, restricted' (Donnelly, 1976, p. 55). As Kelley, Donnelly and Skinner (1990) observe, a long-held belief foregrounded the presence of the customer as crucial. Thus, because providers and customers were viewed as being in the same place at the same time for service delivery to occur; either the customer travelled to the service provider, or vice versa (Sasser, 1976).

Fourth, perishability depicts the inability for services to inventoried (Donnelly, 1976; Parasuraman et al., 1985) – they are transient, fleeting, temporally bound interactions. Zeithaml et al. (1985) explained "…because services are performances that cannot be stored, service business frequently find it difficult to synchronize supply and demand" (p. 34). Sasser (1976) comments that because services are unable to be inventoried due to their intangibility, that the "…perishability of services leaves the manager without an important buffer that is available to manufacturing managers" (p. 134). Thus, the 'risks' involved with service delivery are significantly higher for providers of services than sellers of goods. This higher-risk tolerance entailed by providers is because "…the perishability of services…prevents storage [i.e., inventory]" (Bessom and Jackson, 1975, pp. 75-76) – only equipment used to produce the delivery, rather than saleable goods, can be held in lieu of the provider-dependent service provision. Given the broad discussion of these four characteristics, an interesting progression emerged in the services marketing literature once providers started using technologies to deliver services virtually.

## 2.1 **The Advent of Service Separation**

As noted in the introductory chapter, continuous advancements in technology create new ways for service providers to innovate in how services are provided to customers. As a result of technology infusion, some of the long-held assumptions underpinning the IHIP paradigm, particularly around service inseparability, were challenged. With technology infusion, services scholars argued that services were able to be separated in both time and space – that is, both temporally and spatially (e.g., Betancourt and Gautschi, 2001; Keh and Pang, 2010; Paluch and Blut, 2013). For services where separation was possible, this meant that providers and customers no longer necessarily needed to be in the same place at the same time for the service delivery to occur. In response, Betancourt and Gautschi (2001)

developed a matrix juxtaposing the production, distribution and consumption of services against their spatial and temporal dimensions. Several services marketing scholars highlight the instability of this characterisation of services through the existing IHIP paradigm (e.g., Lovelock and Gummesson, 2004; Moeller, 2010). Lovelock and Gummesson (2004) state technology as the driver behind the ability to separate service production from service consumption:

> "Advances in information technology and telecommunications, notably development of the Internet and digitization of text, graphics, video and audio, have made it possible to separate customers in both *time* and *space* from the production of numerous information-based services, thus destroying the twin constrains of both inseparability and perishability…as a paradigm, the notion that the four IHIP characteristics make services uniquely different from goods is deeply flawed" (p. 32, *emphasis added*).

In a landmark study, Keh and Pang (2010) argued for the case of service separability, stating that the "…customer's absence from service production…denotes the spatial separation between service production and consumption" (Keh and Pang, 2010, p. 55). Paluch and Blut (2013) further explored the concept of service separation from the customer's perception in relation to customer satisfaction and their level of involvement. How this challenge to the long-held inseparability assumption emerged was through technology infusion, which subsequently saw the emergence of self-service technologies and service automation, as well as remote service provision at a virtual distance.

### 2.1.1 *Technology Infusion in Service Provision: A New Hope*

During the 2000s, services marketing experienced another 'turn' from the influence of technology infusion. This developed such that the 'low-tech, high-touch' paradigm (Bitner, Brown and Meuter, 2000; Bitner 2001a; Bitner 2001b) evolved into a 'high-tech, low-touch' paradigm. Technology infusion in services allows "…human service providers interact with physically dispersed human customers by means of ICT, and no longer utilize [sic] a physical interface" (Breidbach, Kolb and Srinivasan, 2013, p. 428). Driving the uptake of such delivery modes, Dabholkar (1996) suggested that customer evaluations of technology could be either attribute-based or affect-based. Attribute-based motivations were driven by cognitive factors such as ease of use, reliability, enjoyment; whilst affect-based motivations were driven by emotional factors such as their attitude toward technology use and their personal need to interact with the service provider (Dabholkar, 1996). Whilst the attribute-based approach

highlights the functional utilities arising from technology infusion, the affect-based approach points to the relational considerations arising from service separation.

Since technology was identified as having the potential to transform or replace the role of service providers (Bitner et al., 2000); two shifts have occurred in the literature regarding how scholars view technology's impact on provider-customer interactions. First, Parasuraman and Grewal (2000) argued that technology-customer, technology-employee and technology-company linkages were inextricably central for delivering quality, value and loyalty in virtual services. For example, ecommerce replaced virtual sale of physical goods, whilst eservice replaced face-to-face service delivery (Voss, 2003). However, the transition of these exchanges online required negotiating new ways of maintaining the customer-provider relationship in the digital space. Second, more recent scholarship suggests that the emergence of smart interactive technological services during the 2010s reflects newer 'high-tech, high-touch' service paradigms (Wünderlich et al., 2013). This signals an evolution from the low-tech, high-touch paradigm (Bitner et al., 2000), and highlights new ways for providers to infuse technologies whilst acknowledging the importance of maintaining customer relationships, or the customer 'touch' point. Overall, technology infusion has made services a) more tangible, b) more separable, c) more standardized and d) less perishable (Huang and Rust, 2013), as is seen with a) self-service technologies; and, b) remote service provision.

### 2.1.2 *The Rise of Self-Service Technologies: The Machine Strikes Back*

Self-service technologies are "…technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter, Ostrom, Roundtree and Bitner, 2000, p. 50). However, self-service technologies were not a foreign concept. Around the time when services were emerging as unique from physical products as previously discussed, Regan (1963) claimed "…*self-service technology* for retail trade has become a *commonplace*. Systems of layout, display, communication, and control have been coordinated to facilitate self-service buying. Automatic vending equipment represents a further technological development in retail trade that is being more *widely applied*" (p. 61, emphasis added). Lovelock and Young (1979) had also observed that self-service technologies increased service efficiency and productivity because service providers could outsource some of their own service tasks to customers. Today, this is seen with daily service interactions such as automated teller machines (ATMs) and self-serve checkouts for grocery scanning and packing. For example, Bateson (1985) described the key benefit for

service providers implementing self-service technologies as enabling customer propensity to participate in technology-based delivery to streamline service delivery processes. For example, customer propensity to participate in self-service technology delivery is evidenced through consumers preferring to scan and pack their own groceries, rather than passively waiting in queue at the checkout. Task delegation has been theorised to include two sub-themes: "'on-site' options such as touch screens in department stores, information kiosks at hotels, and self-scanning in grocery stores and libraries…[and] 'off-site' options such as telephone and online banking and shopping on the Internet" (Dabholkar and Bagozzi, 2002, p. 184). Providers can therefore use task delegation via self-service technologies to reduce costs, increase customer satisfaction and loyalty and reach new customer segments (Bitner, Ostrom, and Meuter, 2002).

Customers need self-service technologies to outperform the in-person service that is typically delivered when interacting with a service provider. Customer usage of self-service technologies depends on the perceived ease of use, whether interacting with service providers is desired in particular service contexts, and is contingent on access convenience and cost-efficiencies (Meuter et al., 2000). If self-service technologies fail or are poorly designed, customers will become dissatisfied (Bitner, 2001a); thus, perceived self-service convenience drives uptake (Collier and Kimes, 2013). Technology failure is known to exacerbate the degree of technological anxiety experienced by individuals in the context of separated services (Keh and Pang, 2010), which also predicts declined usage (Meuter, Ostrom, Bitner & Roundtree, 2003). The extent to which a customer wishes to be involved also relates to the perceived 'fun-factor' associated with using self-service technologies (Curran and Meuter, 2007). In retail services, perceived usefulness, ease of use, reliability and fun predicted self-scanning usage (Weijters, Rangarajan, Falk and Schillewaert, 2007, p. 3). Curran, Meuter and Surprenant (2003) also documented how self-service technologies diminishing service heterogeneity, described as indicating a given service provider's variable performativity. As Curran et al. (2003) explain, by using self-service technologies and "…removing the employee, it can create a more constant service atmosphere. Thus, the customer will know precisely what to expect…and have a similar experience each time the service is used" (p. 211). From self-service technologies, the next evolution in technology infusion re-integrated the provider, but at a digital distance.

### 2.1.3 *Remote Service Provision: Return of the Service Provider*

Remote service provision differs from the infusion of self-service technologies. The former requires the service provider to be at the helm; the latter is the ambit of the customer. Remote services are an "…emerging type of technology-mediated service…that exclusively allow the service provider to access and modify connected service objects over long distances" (Paluch and Blut, 2013, p. 415). With remote service provision, the role of the service provider remains central and is mediated by technology infusion (e.g., Meuter et al., 2000). This is by contrast to the infusion of self-service technologies which remove the human provider and foreground the role of the customer.

The preceding discussion highlights the thesis' primary focus on service separation as a form of remote service provision. Service separation enables providers and customers to transact at a virtual arms' length distance. However, to date a scarce amount of research has explored how providers experience the delivery of remote services. A larger emphasis on the experiences and perspectives of the customer features in the literature. For service separation to occur in the first instance, it is important to know how this process impacts service providers as they are the ones tasked with virtual service delivery. A particularly salient finding is that customers' affective perceptions of remote service provision vary based on their rapport with the service provider. Recent research shows that technology becomes less desirable as a customer-provider rapport develops (Giebelhausen, Robinson, Sirianni and Brady, 2014). For example, services that require intimate, personal or sensitive exchanges, with the potential for ongoing repeated interactions – such as health care – may be more predisposed to rapport building than retail or education. When health care services are delivered virtually, what are the impacts on not only how providers experience this service separation, but on how they perceive they can build customer relationships?

## 2.2 **Services Marketing and the Salience of Trust**

Given the perceived differences in how service providers, as opposed to customers, experience service separation and the infusion of technology into service provision, it is important to understand how despite difference both provider and patient can come together to interact across the digital divide. Central to this separated service interaction is the need for service providers to actively build customer relationships. A key aspect of relationship building in the context of marketing is trust (Morgan and Hunt, 1994). The ability of the service provider to effectively establish a working relationship enables not only the functional

outcomes of the service delivery to be realised (i.e., treatment and diagnosis) but also the ongoing nature of many chronic conditions that tend to be more prominent in the telehealth context (Smith and Gray, 2009) highlights the importance for doctors to develop a relationship with each patient under the conditions of service separation which go beyond addressing the patient's emergent medical issue. For telehealth as a form of service separation to work most effectively, it is important that those chronic (i.e., recurring) health conditions for which specialist advice is most often sought gain economies of scale in both use of technology, and the patient and doctor's time through repeated interactions with the same provider. Central to this ongoing relationship, and even more salient due to the infusion of technology which physically dislocates the provider and patient from each other, is trust.

The dearth of research on trust in services and from the perspective of the provider is surprising, particularly in virtual services contexts which are becoming increasingly prolific. Central to rapport building and fundamental to relationship marketing is trust (Morgan and Hunt, 1994). This is because "trust lies at the heart of the marketing concept…if marketing is about meeting customer [needs]...then trust is a major element in the relationship" (Arnott, 2007, p. 981). Morgan and Hunt (1994) originally highlighted that commitment entails trust in relational exchanges which are based on reliability and integrity. Trust between service providers and their customers is a mechanism that has long been recognised as important to marketing (Doney and Cannon, 1997). Trust underpins long-term relationship building because in marketing, trust requires the trustor to rely on service expectations that the providers' promises will be honoured (Sirdeshmukh et al., 2002). Relying on a trustee who then shows integrity helps trustors to manage their uncertainty and commit to a relationship with the trustee (Moorman, Zaltman, and Deshpandé, 1992). Moreover, building trust is a key way for service providers to elicit the disclosure of information from customers (Wirtz and Lewin, 2009) which then predicts relationship stability and satisfaction (Garbarino and Johnson, 1999). Trust has also been found to vary across different cultures in terms of how it is built (Schumann, v. Wangenheim, Stringfellow, Yang, Praxmarer, Jimenéz, Blazevic, Shannon,, and Komor, 2010). As such, the salience of trust to customers in service relationships is logical; however, its role in virtual contexts and how providers perceive that they can establish it virtually is relatively absent from the literature. Although there are many studies on trust in services settings, their presence in the virtual service literature is less so.

In face-to-face service contexts, service providers can build trust in specific ways. Trust building includes customer education and service knowledge to enhance the relationships

providers have with their customers (Eisengerich and Bell, 2008). Trust is particularly salient in professional services, where courteous and responsive providers are most desired by customers (Eisengerich and Bell, 2008). Displaying interpersonal care and attention increases affect-based trust in services (Berry and Bendapudi, 2007). Affect-based trust is particularly useful when customers 'like' providers as this forms a basis for providers' to leverage trust by creating a personal attachment to the customer (Nicholson, Compeau and Sethi, 2001). Even though trust, liking and attachment are conceptually distinct variables, they interact as part of the complex psychological processes that unfold during service encounters between providers and their customers (Nicholson et al., 2001). Service relationships are strengthened by frequent contact in the early stages of development; moreover, controlling for the number of contact points, longer duration relationships are more enduring (Dagger, Danaher, and Gibbs, 2009, p.371). For novice customers, trust can reduce anxiety, perceived risk and increase trustworthiness in the provider, with specific behaviours including listening to customers and responding to their concerns (Dagger and O'Brien, 2010). Similarly, de Ruyter and Wetzels (2000) find that a service providers perceived listening behaviours, perceptiveness and responsiveness increase trust. Trust is enhanced when providers convey that they will not exploit or distort customer information, which requires effective listening and communication (Crosby, Evans and Cowles, 1990). Providers building trust can leverage listening behaviours (Eisengerich and Bell, 2008) by showing interpersonal care and attention (Bendapudi and Berry, 1997) toward customers. However, what is known about how providers build trust with their customers is as yet relatively unexplored in the context of virtual services that are separated by technology infusion.

Research suggests that trust processes in virtual contexts differ from face-to-face service interactions. The reasons as to why the strategies around trust-building differ for a service provider between contexts such as the physical versus virtual (i.e., separated service) format are diverse. Several factors around the need for service providers to engage in different ways given the challenges posed by service separation – particularly in the health care services context – are noted. Overall, service providers are unable to physically interact with patients which is typically seen as the fundamental aspect of a patient personally going in to 'see a doctor' (Smith and Gray, 2009). More broadly, beyond the specifics of the health care service context, with remote service delivery, providers act as service counterparts that if perceived as trustworthy, can help to facilitate customer attitudes and behaviour beyond the benefits of the technology alone (Wünderlich et al., 2012). Moreover, customers are less

needy for human interaction when interacting with self-service technologies, if they are satisfied and trusting (Collier and Kimes, 2013). In online services, privacy and security influence trust in the service provider (Fassnacht and Koese, 2006). Keeping separated services synchronous also influences customer's perceptions of service providers as more trustworthy, than when the service delivery does not feature real-time interactivity (Vilnai-Yavetz and Rafaeli, 2006). However, some scholars have found a paradox whereby the stronger the trust, the more susceptible it could be to damage (Gundlach and Cannon, 2010) because expectations for its maintenance over time increase.

Research in the services literature documents the link between perceived risk, which entails trust, and technology infusion. The infusion of technology to separate service production from consumption - and thus, provider from customer - heightens the perceived risk embedded in the virtual service experience. For example, a customer's perceived risk will influence their use of technology in services context (Meuter et al., 2003), and has been identified as a salient factor in separated services where 'technology anxiety' is present (Keh and Pang, 2010). As noted by Jacoby and Kaplan (1972), risk is not only key to trust but is multifaceted, where the authors "…identify five consumer risk categories: functional, physical, financial, social, and psychological" (cited in Paluch and Blut, 2016, p. 2425). Thus, given the salience of perceived risk in virtual services, and its salience to trust formation, trust is a key factor in service separation warranting exploration. As such, there is a clear gap in the literature to date regarding our understanding around how trust develops in virtual environments, such as those characterised by service separation and the infusion of technology to digitally connect, yet simultaneously physically dislocate, provider from patient.

To explore what is known about trust in more detail, the literature review now departs from the services marketing context to review more specifically what is known about trust. This draws on extensive work from the organisational behaviour literature which underpins how marketing scholars conceptualise trust and its salience to services. Definitions of trust and knowledge of its mechanisms in virtual contexts are detailed by way of providing grounds for research question two. First, I define and conceptualise trust and outline the difference between trust levels versus referents. Guided by the dominant approach toward trust formation advanced by Mayer et al. (1995), I then discuss each aspect of their integrative model of trust formation. This includes explaining trust formation in terms of its key processes encompassing trustworthiness, trust propensity, and perceived risk, as well

as discussing work on the behavioural intention to trust and its affective and cognitive-based dimensions. Following this, the forms and bases of trust, as well as the impersonal bases of trust formation proposed by Kramer (1999), are discussed ahead of a review of research which has explored trust formation in virtual contexts.

## 2.3 **Defining Trust**

Trust is a complex construct;it has been defined as "…an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon" (Rotter, 1967, p. 651). From this, two predominant definitions emerged advocating trusts' psychological bases. First, trust has been defined as the "…willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995, p. 712). Second, Rousseau et al. (1998) suggest that trust is "…a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior [sic] of another" (p. 395). Vulnerability entails risk (Zand, 1972), and accepting risk requires "…confident positive expectations regarding another's conduct" (Lewicki, McAllister and Bies, 1998, p. 439). These definitions highlight that the key elements of trust are one's willingness to accept *vulnerability* based upon *confident positive expectations*. All relational forms entail vulnerability; however, reliance can be dependent or interdependent; shallow or deep (Sheppard and Sherman, 1998). Without vulnerability, perceived risk (in either the trustee, or the situation and its contextual elements itself) lessens, decreasing trust's salience (Schoorman, Mayer and Davis, 2007). Overall, the vulnerability entailed in interpersonal trust requires that "…the word, promise, oral or written statement of another individual or group can be relied upon" (Rotter, 1980, p.1). The complexity of trust includes knowing that it can operate at several levels and can form in relation to multiple referents.

Trust always develops with reference to another; moreover, trust varies at the level at which it develops. Trust levels reflect the level at which trust forms, such as the organisational versus interpersonal level. Trust referents reflect in whom trust forms, such as one's trust in a whole team versus just one team member. Fulmer and Gelfand (2012) explain that "…trust *at* a level refers to the level of analysis… trust *in* a referent refers to the target of the trust (i.e., the trustee)" (p. 1170, emphasis in original). Hence, trust levels and referents include an "…array of entities, individuals, dyads, groups, networks, firms, and

interfirm alliances in which trust and related processes play a role" (Rousseau et al., 1998, p. 397). Trust's multi-level, multi-referent conceptualisation means "…failure to clearly specify the trustor and the trustee encourages the tendency to change *referents* and even *levels* of analysis…[which] obfuscates the nature of the trust relationship" (Fulmer and Gelfand, 2012, p. 711, emphasis added). This thesis' focus is on trust formation at the *interpersonal level* with reference to *service providers*, and is grounded in the following seminal model of trust formation from the extant literature.

## 2.4 **The Mayer, Davis & Schoorman (1995) Model of Trust**

Mayer, Davis and Schoorman (1995) originally proposed an integrative model of trust formation. Supported by subsequent research (e.g., Rousseau et al., 1998), Mayer et al.'s (1995) work has prevailed as the dominant model of trust over the last twenty years. Mayer et al.'s (1995) model is process based and features several different stages which the antecedents to trust formation are thought to emerge. Further depth is added by Mayer et al.'s (1995) explanation of outcomes, as well as boundary conditions which shape these processes in the form of moderators. The key antecedents to the model include: perceived trustworthiness (based on ability, benevolence and integrity) and trust propensity, which predict trust formation. Key outcomes of trust formation in the model include risk taking.

Two key moderators provided depth to the model: trust propensity and perceived risk. Trust formation is moderated by the trustor's propensity to trust others as a reflection of their generational dispositional attitude or 'trusting nature'. After trust forms, the relationship between trust and risk taking in a relationship is moderated by perceived risk. The first moderator, propensity to trust, strengthens the relationship between perceived trustworthiness and trust. That is, the direct relationship between perceived trustworthiness and trust is strengthened in the presence of one's propensity to trust others. The second moderator, perceived risk, weakens the relationship between trust and risk taking in relationships. That is, the direct relationship between trust and risk taking is weakened in the presence of perceived risk.

Overall, this integrative process model of trust formation proposed by Mayer et al. (1995) is both linear and self-reinforcing. It features a feedback loop from the outcomes of trust formation which flows back to the start of the process based on the trustor's perception of the trustee's trustworthiness. The model entitled Figure 2 depicts the Mayer et al. (1995) model of trust (note that this is referred to as Figure 1 as an extract from the original Mayer

et al. (1995) publication). Understanding trust's antecedents is important because trust and trustworthiness are still acknowledged some twenty years later since this models' initial inception to be dynamic concepts that change over time (Jones and Shah, 2016). Each variable seen in Figure 1 is now explained in turn.

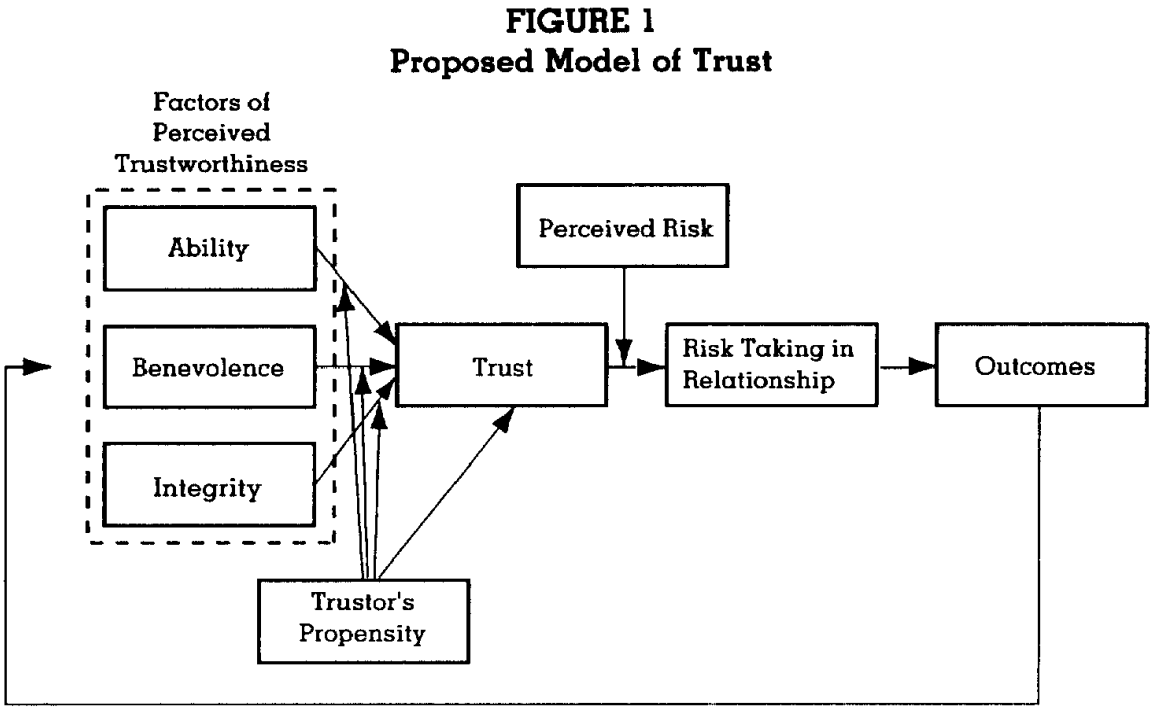


**FIGURE 1. MAYER, DAVIS & SCHOORMAN'S (1995) PROPOSED MODEL OF TRUST**

### 2.4.1 *Trustworthiness*

There are several important points worth highlighting regarding the complexity of trustworthiness. This includes appreciating its multi-faceted nature, the importance of confident expectations, and the evolution of the sub-factors of trustworthiness over time. First, Mayer et al. (1995) conceptualise 'trust' as distinct from 'trustworthiness'. Trustworthiness has long been acknowledged as a multi-dimensional construct (e.g., Gabarro, 1978). Mayer et al.'s (1995) model comprises three factors – namely, ability, benevolence and integrity – which are collectively known as ABI. Second, the role of confidence entailed in trust is central to the origins of trustworthiness, where one "…must have confidence that the other individual has the ability and intention to produce it" (Deutsch, 1960, p. 125). Therefore, a key distinction for perceived trustworthiness is that it captures the 'confident positive expectations' of trust in terms of how referents demonstrate their ability, benevolence and integrity toward the trustor. Third, longitudinal qualitative work by Gabarro (1978) identified two general trust bases: competence and character. From this, Mayer et al. (1995) separated Gabarro's (1978) conception of character into benevolence

and integrity – two of the three pillars of trustworthiness – arguing that "…the trustee would be deemed quite trustworthy" (1995 pp. 720-721) if ability, benevolence and integrity were all perceived. This is particularly important when risk factors in situations are predisposed to higher tendencies for a trustee to be abusive, negligent or harmful toward the trustor (Sheppard and Sherman, 1998). Thus, the ABI factors of perceived trustworthiness are qualities perceived by the trustor and exhibited by the trustee in anticipation of trust formation. In the context of trust in buyer-seller relationship, trust and trustworthiness are also acknowledged as distinct concepts; for example Doney and Cannon (1997) highlight that the nature of trust in buyer-seller relationships shapes how the interactions between provider and customer unfold. Trust in the context of the marketing literature be defined as comprising perceived credibility and benevolence of a target of trust – a theme noted in subsequent studies of trust in similar marketing based relationships between providers and customers (see Ganesan, 1994; Kumar, Scheer and Steenkamp, 1995).

I now provide definitions for each sub-factor of perceived trustworthiness based on their conceptualisation in the Mayer et al. (1995) model. Although they are inter-related, ability, benevolence and integrity can and do vary independently of each other. Although some scholars have failed to find significant relationships between ABI and trust (e.g., Jarvenpaa et al., 1998), the majority of scholars concur that perceived trustworthiness drives trust (e.g., Lewis and Weigert, 1985; Rousseau et al., 1998). Moreover, this relationship is mutually reinforcing; hence, "…in the ideal case, one trusts someone because she [sic] is trustworthy, and one's trustworthiness inspires trust" (Flores and Solomon, 1998, p. 209).

### 2.4.2 *Trustworthiness Sub-factors: Ability, Benevolence & Integrity*

Mayer et al. (1995) define ability as "…that group of skills, competencies, and characteristics that enable a party to have influence within some specific domain" (p. 717). Ability encompasses the capability or 'can-do' component of trustworthiness, and reflects the unique attributes an individual possesses, signalling their competence. Second, Mayer et al. (1995) define benevolence as "…the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric profit motive" (p. 718). Benevolence creates a "…emotional attachment to the trustee, with caring and supportiveness" (Colquitt, Scott, and LePine, 2007, p. 911). Benevolence indicates the trustee's display of genuine care and concern for the trustor. Butler (1991) suggested that benevolence encompassed loyalty, openness, receptivity and availability. Finally, Mayer et al. (1995) define integrity as involving

"…the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable" (p. 719). The perception of integrity by the trustor provides them with a rational reason to trust the trustee (Colquitt et al., 2007). Some scholars see this as reflecting a degree of moral and ethical value congruence between the trustor and trustee (Sitkin and Roth, 1993). Integrity implies consistency (Butler, 1991) and requires following through with one's promises (Sheppard and Sherman, 1998). Taken together, the sum of the ABI factors is greater collectively than in its constituent parts. That is, whilst ability, benevolence and integrity may each facilitate trust formation individually, when they co-occur, the potential for trust formation is optimised.

There are parallels that can be drawn between the notion of benevolence and ability to the literatures' discussion of cognitive-based and affect-based trust. In the context of working relationships (McAllister, 1995), interpersonal trust – which is defined as "…an individual's belief about the integrity and dependability of another" (Ferrin, Dirks and Shah, 2006, p. 871) - has both cognitive-based and affective-based dimensions (Lewicki and Bunker, 1996; Lewis and Wiegert, 1985). Broadly, cognitive-based trust can be thought of as decision stemming from 'the head' whilst affect-based trust relies on decisions from 'the heart' (Chua, Ingram and Morris, 2008). Cognitive-based trust is "…grounded in individual beliefs about peer reliability and dependability, and affect-based trust [is] grounded in reciprocated interpersonal care and concern" (McAllister, 1995, p. 25).

First, cognitive-based trust, which is grounded in a trustor's knowledge of the trustee, is asymmetrical because gaining full information about the trustee is unobtainable. Thus, cognitive-based trust requires a 'leap of faith' on behalf of the trustor (e.g., Luhmann, 1979). Cognitive based trust comes 'from the head' (Chua et al., 2008) reflecting rational evidence-based choices. Specifically, cognitive-based trust derives from one's knowledge of trustees, signalling their competence. Logical decision-making requires an appraisal of another's task-related reliability (Johnson-George and Swap, 1982; McAllister, 1995; Ng and Chua, 2006), perceived competence (Parayitam and Dooley, 2008) and dependability (Rempel, Holmes, and Zanna, 1985). Expertise indicates competence, which in turn predicts cognitive-based trust (Johnson and Grayson, 2005) and is cemented through a trustee's reliable role performance (McAllister, 1995).

Second, affect-based trust reflects the emotional bonds developed between individuals (Lewis and Weigert, 1985). Affect-based trust flows 'from the heart', encompassing "…a

bond that arises from one's own emotions and sense of the other's feelings and motives" (Chua et al., 2008, p. 437). Affect-based trust is typically linked to confidence placed in trustees based on their display of genuine care and concern toward the trustor (Johnson-George and Swap, 1982; Rempel et al., 1985). Jones and George (1998) framed the ability to perceive affect-based trust as a way to touch base with one's emotions and to assess one's experience of trust. Hence, affect-based trust is also termed 'emotional trust' (Johnson-George and Swap, 1982), because it requires faith (Rempel et al., 1985). Affect-based trust is enhanced by interpersonal congruence, because similarity engenders affect-based trust (Johnson and Grayson, 2005). McAllister (1995) suggests that affect-based trust can be enhanced through frequent interaction, behavioural affiliation, and mutual assistance. Overall, affect-based trust is a more enduring and generalisable dimension of trust (Lewicki and Bunker, 1996; Lewis and Weigert, 1985) because of its intrinsic rather than extrinsic relational motivation (Rempel et al., 1985).

From the original 'character' versus 'competence' model advanced by Gabarro (1978), two key similarities are noted between perceived trustworthiness' ABI factors and cognitive-based versus affect-based trust. First, affect-based trust represents benevolent behaviours in terms of genuine care and concern for another party as demonstrated by the trustee, akin to Gabarro's (1978) description of character. Second, cognitive-based trust represents the trustor's perception of the trustee's ability in terms of their skills and aptitude, akin to Gabarro's (1978) description of 'competence'.

### 2.4.3 *Trust Propensity*

Trust propensity is a key moderator of trust formation (Schoorman, Mayer and Davis, 1995). In the presence of trust propensity, the positive relationship between perceived trustworthiness and trust is strengthened. As an innate tendency that is unique to each individual (Mayer et al., 1995), trust propensity reflects one's general disposition to trust others (McKnight, Cummings, and Chervany, 1998). A trusting disposition reflects one's personality (Farris, Senner, and Butterfield, 1973) and can be shaped by one's formative early-life experiences (Rotter, 1967; 1971; 1980). Trust propensity has long been considered as related to trust (Kee and Knox, 1970). A high trust propensity predisposes individuals to act in ways that can heighten their vulnerability, because their scepticism toward others is generally low (Butler, 1999).

Recent research suggests that this is particularly salient when trusting strangers (Freitag and Bauer, 2016) or in novel situations (Ferguson and Peterson, 2015). As a personality-based construct, trust propensity varies *between* individuals, but appears to be relatively stable *within* individuals (Kramer, 1999). Mayer et al. (1995) suggest that trust propensity influences how much one trusts another party prior to obtaining any information about that party. Thus, if the information one receives is vague, discredited or inconclusive (Ferguson and Peterson, 2015, p. 1013) one's trust propensity becomes highly salient in the absence of any other information upon which to make a trust-based decision. However, trust propensity's salience can become blurred when considering the perceived risk that the trustor simultaneously experiences in relation to the situation.

### 2.4.4 *Perceived Risk*

Perceived risk is an important moderator in the trust formation process (Schoorman et al., 1995). In the presence of perceived risk, the positive relationship between trust formation and risk taking relationships is weakened. Sitkin and Pablo (1992) link risk to "…uncertainty about whether potentially significant and/or disappointing outcomes" (p. 726) will eventuate after the decision to trust is made. As such, trust's salience diminishes in the absence of (perceived) risk (Deutsch, 1958). Perceiving risk suggests some vested interest or incentive is possibly at stake, requiring trustors to perceive the risk before trust (Kee and Knox, 1970); or, that potential harm could befall the trustor.

Johnson-George and Swap (1982) declare risk to be one of a few characteristics common to all situations requiring trust. However, Mayer et al. (1995) suggest that this logic prevails only within relationship-based risk taking. The authors clarify that "…there is no risk taken in the willingness to be vulnerable (i.e., to trust), but risk is inherent in the behavioural manifestation of the willingness to be vulnerable" (Mayer et al., 1995, p. 724). The behavioural manifestation of the willingness to be vulnerable has been conceptualised in the extant literature to reflect the notion of one's behavioural intention to trust.

### 2.4.5 *Behavioural Intention to Trust*

Drawing from the work of Zand (1972), Gillespie (2003; 2012) identified two common behavioural dimensions of trust in working relationships. The two forms, conceptualised as 'reliance-based trust' and 'disclosure-based trust' are defined as "…1) reliance: that is, relying on another's skills, knowledge, judgments or actions, including delegating and giving

autonomy, and 2) disclosure: that is, sharing work-related or personal information of a sensitive nature" (Gillespie, 2003, p. 10). Trustworthiness, although an important facilitator of trust, does not fully explain the likelihood of one's actual trust-based behaviours (Gillespie, 2003). Rather, trust is better explained by assessing trust in line with its conceptual definition, as one's willingness to be vulnerable in relation to a trusted party (Gillespie, 2012). Behavioural indicators such as reliance or (inter)dependence (Gabarro, 1978; Zand, 1972), and self-disclosure of personal information (Jones and George, 1998; McAllister, 1995; Rempel et al., 1985) indicate vulnerability, implying one's behavioural intention to trust another at the interpersonal level.

## 2.5 **Forms and Bases of Trust**

The Mayer et al. (1995) model is one representation of the mechanisms for trust formation; however, alternative ideas have been proposed to explain the different types of trust. For example, more recently, Lewicki, Tomlinson and Gillespie (2006) identified several different forms of trust found in the literature, based on the work of Lewicki and Bunker (1996). Lewicki and Bunker (1996) suggest that trust develops across three inter-related phases: calculus based trust, knowledge based trust and identification based trust (Lewicki and Bunker, 1996). Calculus and knowledge based trust precipitate the formation of identification-based trust (Shapiro, Sheppard and Cheraskin, 1992). Importantly, not all relationships shift from one type of trust to another; moreover, few individuals are able to achieve identification-based trust in their relationships. Given the complexity of these forms of trust and their inter-relatedness, each is now explored in more detail.

### 2.5.1 *Calculus Based Trust*

Trust has long been considered to be a behavioural disposition (Williamson, 1993), where high (low) trust indicates cooperative (competitive) behaviour (Sitkin and Roth, 1993). Shapiro et al. (1992) argue that deterrence based trust flows from acting out of fear of consequences. Motivational consequences deter trust defection where the benefits of acting distrustfully in the short-term for self-gain do not outweigh the long-term potential costs that such behaviour could engender (Sheppard and Sherman, 1998). Thus, individuals are less likely to act distrustfully if there are future anticipated interactions (Shapiro et al. 1992), which depend on protecting one's reputation (genuine or not) as a perceived trustworthy individual. Hence, calculative based trust hinges on the trustor using logic to make informed, rational choices about the trustee (Kramer, 1999). These choices are characteristic of economic

exchange based relationships (Rousseau et al., 1998) which occur in anticipation of possible outcomes of future interactions (Wicks, Berman and Jones, 1999). As such, the perceived frequency of future interaction is a key consideration to calculus-based trust. For example, a chronic health care case is likely to incentivise more time to be invested in building a positive rapport for future telehealth interactions, as opposed to an acute referral to a specialist who is unlikely to be needed frequently.

### 2.5.2 *Knowledge or History Based Trust*

History based trust emerges when one's knowledge of another's trustworthiness is based on previous interactions, where interactional frequency enhances one's predictive accuracy of another's future actions (Lewicki and Bunker, 1996). As a form of trust, one's 'interactional histories' create a memory bank which is drawn upon when engaging in subsequent interactions (Kramer, 1999). History based trust recalls one's prior knowledge of another party; over time, with repeated positive interactions decision making heuristics can arise enabling swifter trust-based decisions. Decision-making heuristics are based on importing one's prior knowledge of a trusted party and rely on a trustee's behavioural predictability (Lewicki and Bunker, 1996). Previous behavioural studies indicate that human behaviour morphs over time from changes in one's trust in another as a result of regular communication and courtship, requiring, "very good research on the potential partner before a relationship is engaged" to assess mutual compatibility (Shapiro et al., 1992, p. 370). Given that history based trust accumulates over time via interactions with another, it is also referred to in the literature as knowledge based trust. For example, in health care, history based trust could manifest if a provider leverages multiple opportunities to demonstrate their ability, benevolence and integrity to a patient, because their perceived trustworthiness is likely to be strengthened at each positive interaction.

### 2.5.3 *Identification Based Trust*

If knowledge based trust has formed, identification based trust may emerge. Identification based trust reflects mutual understanding where each party would feel comfortable acting in place of the other in interpersonal exchanges (Lewicki and Bunker, 1996). Individuals with shared group membership are likely to behave in more trustworthy ways toward in-group members, compared to out-group members (Deutsch, 1958). Identifying with another based on social role similarity increases structural equivalence in work behaviours and attitudes (Shah, 1998). Identification based trust can evolve from value

congruence, proximity in terms of colocation and collective identity or common goals (Shapiro et al., 1992). In this way, mutual understanding over what is required to sustain the relationship develops (Lewicki and Bunker, 1996). In all, these forms of trust are largely based on one's interactions with others and the resulting perceptions of a trustee's trustworthiness. Overall, Lewicki and Bunker's (1996) model generally entails some knowledge or direct experience first being gained to support the first trusting decision (e.g., calculus based trust) to occur, in anticipation of forming knowledge based and identification based trust over time. However, other conceptualisations of trust formation from the literature are based around understanding how individuals trust others for whom they have no prior interaction or much knowledge about. This type of trust relies on impersonal trust indicators, which are also known as the presumptive bases of trust.

## 2.6 **Impersonal or Presumptive Bases of Trust**

Foundations for the impersonal or presumptive bases of trust were laid by Shapiro (1987) and Kramer (1999). Shapiro (1987) suggests that impersonal trust is not embedded in interpersonal relationships between individuals; rather it is based on external factors. Moreover, Vanhala and Ritala (2016) argue that interpersonal trust becomes less relevant in virtual contexts, characterised by depersonalised interactions (Atkinson and Butcher, 2003, p. 287). Thus, "…technological and commercial competence, justice, fair processes and structures, roles, technology and reputation" (Vanhala, Puumalainen, and Blomqvist, 2010, p. 486), may better predict trust from impersonal sources than interpersonal trust mechanisms. McCauley and Kuhnert (1992) suggest that impersonal trust is based on roles, rules and relationships in organisational contexts, whilst Kramer's (1999) conceptualisation of impersonal trust's bases features identity, role, rule, and leader based expectations. The following sub-sections some of the dominant presumptive trust bases.

### 2.6.1 *Third Party Information - Trust Transference*

Trust transference via a third party occurs when an intermediary is a conduit between two individuals who are unknown to each other, but who both trust the intermediary. Trust transferability includes third party interpersonal networks (Burt and Knez, 1996) and is particularly salient where no prior relationship exists between the trustor and trustee. Uzzi (1997) suggests that in exchange based relationships, third parties are 'go-betweens' that mediate new relationships. In such contexts, the role of a third party may facilitate the transfer of trust more readily. As Kramer (1999) notes, if one cannot gain direct insight into

another's trustworthiness, information can be imported from external sources such as trusted third-parties in a presumptive manner. For example, in the context of telehealth, a referring practitioner who has a prior rapport with the patient and specialist, can be used as an external referent through which trust can be transferred between the two parties (provider and patients) who themselves do not know each other.

Trust transference is therefore a proxy assisting trust-based decision making in lieu of one's own direct experience with the trusted party (Ferrin et al., 2006, p. 875). Trustors typically use information from their interactional histories with trustees to inform trustworthiness judgments (Kramer, 1999; Lewicki and Bunker, 1995). Third parties can transfer trust-related information actively through direct communication with the trustee and relaying this to the trustor (Buskens, 2002). However, trust can be transferred indirectly through observing a trusted third party's interactions with a trustee (Ferrin et al., 2006) or inferred from their unspoken but observable trusting behaviours (Coleman, 1990). For example, Lau and Liden (2008) found that co-workers tended to trust each other when the team leader also trusted that member. As such, a trusted third party provides a useful source for the trustee to leverage.

There are challenges to be negotiated in the presence of a third-party. However, a drawback to a third-party presence is inappropriate second-hand knowledge sharing as a result of the intermediary's over familiarity with both the trustor and trustee Moreover there is a risk is that information could only be partially disclosed (Burt and Knez, 1996) or skewed in terms of the trustor's needs (Burt and Knez, 1995). For example, third party trust transference can be problematic if a patient is uncomfortable receiving sensitive diagnoses in front of their primary carer from a telehealth specialist, or when having to describe sensitive personal information that they would not tell the primary carer but must tell the specialist to receive treatment.

### 2.6.2 *Role Based Trust*

Role based trust relates to one's occupation or task related role, and is evaluated separately from their competence, skills or abilities related to that role (Kramer, 1999). As a depersonalised form of trust, it is not the individual that is trusted so much as the role that they occupy or the system within which the role is situated and the role-upholding behaviours of individuals that facilitates presumptive trust (Meyerson et al., 1996). Where barriers to entry for a particular role are perceived to be high, such as with health care specialisations

requiring extensive training and socialisation with high degrees of responsibility, role based trust can be more easily conferred as the processes required to claim the role are perceived to be rigorous (Kramer, 1999). Regular, repeated performance of role-related tasks evidences one's role based competence (Dawes, 1994, cited in Kramer, 1999). Thus, trust varies in response to a trustor's certainty regarding the stability and identity of the trustee's role (Vanhala and Ahteela, 2011). Overall, role based trust is presumptive because it can form in the absence of direct interaction, based on 'role occupancy signals' (Kramer, 1999). Such signals arise from expectations that individuals will aptly perform their role. For example, specialists can leverage their role as a doctor to signal expertise and competence without meeting patients as a means to role credibility.

### 2.6.3 *Rule Based Trust*

Rule based trust provides a set of norms by which individuals can evaluate a trustee's compliance to accepted ways of being and doing (Kramer, 1999). The types of rules that govern depersonalised trust judgements include "…transaction norms, interactional routines, and exchange practices" (Kramer, 1999, p. 579). Rule based trust is self-reinforcing in that individuals are only aware of the norms, routines and practices by which to evaluate the trustworthiness of another party insofar as they are both socialised into the same structure of rules (Kramer, 1999). As such, rule based trust is a socially constructed mechanism that is stable as long as the rules are accepted by the majority (Miller, 1992). Moreover, expectations that others will follow implicit or explicit rules breeds trust (Knez and Camerer, 1994) because rule-based trust engenders "…spontaneous coordination and cooperation" (Kramer, 1999, p. 581). In the absence of clear rules governing how trustees should interact in less familiar service contexts (such as with telehealth compared to traditional in-person health care), trust formation processes can become challenged in the absence of established routines.

### 2.6.4 *Category Based Trust*

Category based trust indicates how presumptive trust is inferred from an individuals' affiliation with or membership to a certain group (Orbell, Dawes and Schwartz-Shea, 1994). Membership in a particular social group provides information that can be inferred by a trustor about a trustee's trustworthiness (Kramer, 1999). These inferences or assumptions are likely to be stronger when the trustor and the trustee share membership in the same social group or category (Brewer, 1981) as a type of in-group bias (Brewer, 1996). In-group bias is based

on the perceived similar positive characteristics that trustee's in the same group would possess (Orbell et al., 1994) shaping the trustor's expectations regarding a trustee's behaviour. In-group bias is a type of lenient preference toward socially similar others and drives intergroup discrimination (Brewer, 1996). In summary, category based trust reflects a trustors' perceptions of the group affiliations that a potential trustee holds. For example, in health care, specialists might be trusted more than primary carers for their diagnostic expertise (hence why their opinion is sought). Similarly, one's category based affiliation to a particular hospital can lend credence to a specialist's status. In addition to category based trust, significant research has emerged around how individuals can quickly come together to achieve tasks in specific time frames with no previous rapport – this is known in the literature as 'swift trust'.

## 2.7 **Swift Trust**

Swift trust is a presumptive type of trust based on depersonalised information (Meyerson et al., 1996) which is obtained by the trustor in the absence of direct interpersonal interaction. It is salient to examine swift trust in instances such as service interactions because frequently providers are faced with customers that they have no previous interactional history but due to the nature of the service exchange must be able to swiftly achieve the service goal to meet their customer's needs. Swift trust is a unique type of trust originating from conceptual work in the context of temporary teams (Meyerson et al., 1996). Swift trust operates by assuming trust initially and then later verifying and adjusting the extent of one's trusting beliefs depending on actual interactions (Meyerson et al., 1996). In this way, swift trust initially operates between individuals with little or no prior interaction and who come together to complete a task in a specific time frame (Meyerson et al., 1996). Swift trust is akin to "…high initial trust [which] has been observed in new face-to-face and virtual work relationships – even in the initial phases before members have a chance to interact" (Jarvenpaa et al., 2004, p. 252). McKnight et al. (1998) note that initial trust levels can be high in contexts of newly formed relationships – such as a provider and customer meeting for the first time. Thus, although high initial trust may form between familiar individuals; swift trust explains how strangers come together and quickly trust each other. As Jarvenpaa and Leidner (1999) explain, "…swift trust deemphasizes the interpersonal dimensions and is based initially on broad categorical social structures and later on action" (p. 794). However, Jarvenpaa and Leidner (1999) find swift trust to be 'fragile' and 'temporal' in the absence of time or opportunity to interact.

One's personal characteristics can also shape swift trust formation. For example, individual traits such as emotional stability, encouragement and creativity are conducive to swift trust (Hyllengren, Larsson, Fors, Sjoberg, Eid and Kjellevold, 2011). Category-based processing and trust propensity influence swift trust in the absence of information to evaluate trustworthiness (Lionel, Denis & Hung, 2009). However, Priem and Nystrom (2014) found that for temporary workgroups, trust shatters very rapidly under high-risk, high-pressure, time-constrained task-based situations over life-and-death matters. Furthermore, Crisp and Jarvenpaa (2013) have shown that normative cues strongly influence swift trust formation, based on performance norms around 'what to do'. Similarly, research on emergency workers in Australia found that role clarity is crucial to swift trust (Curnin, Owen, Paton, Trist and Parsons, 2015). In all, trust and high-risk, high-pressure tasks, in emergent situations are highly representative of health care, let alone when further depersonalised in the form of telehealth interactions at a virtual arms' length distance.

## 2.8 **Problematising Service Separation and Trust: The Case of Telehealth**

The salience of trust in virtual service contexts is paramount. Jarvenpaa et al. (1998) suggest that trust is key to the coordination and functioning of virtual teams. McKnight et al. (1998) suggest high levels of initial trustworthiness and trust are often witnessed in newly formed relationships, such as temporary virtual teams. However, Maruping and Argarwal (2004) argue that "…virtual teams at early stages of team development may require richer media for socialization and trust-building processes" (p. 978). Wilson, Straus and McEvily (2006) found that trust takes longer to form virtually than when face-to-face; however, over time virtual team trust seems comparable to that of face-to-face teams. Nonetheless, some believe that direct in-person contact is "…irreplaceable for both building trust and repairing shattered trust" (Eccles and Nohria, 1992; cited in Jarvenpaa and Leidner, 1999, p.792). This may be because close physical proximity reinforces social similarity and shared values (Latané, Liu, Nowak, Bonevento, and Zheng, 1995) along with shared social norms, experiences through frequent interaction (e.g., Lewis and Weigert, 1985; Mayer et al., 1995). Overall, these trust findings are derived from research in the context of teams. This raises issues for consideration as to the hierarchical structures (or lack thereof) which are commonplace in terms typically represented by one's colleagues and peers. However, in services contexts, the service provider is remunerated by the customer to render a service for which the customer is dependent upon the provider. In the case of health care, the patient is dependent on the doctor and thus highly vulnerable given the information asymmetries

which characterise doctor-patient relationships, as well as the personal nature of the service. As such, examining the nuances of service separation and trust in health care provides a rich context to better understanding telehealth.

Most research on trust in interpersonal relationships has assumed, as Jarvenpaa et al. (1998) explain, that "...trust in a dyadic relationship arises from attributes associated with a trustee and a trustor" (p. 31), such as similarity between individuals (Lim, Sia, Lee, and Benbasat, 2006). Naquin and Paulson (2003) found that virtuality removes "…nonverbal cues, [so] e-mail users may find it challenging (though not impossible) to send and receive affective or relational information, particularly in new relationships" (p. 113). A scarce amount of literature has addressed interpersonal trust at the *virtual* individual level (Lewicki et al., 2006) or from the providers'/trustee's perspective. To ground this discussion in the empirical context explored in this thesis, a brief precis of the telehealth practitioner literature focussed on trust's salience is now provided.

Trust has long been known to be a highly salient factor in the context of health care, and telehealth is no exception. Research from the telehealth practitioner literature indicates that trust's salience varies depending on the perceived risk and information asymmetries of the service context. For example, in health care, online consultations have been studied to understand how a customer's lack of trust decreases their potential to engage in "…exchanges that require divulging sensitive information, such as health issues" (Gummerus, Liljander, Pura and van Riel, 2004, p. 175). A recent quantitative study by Russell, Gillespie, Hartley, Theodoros, Hill and Gray (2015) found that trust in telehealth was the strongest predictor of customer uptake of telehealth in the home for aged patients and is salient to providers' telehealth use (Bradford, Caffery and Smith, 2015; Bradford, Young, Armfield, Herbert, and Smith (2014). Radhakrishnan, Jacelon and Roche (2014) found in interviews with 40 nurses that trust in technology equipment accuracy drove acceptance. Most recently, Van Velsen, Wildevuur, Flierman, Van Schooten, Tabak and Hermens (2016) argued that very little attention had been paid uniquely toward examining trust in telemedicine, finding trust to be a complex nexus differing in its constitution for patients versus clinicians (Van Velson et al., 2016). A scarce amount of research has examined providers' experiences of service separation in virtual service delivery (see Green, Hartley and Gillespie, 2016 for a recent exception). Indeed, a general practitioner highlights from his own experiences with delivering telehealth in Australia that "building trust and capacity of remote clinicians can improve recruitment and retention to traditionally difficult

to fill posts" (McPhee, 2014, p. 826). In a similar vein, Moehr, Schaafsma, Anglin, Pantazi, Grimm and Anglin (2006) found telehealth to be problematic if it does not "…conform to established practice patterns and rely on established trusting collaborative relationships" (p. 755).

In summary, the nexus of services marketing with the specific subset of healthcare services research is salient due to several key distinctions. First, healthcare services exhibit high levels of credence (e.g., see the early work of Darby and Karni, 1973, regarding the disclosure of 'full-information') whereby it is challenging to evaluate the attributes of the service even post-consumption due to the customer's inability to evaluate the merit of the service. As previously highlighted, credence services such as those exhibited in healthcare are characterised by knowledge asymmetries; here, generally the provide is more informed than the customer (hence why their opinion is sought). Knowledge asymmetries render the customer as vulnerable (because they are likely to be ill-equipped or not suitably qualified to deem the service from the provider as competent in the absence of their own extensive medical training). Moreover, healthcare services are unique in that not only do such offerings often represent high criticality encounters (e.g., regarding the provision of services for one's health, wellbeing, prognosis and so on) but also highlights the salience of trust. Combined, these realities highlight the challenges by which providers are to reach customers in the separated service context – let alone noting the applied nature of these realities in the context of healthcare service delivery.

## 2.9 **Chapter Conclusion**

Several limitations in the existing literature have been identified. First, the provider's perspective is paramount; without providers offering separated service delivery, it would not become a (virtual) reality. To date, most research has addressed the customer's perspective rather than that of the provider; for notable exceptions in health care services contexts, see the work of Dagger, Danaher, Sweeney and McColl-Kennedy, 2013; Meyer Goldstein and Ward, 2004. However, these studies did not address technology-infused separated service delivery. Given the prevalence of technology in health care it is both timely and important to progress services marketing understanding in the area of technology infusion by foregrounding the providers' perspective as well as an increased focus on the salience of service separation. Whilst research on customer reactions to service separation (Keh and Pang, 2010) and customer satisfaction in separated service contexts (Paluch and Blut, 2013) have been documented in recent years, a limited understanding of provider's experiences of service separation is available, motivating research question one.

Second, although the trustor has to place trust in the trustee, how providers perceive they can establish trust virtually and the practices used to build trust precipitates its formation. Despite this, as this chapter's review of literature has shown, there is limited research about how service providers experience service separation. This is particularly noticeable for services that were traditionally high-touch and delivered face-to-face and in-person – such as health care – but which are now high tech, rather than high touch. Arguably, much is known about how customers experience what is desired of providers for trust formation, such as exhibiting courteousness and attentiveness (Eisengerich and Bell, 2008) and listening behaviours (Dagger and O'Brien, 2010), and the salience of privacy and security in online service contexts (Fassnacht and Koese, 2006). However, the perspectives of service providers regarding the challenges of trust formation in separated services are surprisingly scarce. Acknowledging the dearth of literature which has addressed how providers perceive they can establish trust via separated services provides motivation for the second research question. Research question two delves deeper into how service providers perceive that they can establish trust via separated services such as telehealth.

Third, given the definition of trust as entailing risk and vulnerability (e.g., Mayer et al., 1995; Rousseau et al., 1998), telehealth is a salient, theoretically rich medium to explore the notion of technology infusion, service separation and trust. However, as noted through the literature review in this chapter, most published research is quantitative, to the neglect of alternative insights which can be gleaned from qualitative empirical material. A recent content analysis between 1990 and 2009 in five top marketing journals (*Journal of the Academy of Marketing Science, Journal of Consumer Research, Journal of Marketing, Journal of Marketing Research,* and *Marketing Science*) revealed a "disturbing downward trend in methods diversity resulting from increasing reliance on two methods, experiments and modelling [sic]" (Davis, Golicic, Boerstler, Choi and Oh, 2013, p. 1245). Although quantitative research addresses 'what' questions, qualitative research helps to address 'how' questions (Jarzabkowski, 2008). As noted at the start of this chapter, if virtuality "…requires trust to make it work" (Jarvenpaa et al., 1998, p. 30) then seeking answers that describe *how* trust is made manifest in separated services from the providers' perspective; and, how they experience service separation, is key. The next chapter outlines the methods used to analyse the data that was collected to answer these research questions.

# 3. **Methods & Data Collection**

> *"…the positivistic paradigm has limited the development of service research…it is vital to understand the paradigmatic elements of ontology, epistemology, and methodology."*
> Tronvoll, Brown, Gremler and Edvardsson, 2011, p. 576

## 3.1 **Chapter Overview**

Following on from the previous chapter's conclusion and emphasis on alternative paradigms and the need for qualitative research to shed light on the nuances of service separation and trust, the opening citation to this chapter highlights the concerns of services marketers in recent years about the overwhelming influx of quantitative, positivistic research. Whilst this alone is not an issue per se, the absence of interpretivistic, qualitative research is problematic. Building on Tronvoll et al.'s (2011) arguments, this chapter will overview the research paradigm, methods and data analysis adopted in this thesis. An interpretivistic approach to collect qualitative empirical material was deemed necessary to answer the following two research questions:

(1) *How do providers experience service separation*? and;

(2) *How do providers perceive they can establish trust via separated services*?

First, I review the ontological and epistemological underpinnings of interpretivist research. Second, I explain the methods used to answer the research questions: phenomenography and ethnographic observation. I then detail the site selection, participant recruitment, and sample characteristics to show how the empirical material was gathered, and make explicit steps necessary to replicate the investigation. Third, to unpack how I applied a practice-based lens to the analysis of the empirical material, the latter half of the chapter is structured around a review of practice theory. I explain the selected school of thought aligned with the work of Schatzki (1996; 2010), before outlining the specific procedures implemented to analyse my empirical material. Overall, exploring provider's practices of service separation provides a rich context to explore the practices clinicians engaged in during telehealth.

## 3.2 **Research Paradigm**

I chose an interpretivist approach because qualitative explorations can offer novel insights by understanding how individuals experience their life-world. Denzin and Lincoln (2003) suggest that the interlocking of ontology, epistemology and methodology reflects a researcher who "…approaches the world with a set of ideas, a framework (theory, ontology) that specifies a set of questions (epistemology) that he or she then examines in specific ways (methodology, analysis)" (p. 30). The chosen ontological and epistemological perspectives adopted invariably shaped the nature of the results and are explained in turn.

### 3.2.1 *Ontology*

As Neuman (2011) explains, "…ontology concerns the issue of what exists, or the fundamental nature of reality" (p. 92). The constructionist[1] (interpretivistic) paradigm assumes a relativist or non-dualist ontology. Non-dualist ontologies assert that the experiencer (i.e. the individual being studied) is inseparable from that which they experience (i.e., usually the focus of study) (Sandberg, 2000). In this thesis, the experiencer is the subject of analysis – the service provider. That which is experienced is service separation. The unit of analysis is the providers' experiences of service separation, as per research question one, and their practices around establishing trust virtually, as per research question two. Adopting a non-dualist ontology allowed me to explore "…the indissoluble relation between what is conceived (the conceived meaning of reality) and how it is conceived (the conceiving acts in which the conceived meaning appears)" (Sandberg, 2000, p. 12).

### 3.2.2 *Epistemology*

If epistemology encompasses knowledge production, it also explains how knowledge comes into being. As Neuman (2011) suggests, "…epistemology is the issue of how we know the world around us or what makes a claim about it true" (p. 93), reflecting "…how we conceptualize [sic] our reality and our images of the world" (Denzin & Lincoln, 2003, p. 18). The constructionist (interpretivistic) research paradigm evokes a subjectivist epistemology, where "…the knower and the respondent cocreate understandings" (Denzin and Lincoln, 2003, p. 35). Despite the parallel between the co-creating roles of the knower (i.e., the service provider, trustee) and the respondent (i.e., the customer, or the trustor), it is

[1] As noted by Sandberg (2000), although social constructivist is the more common term, this hails from the work of Piaget. However, the term social constructionist aligns more with the work of Berger and Luckmann (1966) and their theory of social construction which better aligns with the approach taken in this thesis.

interesting that most research identified in the literature review was couched in objectivist, rather than subjectivist, epistemologies. The latter enables insight because with subjectivist epistemologies, "…it is in our relationship to each other that we produce and reproduce reality" (Sandberg, 2000, p. 32). Hence, a subjectivist epistemology was ideal because it foregrounded the co-created nature of the service as requiring research from the provider's perspective, in addition to what is known from the extant literature from the customer's perspective on service separation.

## 3.3 **Explaining Phenomenography and Ethnographic Observation**

### 3.3.1 *Why Phenomenography?*

As defined by Marton (1981), phenomenography is a researcher's "…description, analysis and understanding of [research participants'] experiences" (p. 177). Hasselgren and Beach (1997) argued that "…the word *phenomenography* has its etymological roots in Greek *phainomenon* (appearance) and *graphein* (description), rendering phenomenography, a description of appearances" (p. 192, *emphasis in original*). As Sandberg (2000) elaborates, "…the primary focus of phenomenography is on the meaning structure of lived experience – that is, the meaning an aspect of reality takes on for the people studied" (p. 12). 'Lived experience' in phenomenography reflects the qualitatively different ways research participants experience and create meaning from the world around them (Ashworth and Lucas, 2000) traced "…back to the phenomenological idea of the life-world" (Schembri and Sandberg, 2011, p. 168). Lived experiences, or 'categories of description' (Svensson, 1997) are globalised 'understandings' of knowing and being. However, interviewees must not just 'know' about the phenomenon, because understanding reflects "…what something means to an individual" (Lamb, Sandberg and Liesch, 2011, p. 676), thus gaining insight into how individuals interpret a phenomenon is key.

According to Marton (1981), four features characterise phenomenographic research. First, researchers seek maximum variation in the phenomenon or phenomena which is being studied. Next is a focus on one's own experiences, rather than on oneself. Third, their lived experiences are empirically organised in categories of description. Last, these categories of description represent qualitative differences in understanding that are mapped onto an outcome space. The outcome space is a two-dimensional graph representing qualitative differences between understandings. As Åkerlind (2005) explains, the outcome space makes clear "…relations between different ways of experiencing the one phenomenon" (p.

322). I followed Marton and Booth's (1997) strategy to develop the outcomes space. First, each category was qualitatively distinct. Second, the categories were logically related. Third, the outcomes were parsimonious with variance across the smallest number of categories possible (Marton and Booth, 1997).

### 3.3.2 *Applying Phenomenography*

Seeking maximum variation is crucial to phenomenography. Variation is a key source of qualitative difference. Seeking maximum variation in providers' understandings of service separation was guided by reviewing phenomenographic studies. The results indicated that theoretical saturation occurred at around 20 participants (Sandberg, 2000; Schembri and Sandberg, 2002; 2011; Lamb et al., 2011; Wright et al., 2007). As per Table 3, sample size needs for theoretical saturation are modest; also, theoretical saturation has occurred in existing phenomenographic studies at around five participants less than the total sample.

**TABLE 2. SAMPLE SIZES IN PHENOMENOGRAPHIC STUDIES IN MANAGEMENT AND MARKETING**

| 1st Author | Year | Field | Type | Topic | Sample Size; Saturation |
|---|---|---|---|---|---|
| Sandberg | 2000 | MGMT | Empirical | Worker Competence | 20 Optimizers;15 |
| Schembri | 2002 | MKTG | Conceptual | Service Quality | N/R; 20 |
| Wright | 2007 | MGMT | Empirical | PhD Supervision | 20 Supervisors; 20 |
| Lamb | 2011 | MGMT | Empirical | Internationalisation | 21 Managers; 15-25 |
| Schembri | 2011 | MKTG | Empirical | Service Quality | N/R |

Notes: MGMT = Management; MKTG = Marketing; N/R = Sample Size 'Not Reported'

I collected empirical material until theoretical saturation occurred. I also reviewed sources of variance which could shape different interpretations of each interviewee's life-world. This facilitated the creation of 'categories of description' reflecting collective summaries of the interviewee responses. This derives from asking open-ended interview questions. Doing so meant that although interviewees engaged in a monologic recall of their experiences initially, this evolved into a dialogic conversation between each interviewee and I as the interview progressed. Interview questions included: *Can you describe your experience of X? What does it mean to do X?* These were followed by prompts: *Can you tell me more?* For reference, see the interview protocol in Appendix A.

### 3.3.3 *Why Ethnographic Observation?*

Hammersley and Atkinson (1995) define ethnography as "…participating, overtly, or covertly, in people's daily lives for an extended period of time, watching what happens,

listening to what is said, asking questions – in fact, collecting whatever data are available to throw light on the issues that are focus of the research" (p. 1). Ethnographic observations in the field support the researcher's 'thick description' (Geertz, 1973) of what was observed in narrative detail. For Watson (2011), ethnography is more than writing; because good writing requires close observation and involvement with research participants in their life-world. The objective is to make theoretical linkages between what is observed and what is experienced by participants in the field. With observational research requiring deep immersion in the field (Jarzabkowski Bednarek, and Lê, 2014), a first-order perspective is taken. The first-order perspective allowed me to describe through my own eyes what occurred. The first-order perspective is necessarily subjective because not only is it couched within my own interpretation of a given phenomenon on a certain day, time and place when the observation occurs, but is also coloured by my 'pre-understanding' of the phenomenon of interest. Bate (1997) argued that when ethnographers must collect data themselves in the field and 'be there' in the moment.

### 3.3.4 *Applying Ethnographic Observations*

My participant-observation was overt, requiring access to telehealth sites with providers 'in action' delivering telehealth clinics. As a researcher in the field, developing relationships through 'culture member acceptance' (Neyland, 2008) is key. I fostered culture member acceptance through the providers' acceptance of my presence in the clinic. Participants introduced me as a 'researcher' or 'colleague' to off-site stakeholders (e.g., GPs, patients) and engaged me informally in-between telehealth consultations. This was extremely useful as a layperson to gain a 'fly-on-the-wall' insight into my interviewees' life-world. It was useful that I was not clinically trained as I came to the topic with some distance, and was able to identify providers' well-practiced, routinized tasks that seemed theoretically salient for the thesis, such as watching providers resolve technological glitches during clinics. In the field, I observed the whole clinic process including set up. I felt that some interviewees perceived these to be mundane because I was asked 'are you sure you want to come that early, I'll just be 'setting up'. However, what does setting up telehealth actually involve?

Not all observational research has the luxury to be completed over lengthy time periods. Researchers have spent, time in the field from one week (Sandberg, 2000) to six months (Schembri and Sandberg, 2011). In the former study, the week spent on site aided the researcher to build a phenomenographic community of interpretation with participants

before embarking on phenomenographic interviews (Apel, 1972). In the latter study, the researcher gained detailed ethnographic observations (Schembri and Sandberg, 2011) across a year to increase familiarity with their interviewees' social realities. I employed techniques such as spending time on site and informally with participants to aid the community of interpretation (Apel, 1972) and shared understanding of my role in the workplace. This included participating in the observed service providers' brown-bag lunch meetings where latest developments in telehealth were discussed, and presenting my findings alongside colleagues and co-authors on several occasions. This was important because I was from a different life-world to my interviewees. As such, proactive field immersion helped me to build an interview protocol that best reflected my interviewee's realities. Whilst the questions were broad, I improved my contextual knowledge of salient clinical terminology, operating systems, and day-to-day routines. Overall, the observations improved my interviewing skills as I grew increasingly familiar with the telehealth context.

### 3.3.5 *Combining Phenomenography and Ethnographic Observation*

Using two methods served three primary purposes. First, ethnographic observation allows researchers to gain field access for in-depth participant-observations, which phenomenographic interviewing alone does not necessarily facilitate. In instances where research is time constrained, such as with a doctoral thesis, ethnographic observation can facilitate rich description in tandem with phenomenographic interviewing techniques (see Schembri and Sandberg, 2011). Second, supplementing the primary method of phenomenography with observation facilitates the collection of both socially constructed empirical material (i.e., artificial data) alongside relatively 'naturally' occurring (i.e., comparatively unmanufactured) data. Third, the two methods allowed me to gain first-order and second-order perspectives on the theoretical insights derived for this thesis.

## 3.4 **Data Collection**

### 3.4.1 *Site Selection*

Empirical material in the form of interviews with specialist clinicians and observations of telehealth clinics was sourced from the Australian health care system in Queensland during 2014. Two public hospitals were initially selected as source sites for interviews key providers of telehealth. These sites are the busiest telehealth centres Australia-wide in terms of number of consultations or 'health care traffic' (Smith and Gray, 2009).

### 3.4.2 *Ethical Clearance*

Ethical clearance was a multi-phase process involving the University of Queensland and site-specific clearance at research sites. Before collecting data, individuals consented via email their willingness to participate after being informed about the study and its purpose. A copy of interview questions was provided before the interview at the request of the interviewee. For interviewees' with clinics suitable for observation, additional consent was sought from providers who themselves consulted each patient on the researcher's presence.

### 3.4.3 *Participant Recruitment and Sample Characteristics*

The four selection criteria used for participant recruitment stipulated that providers were:

1. using or had previously used telehealth in one or more of the following modalities - store-and-forward email, video conferencing, and/or robotic telepresence (frequency/recency exempted); and,
2. identified as a telehealth specialist (medical or allied health); and,
3. based in Brisbane, Queensland (for data collection feasability); and
4. not undergraduate medical students.

With the exception of two interviewees, all others frequently used telehealth. Frequent use in this context is considered to be weekly to monthly consults with ongoing patients and new referrals, depending on the nature of the speciality. For example, orthopaedic clinics may require periodic reviews as bones heal, whilst care for patients with diabetes may require more frequent reviews. Since full time clinical work is a different experience for undegraduate medical students rather than medical graduates (including registrars), I chose to exclude undergraduate medical students from the study. Registrars were nearing completion of their postgraduate specialist training and were already qualified physicians. I focussed on providers' experiences but acknowledge that different stakeholders are involved in telehealth, such as nurses and nurse educators (e.g., for diabetes clinics), radiographers (for orthopaedic fracture clinics), coordinators (e.g., who administer clinic timetabling and patient record management), and other affiliated staff. However, these individuals are not tasked with the primary decision-making that effects patient care. I recruited individuals based on their experiences with at least one technology; some had used combinations of technology.

The sample evolved over time until theoretical saturation occurred. Theoretical saturation occurs when an experience emerges as theoretically salient across multiple descriptions of service separation. Individuals were selectively brought into the sample based on maximising variance in a continuous analysis. I evaluated the experiences gleaned after each interview to determine when theoretical saturation occurred. Consistent with sampling approaches of previous phenomenographies (e.g., Sandberg, 2000; Schembri, 2008), snowball sampling was used because it enabled access to other providers. Providers were sought across diverse medical fields spanning geriatrics, endocrinology, dermatology, paediatrics, physiotherapy and technologies spanning robotic surgery, video conferencing and store-and-forward email. In all, 19 different medical fields were sourced, maximising theoretical variance in service separation as seen in Table 3. Because telehealth functions across multiple technologies, excepting a few cases (e.g., dermatology, speech therapy) video conferencing represented the largest share of telehealth activity. Thus, early on in the participant recruitment process I realised a broader range of technology platforms such as email store-and-forward and robotic telepresence surgery was necessary. Other criteria included maximising naturally occuring variance in terms of: gender, age, level of experience (registrar to professor), level of telehealth familiarity (novice to experienced), length of time using telehealth (months to years), speciality (adult and paediatric care), and technology.

Theoretical saturation emerged initially at around 17-20 individuals. However, to ensure this was not an artefact of the research process, I kept collecting interview data. Some additional perspectives were revealed; however this was unclear at the time of data collection (I realised this during data analysis). At 30 interviews, secondary analysis revealed repetition of experiences. Three confirmatory interviews brought the total recruited sample to N=33 telehealth specialists as shown in Table 3. Overall, of the 33 interviewees, sourced from public and private practice, 21 were male (63.6%). In terms of clinical speciality, 9 clinicians were from allied health (27.2%) with the balance (24, or 72.7%) being medical specialists. In terms of experience, there were registrars, early career (less than ten years clinical practice) and advanced practitioners, with several holding positions of leadership in their fields. In terms of technology, 15 predominantly used video conferencing, 3 predominantly used robotic telepresence, and 4 predominantly used store-and-forward email. The remainder had used multiple telehealth technologies.

### 3.4.4 *Collecting Phenomenographic Material: Interviews*

Semi-structured interviews were conducted during 2014. At the start of each interview, if I had not previously met the clinician, I introduced myself, and verbally re-affirmed their consent. I asked a few open-ended questions enabling me to learn about telehealth and their speciality. I then probed interviewee's for deeper levels of understanding by seeking further clarification. However, I let interviewees speak as much as possible. This helped to minimise any constraints I might impose in terms of interview style. It is important in phenomenography to probe the phenomenon itself rather than participants. This approach was insightful when inquiring about repeated routinised interactions (e.g., how to 'establish' trust). Asking participants to reflect on their experiences with telehealth also shed detail on the minutiae of service separation practices that might otherwise be overlooked. The interviewees responded well to directed reflection on specific instances under what were mostly time-precious interview sessions. As highly busy individuals, I made logistical decisions to reach the most respondents, trying to minimise any time impost on their voluntary and unpaid participation. I travelled to interviewees' work sites to facilitate participation. Moreover, because the sample were themselves all highly skilled interviewers (all doctors interview patients and read others on a daily basis) I needed to employ higher order cognitive questioning tactics to retrieve meaningful experiences from interviewees and to demonstrate to them the value of the research. I conducted and then transcribed all interviews myself as part of an initial data familiarisation process. Each interview was audio recorded, lasting an average of 33 minutes within a range of 18 minutes to 59 minutes.

## TABLE 3. SUMMARY OF VARIANCE IN INTERVIEW SAMPLE CHARACTERISTICS

| Field Site | Clinical Discipline | Number of Interviewees | Technology Infused into the Separated Service | Separated Services Offered Virtually via Technology | On-Site Actors | Off-Site Actors | Off-Site Location |
|---|---|---|---|---|---|---|---|
| 1 | Geriatrics | 4 | Teleconferencing | - Dementia Clinic<br>- Falls/Neurological Assessment<br>- General Geriatric Care | - Geriatrician | - Patient<br>- Nurse<br>- Doctor | Residential Aged Care Facility; Rural Hospital |
| 1 | Endocrinology | 2 | Teleconferencing | - Diabetes Clinic<br>- General Endocrinology | - Endocrinologist | - Patient<br>- Nurse | Rural Hospital |
| 1, 2 | Surgery | 3 | Robotic Telepresence | - Surgery<br>- Surgery | - Surgeon/s<br>- Anaesthetist | - Patient<br>- Surgeon | Same Hospital |
| 1, 2 | Dermatology | 4 | Store-and-Forward Email<br>Teleconferencing | - Acute rashes; Allergy; Acne<br>- Skin cancers/lesions<br>- General dermatology | - Dermatologist | - GP<br>- Patient | Rural/Regional Hospitals |
| 1 | Speech Pathology | 4 | Teleconferencing<br>Store-and-Forward Email | - Head and Neck Cancer Care<br>- Speech Therapy | - Therapist | - Patient<br>- Doctor | Rural Hospital |
| 1 | Physiotherapy | 2 | Teleconferencing | - Rehabilitation<br>- General Physiotherapy | - Physiotherapist | - Patient<br>- Carer | Patient's Home |
| 1 | Gastroenterology & Hepatology | 1 | Teleconferencing | - General Gastroenterology | - Gastroenterologist | - Patient<br>- Officer | Hospital |
| 1 | Orthopaedic Surgery | 1 | Teleconferencing<br>Store-and-Forward Email | - Fracture Clinic | - Orthopaedic Surgeon<br>- Radiologist | - Patient<br>- Doctor<br>- Nurse | Rural Hospital |
| 1 | Spinal Rehabilitation | 1 | Teleconferencing | - Spinal Cord Injury Treatment | - Rehabilitation Physician | - Patient<br>- Carer | Rural Hospital |
| 1 | Paediatric Rheumatology | 1 | Teleconferencing | - Arthritis<br>- General Rheumatology | - Rheumatologist | - Patient<br>- Parent/s | Rural Hospital |
| 2 | Gynaecology | 1 | Teleconferencing | - Fertility Treatment<br>- Obstetrics/Pregnancy Care<br>- General Gynaecology | - Gynaecologist | - Patient<br>- Partner | GP's Office |
| 2 | Cardiology | 1 | Teleconferencing<br>Store-and-Forward | - Lipid Management<br>- Cardiovascular Disease<br>- Hypertension | - Cardiologist | - Patient<br>- GP | GP's Office; Rural Hospital |
| 2 | Perioperative Medicine | 2 | Teleconferencing | - Perioperative Assessment<br>- Pre/Post-Surgical Care | - Perioperative Doctor; Physician | - Patient<br>- GP | GP's Office; Rural Hospital |
| 2 | Allergy & Immunology | 1 | Teleconferencing | - Immunopathology<br>- Allergy Testing | - Immunologist | - Patient<br>- GP | GP's Office |
| 2 | Neurology | 1 | Teleconferencing | - Neurology<br>- Neuromuscular Disorders | - Neurologist | - Patient<br>- Carer | GP's Office; Rural Hospital |
| 2 | Otolaryngology; ENT | 1 | Teleconferencing | - General Ear, Nose, Throat Treatment | - ENT Surgeon | - Patient | Rural Hospital |
| 2 | Psychology | 1 | Telephone<br>Teleconferencing | - Counselling<br>- General Clinical Psychology | - Psychologist | - Patient | GP's Office; Patient's Home |
| 2 | Pharmacy | 1 | Telephone/conferencing | - Virtual scripts | - Pharmacist | - Patient | Rural Pharmacy |
| 2 | General Practice | 1 | Teleconferencing<br>Robotic Telepresence | - Emergency Triage<br>- Remote Resuscitation | - General Practitioner | - Patient<br>- ED's | Rural Hospital |

Notes: 1 = Public Sector Respondent; 2 = Private Sector Respondent

### 3.4.5 *Collecting Ethnographic Material: Observations*

Ethnographic observations entailed shadowing providers during live telehealth clinics. Observations ran concurrent to the interview process. Interviewees currently practicing telehealth out of physical hospital sites were asked whether informal observations would be permissable. The observations sensitised me to the challenges faced by providers using telehealth and who were experiencing service separation. I wrote reflective field notes in line with Nicolini's (2011) approach to telehealth research. This included information on the behaviours and example dialogue used by providers, their gestures and facial expressions, and how adaptions to the service delivery were required in the absence of physical touch. In total, I observed eight telehealth clinics, with each clinic lasting between three to five hours and a total of approximately 35-40 hours of observational field work. For each observation, the on-site location remained constant (i.e., at the hospital based telehealth clinic); however, the off-site location continually changed depending upon where was being 'dialled'.

Over time, collecting observational data enhanced my appreciation of participant descriptions regarding the nuances of telehealth service interactions. For example, a doctor might comment to the researcher 'See, that is what I was referring to by x' after a particular service interaction had ceased. These interactions between me and some of my research participants also enhanced the ongoing community of shared interpretation. Table 4 summarises key sources of variance captured during the observations. Variance stemmed from the clinic type (paediatric versus adult), and clinical speciality (ranging from orthopaedics, geriatrics, allied health and endocrinology). Providers ranged from novice registrars to experienced practitioners, with a mix of patients treated virtually for the first time versus chronic patients presenting for follow-up appointments. The term 'on-site actors' refers to individuals present with myself during the observation. The term 'off-site actors' refers to individuals located in a different geographical location connected via telehealth.

**TABLE 4. SUMMARY OF VARIANCE IN ETHNOGRAPHIC OBSERVATIONS**

| Number of Clinics Observed | On-Site Actors[a] | Off-Site Actors[b] | Indicative Service Activities Observed Virtually Per Clinic |
|---|---|---|---|
| 2 | - Specialist | - Patient | - Check blood sugar levels (diabetic patients)<br>- Blood test results and medication review<br>- Discuss new symptoms and disease management plan/s |
| 1 | - Specialist | - General Practitioner | - Remote diagnosis of 3rd party clinical symptoms<br>- Image sent via email. Dermatologist does not often meet patient. |
| 1 | - Allied Health Personnel | - Patient + Family/Carer | - Perform physical rehabilitation exercises together<br>- In-home clinical support for multiple immobile patients (telehomecare) simultaneously<br>- Social support for carers/patients to ask questions of other carers |
| 2 | - Specialist<br>- Registrar | - Patient<br>*Ward nurse may be present | - Review onset/progress of disease (e.g., dementia)<br>- Falls management/care plan<br>- Medication review; blood test results review |
| 1 | - Specialist<br>- Radiologist<br>- Nurse | - Patient<br>- Registrar/Locum<br>- Trainee Students | - Physical examination of progress<br>- Plan for surgery/review of surgical outcome<br>- Assessment of x-rays and other radiology results<br>- Management plan |
| 3 | - Surgeon<br>- Telecoordinator<br>- Allied Health<br>- Specialists | - Paediatric Patient<br>- Patients' Parents<br>- Nurse/GP locum<br>- Physiotherapist | - Check patient physically; take patient measurements<br>- Review management plan post-acute episode<br>- Prepare for additional surgery<br>- Request new equipment for patient management<br>- Review patient medications<br>- Assess patient mobility |

Notes

[a] On-site actors typically produce the service from a large public hospital

[b] Off-site actors typically consume the service from another rural off-site hospital, aged care facility, or from their private residences.

## 3.5 **Practice Theory as a Lens for the Data Analysis**

### 3.5.1 *What is Practice Theory?*

Practice theory focuses on individuals' daily activities (Sandberg and Tsoukas, 2015), providing a means to generate theoretically interesting insights. This occurs through questioning seemingly mundane tasks underlying complex phenomena. The 'practice-turn' (e.g., Sandberg and Dall'Alba, 2009; Schatzki, 1996; Nicolini, 2011) is a primary way of making the implicit, explicit. Key contributions to understanding practice include Wittgenstein with rule-following, Heidegger with entwinement, and Schatzki grounded in the earlier work of Heidegger and Wittgenstein (Sandberg and Tsoukas, 2015). However, what utility does a practice-based perspective have to inform how providers experience service separation in telehealth, and how they perceive that they can establish trust via separated telehealth services? As Nicolini, a well-known management scholar researching telehealth explains "…practices perform meaning and support identity, so that the question of what people and things are depends upon the practices in which they are involved" (Wittgenstein, 1953, cited in Nicolini, 2007, p. 893).

### 3.5.2 *Schatzki's Practice-Based Perspective*

Schatzki's work (2010) focuses on identifying an "…open, organized [sic] array of doings and sayings" (p. 51). Schatzki outlines social practices vis-à-vis Wittgensteinian's understanding of human activity as the site where "…the realms of sociality and individual mentality/activity are at once organized and linked" (Schatzki, 1996, p. 13). Schatzki (1996) outlines three aspects of practice. This includes learning through task repetition via temporally and spatially separated doings and sayings, which are governed by rules and "…teleoaffective structure embracing ends, projects, tasks, purposes, beliefs, emotions and moods" (89). Teleoaffective structures lead to an end goal "…oriented toward ends: the teleological character of activity consists in people performing actions for ends…what people do is what makes sense to them to do" (2010, p. xi-xiii). Schatzki (2010) suggests that social practices are defined in four ways - I provide the original wording to avoid misrepresentation:

> "... (1) *action understandings*… to perform an action that helps compose the practice, knowing how to recognize this action, and…how to respond to it;
> (2) *rules*…. formulated directives, admonishments, orders, and instructions to perform or leave off certain actions;

(3) *a teleoaffective structure*…acceptable or prescribed ends…to carry out those ends…[and] possibly, accepted or prescribed emotions and moods; and
(4) *general understandings* about matters germane to the practice…shaped by roles or identities"

(Schatzki, 2010, p. 51).

A central tenet of Schatzki's work is spatiality and temporality (1996; 2010). Given service separation's definition through spatial and/or temporal decoupling of production from consumption, practice-based sensitising concepts of nearness and farness are useful. Spatiality and temporality Schatzki (2010) determines one's ability to 'be' in their lifeworld. Schatzki (2010) uses Heidegger to pose that spatiality encompasses nearness and farness, versus place and region. Applying this to telehealth juxtaposes the nearness of a technical piece of equipment against the distance of the off-site patient. For example, in telehealth, the clinicians' image is portrayed on-screen so that they are being-in the life-world of telehealth, but they are not 'being in' the technology physically. Orientation and distance also reflect being-in-the-world. Orientation encompasses how individuals use equipment to achieve goals. For example, if a clinician is motivated by an end goal as part of a teleoaffective structure to cure a patient, they might dial the patient, establish a connection, and operate telehealth technology. These are equipment-using actions orienting people within the (virtual) life-world of telehealth. Similarly, if equipment-using actions are unable to be enacted, if the technology fails or cannot be operated, then the regional location of the equipment loses meaning. Thus, distance suggests "…people's activities so unfold that entities that were far are brought near" (Schatzki, 2010, p. 31). In telehealth for example this occurs during physical examination where zooming in to observe patients draws them virtually rather than physically 'nearer'.

### 3.5.3 *Analysing Interviews & Observations through a Practice-Based Lens*

One's 'doings and sayings' can be linked spatially and temporally. As noted, together they reflect four domains: action understandings, rules, teleoaffective structures, and general understandings (Schatzki, 2010). Through observing telehealth clinics, I noted firsthand the socially constructed 'doings and sayings' (Schatzki, 2010) enacted by providers. Table 5 shows how I used interviews and observations in tandem through a practice-based lens.

**TABLE 5. APPLYING SCHATZKI'S PRACTICE DIMENSIONS TO DATA ANALYSIS**

| Practice Dimension | Interviews | Observations |
|---|---|---|
| 1. **Action Understandings**<br><br>*Knowing how to perform actions* | • Asking interviewees how they know how to perform actions in relation to various clinical tasks<br>• Assessing how clinical knowledge comes into being for telehealth across specialties | • Observing the tasks performed by clinicians during telehealth service delivery<br>• Reflecting on observations indicating actions and tasks that clinicians undertake |
| 2. **Rules**<br><br>*Knowing what to do* | • Looking for interview data on the formal versus informal rules of medicine and differences in clinical speciality/technology<br>• Looking for when rules are broken (e.g., using telehealth does not enable physical exam) | • Observing differences across practitioners, across clinical fields, and across telehealth technologies gives some qualitative sense of sources of variance for how individuals come to know what to do |
| 3. **Teleoaffective Structures**<br><br>*Emotions, moods and means to achieve ends* | • Searching for instances of emotional or mood changes during the interview (body language and non-verbals) and subsequently in the vocal tone of the audio recording and finally the verbatim transcript<br>• Looking for how telehealth delivery is achieved and whether clinicians' emotions and moods influence trust perceptions | • Observing clinicians' emotions and moods, particularly in relation to the phenomena for research question one (service separation experiences) and research question two (perceptions of trust)<br>• Viewing technology as a 'means to an end' for health care, and sources of variance from video, store-and-forward and robotic telepresence use |
| 4. **General Understandings**<br><br>*Related to the practice* | • Developing categories of description from the phenomenographic interview material<br>• Establishing qualitative differences in the reading and categorising of interviewees' understandings of service separation | • Watching participant behaviours during the delivery of health care services via telehealth<br>• Understanding qualitative differences and sources of variance in the clinical practice of telehealth<br>• Acknowledging video conferencing as the main technology available for observational purposes |

Whilst analysing the data, I made several initial categorisations. This required searching for statements within transcripts that were similar across and within each understanding of service separation. A deeper analysis articulated *how* service separation shapes providers' lived experiences; and, *how* a provider's perceived ability to establish trust facilitates (or hinders) service separation. I returned to the data several times for more detail, re-reading the transcripts in no particular order, focussing on the meanings of highlighted statements. This is consistent with the phenomenological approach advocated by Husserl (1970) where

the meaning of part of a transcript or 'lived moment' is inextricably related to the whole. Some re-grouping of participant's lived experiences and conceptions resulted from this process, to ensure that maximum variance was reflected in the expressed understandings. Finally, my interpretations were cross-checked by myself and my supervisors, and then presented to others formally and informally. To test the robustness and stability of interpretations I continued this process until the most faithful interpretation was generated. Revisiting the empirical material several times and re-organising my initial takes on the data generated richer theoretical insights. Once theoretical saturation occurred, I reflected on validity and reliability using Sandberg's (2005) criteria: (1) communicative validity, (2) pragmatic validity, (3) transgressive validity; and, (4) reliability as interpretive awareness.

## 3.6 **Ensuring Validity and Reliability in the Data Analysis**

### 3.6.1 *Communicative Validity*

To maximise communcative validity, open and honest communication is required. I took time to develop a rapport with potential participants. I immersed myself in symposia, conferences and workshops at the primary field site. Once I established a rapport I was introduced to potential participants, which broadened my network for the collection of empirical material. I built a dialogue, rather than monologue, with interviewees and after completing the interviews, I faithfully represented each participant's lived experiences. Early results were shown during 2014; in 2015, I presented polished findings at a telehealth conference and other formal forums. I received helpful feedback to improve the analysis. Imposing a practice-based lens on the empirical material illuminated providers' doings and sayings.

### 3.6.2 *Pragmatic Validity*

Pragmatic validity requires researchers to question the truthfulness of statements made by interviewees. This includes assessing within a single interview the stability of an individuals' reported experiences. As Sandberg (2005) suggests, interview statements should not necessarily be accepted at face value; but should be reflexively interrogated (Alvesson, 2003). Thus, Säljö's (1997) commentary regarding the distinction between what individuals say versus the extent this reflects their lived experience was key. I asked interviewees for concrete examples of what they were describing, and prompted them to recall recent, top-of-mind examples, to discourage falsified memories. I used

misrepresentation to evaluate the consistency of claims, whilst maintaining communicative validity.

### 3.6.3 *Transgressive Validity*

Although it helped that I was not clinically trained nor a member of the telehealth community, as time progressed I built communicative validty as a culture member. This required me to maintain an objective stance to ensure my questioning was authentic. I looked for instances in the transcripts that disconfirmed my initial categorisations and emergent understandings. This requiring regrouping some of the interviewee statements. I also read each statement individually and within the context of its transcript. There was also a predisposition in the data toward a male oriented perspective, given the higher presence of males as opposed to females in medicine - particularly certain specialties. However, through my theoretical sampling process I ensured variance in gender as best as possible; moreover, after the analysis females were present across each of the emergent understandings.

### 3.6.4 *Reliability as Interpretive Awareness*

I ensured that my interpretations of the empirical material were as faithful to the reported experiences of indivuals as possible. I first analysed the empirical material by myself, and subsequently introduced my emergent findings to my supervisors and other research colleagues who encouraged me to see and interpret my data in different ways. This involved dropping an initial theoretical framework that I was imposing on the data (construal level theory) in favour of the practice-based approach in line with the work of Schatzki (1996; 2010) which provided a meta-theoretical lens to examine the practices of clinicians during telehealth. I kept an open mind and treated all statements with equal importance to avoid over- or under-privileging any theoretically salient points and to the let the data ‘speak’.

## 3.7 **Chapter Conclusion**

This chapter has reviewed in detail the research design underpinning the thesis, including an outline of the data collection and analysis procedures that were implemented. To reiterate, a phenomenological approach to understanding service separation was adopted, in line with an interpretivist research paradigm and a non-dualist ontological perspective. Two complementary methods – namely, phenomenography and ethnographic observation

– were implemented to seek answers to the overarching research questions focussed on understanding:

1) *How service providers experience service separation;* and,

2) *How service providers perceive they can establish trust via separated services*.

In the next chapter, I provide an overview of the first results chapter. In doing so I provide a narrative depiction of the world of telehealth as a way to provide a context to what the concept of 'telehealth' actually is. This is presented for each technology to gain deeper insights into the nuances of technology infusion to separate the service delivery process. Then, I outline the specific tasks and activities that are constituted as part of the telehealth service delivery process. Identifying these tasks satisfies the first and second of Schatzki's (1996; 2010) four characteristics of a practice-based perspective: knowing what to do (actions, or activities) and how to do it (rules governing the behaviours around these actions). Last, I support the above endeavours by providing empirical material in the form of quotes and ethnographic vignettes to justify how I elicited these activities and their associated tasks as a way to frame the analysis.

# 4. **Service Separation Activities Constituting Telehealth**

> Practices *are "…a **temporally** unfolding and **spatially** dispersed nexus of doings and sayings"*.
>
> (Schatzki, 1996, p. 89, emphasis added).

## 4.1 **Chapter Overview**

By applying a practice-based lens, In this chapter I elucidate specific activities constituting telehealth. As highlighted in the opening citation by Schatzki (1996), without understanding what clinicians 'do' in telehealth, it is difficult to derive meaning from what clinicians 'say' in relation to their experiences of service separation. Hence, this chapter identifies activities performed by clinicians when delivering telehealth. To achieve this, I first outline the nuances of typical telehealth consultations based on the most common technology used, video conferencing, followed by store-and-forward email and robotic telepresence surgery. This leads to the identification of five activities enacted by providers which informs a process model of separated service delivery in telehealth.

## 4.2 **Narrating Telehealth**

In the following sub-sections I 'narrate' telehealth across three different technologies used to bring the reader 'inside' the world of the interviewees. Doing so allows me to explain what service separation looks, feels and seems like to providers. Vignettes marked 'observation summary' identify my own observations; those marked 'experiential vignette reported' are my summary of a providers' reflection on their own experiences.

### 4.2.1 *Account 1: Telehealth Through Video Conferencing*

*The clinician sits down in the sound proof telehealth consultation room, which contains a single desk, a screen and video conferencing equipment. Scrolling through a digital phone book of numbers, the clinician selects the off-site location and dials out. The system 'rings'; however, the call times out and the clinician has to try re-dialling. This time, there is an answer. A nurse and a patient appear on-screen, already seated, ready for the consult. The clinician has a limited view of half of the consultation room, and sees the patient on-screen from the waist upward. Halfway through the consultation, the clinician asks the nurse to examine the patient. However, the nurse is not a specialist. The clinician seems unsure whether the exam*

*and reported results are as rigorously conducted if they themselves had 'been there'. Halfway through the exam there is interference with the fidelity of the connection fragmenting images of the patient on-screen. This requires the clinician to repeat what they have said, and some miscommunication occurs from the patient mishearing some of the clinicians' words via the poor audio connection. Moreover, it seems difficult to gain eye contact with the patient given the eye line mismatch. It also seems to be challenging for the clinician to read the patient's body language"* **[Observation Summary: i27M]**

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Video conferencing is one of the most common forms of telehealth service delivery. In such instances, clinicians interact with patients using synchronous communication technologies to deliver health care at a distance. Augestad and Lindsetmo (2009) define video conferencing as "…a real-time, live, interactive program in which one set of participants are at one or more locations and the other set of participants are at another location. The VC [i.e., video conferencing] permits interaction, including audio and/or video, and possibly other modalities, between at least two sites" (p. 1356). In this way, there is spatial separation between individuals because they are not physically co-located. Moreover, there is no temporal separation since video conferencing is synchronous. However, if the connection is poor, or the audio or visual quality is compromised, then the experience of temporal separation (i.e., a time-lag) due to technology failure may be experienced by the clinician. This can affect their ability to deliver the health care service virtually. This was indeed the experience reported by the following interviewee:

"*Frequently something goes wrong. We recently had an upgrade in the system. It is automated so that you identify [location anonymised]. You press a touch pad and that should make the connection. Some of the phone numbers entered [into the system] are incorrect. Each week we have to find the phone numbers. Usually what we do is we phone the day or morning before we see the patients and…tell them the list of patients…they are called to say that we are about to start, but the patient is [not] there…or I am not there. Or, we phone up before we are about to start…but no one will answer at the other end. Then we call them back - and they answer - but it is not smooth. Occasionally we lose picture or sound and do it by telephone."* **[i3M]**

The ability for video conferencing to work well hinges on the efficacy of the technology. If the connection is poor, then difficulties are experienced. Moreover, there are additional

logistics bounded around getting all parties to the telehealth consultation organised at the same time. However, if the technology and the logistics of separating service production from consumption do work, service separation can be transformative:

> "*…we have video links set up in our emergency department, so that in remote locations where there are no physicians…if there is a patient, they can call emergency and be triaged in the same way as a face-to-face patient… usually we link up by video…[because] we have better control of the camera for instantaneous triage of acute conditions. We have been leading resuscitation remotely, so if any patient has a cardiac arrest in any of the communities we lead the resuscitation from our emergency room to a distant site. We have been saving lives that way. Without this, the patient would die - by the time we reach them, it would be too late."* **[i13M]**

Immediately providing emergency services at a physical distance outweighs the challenges of not being able to physically examine a patient. Remote resuscitation and guiding off-site clinicians to care for patients is vital. It is not just in emergency rooms where this has been of benefit. There are applications in telehomecare where patients with mobility issues or chronic disease can be monitored remotely by clinicians to improve access:

> *"…the greatest benefit of it [i.e., telehealth] is…getting access to services. This is the case not just for people who live in rural areas but for people who might live two doors up from a rural hospital, but are disabled. Many people…also have a physical disability…[and] for them to get out of the house, whether they live two doors up or 200 kilometres away is the same degree of effort… it gives them access and the capacity to stay at home and have the treatment there."* **[i28F]**

Another advantage of video conferencing is the flipped modality by which health care can be offered in the home. For example, this clinician added that:

> *"The other big plus about telehealth is that when working with somebody in their own home, you get the opportunity to see how they communicate with other people in their environment…seeing people and working with people in their own home, when their wife walks past and says something and they reply, you can see what they are doing with their speech…you are placing the intervention into the home environment as opposed to an artificial environment…you can sit down and watch them having lunch*

*and see what they are doing. We can tell them what they should do, and how they should sit, and all the rest of it, but when you are in your home environment you always go back into what you do at home. You can immediately see what it is that they are not doing correctly and provide advice. That is more beneficial to a person."* **[i28F]**

Live streaming can also enable clinicians to portray to patients' parts of their body, or to view parts of their body in different ways. This can aid new ways for patients to understand and relate to their particular condition. This can be an important part of addressing the psychological and emotional aspects of health care that providers are confronted by, in addition to attending to a patient's physiological needs:

"*There was a patient who had surgery and radiation therapy to his mouth…he came in with his wife and the clinician at the site. Through the telehealth system we were able to do an oral examination - to look at the inside of his mouth and at his tongue. He and his wife could see that and so could the clinician at the other site… [we] were able to understand why he had so many challenges with swallowing…through using telehealth, having the screen and being able to communicate that as a group."* **[i8F]**

As a synchronous technology, the main goal of video conferencing is the relay of live information with audio and visual feedback. Another type of telehealth technology that can be infused into the health care service delivery is store-and-forward email.

### 4.2.2 *Account 2: Telehealth Through Store-and-Forward Email*

*In a rural area in remote Queensland, a patient presents to the local general practitioner's clinic with a lump they have had for a while. They have not previously seen anyone about it but recently it has been bothering them. The general practitioner is able to look at and feel the patient's lump, suspecting what it might be. However, without knowing the severity of the lesion, the doctor wonders about the utility of sending the patient into Brisbane for what may be only a ten to fifteen-minute appointment, before having to travel hundreds of kilometres home again. The general practitioner takes a few photos of the patient's lesion and sends them to the hospital that provides teledermatology services. A specialist dermatologist receives a new case alert on his smartphone. During our interview, he views the lesion, diagnoses a*

*suspected melanoma, and requests the patient to go for a local biopsy and blood test. The specialist emails the treatment plan to the rural general practitioner. The process takes around five minutes or so.* **[Observation Summary: i33M]**

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*Later in our interview, the same clinician receives another set of images on his smartphone. The case is for a locally based patient but the images are poor in terms of quality – they are quite pixelated. The clinician does not feel confident making a (differential) diagnosis and responds to the referring clinician asking for greater clarity with another set of pictures and more patient history. It seems frustrating for clinicians when dealing with information that is sometimes challenging to convey via virtually, as it takes more time. Not everything is visual, and losing one's sensory perception can make diagnosis difficult – particularly in the absence of good quality images and accurate information.* **[Observation Summary: i22M]**

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Store-and-forward is an email based technology transferring still images or audio-visual material on an electronic device. The images are increasingly captured with smartphone cameras and are received on smartphones as doctors are quite 'mobile' - this is the advantage that store-and-forward brings. Several questions arise when considering the use of store-and-forward email technologies as a part of standard telehealth service delivery. For example, clinicians often consider, amongst other things: (1) whether a picture alone can be used to provide an accurate diagnosis, (2) the visual implications of taking a snapshot and conveying this digitally; and, (3) whether the treatment fidelity remains the same (if not better) compared to face-to-face. Store-and-forward email is a useful asynchronous technology to capture still images of patients and video recordings. Patient information is sent between clinicians as part of a patient's management. As Wurm, Soyer and Smith (2012) explain:

> "…information (primarily still images and sometimes video clips with accompanying data) is sent to a data storage unit to be retrieved anytime. E-mail conversation and specially designed telemedicine web applications are examples for this modality. The sender can enter data at his or her convenience, and the recipient can later retrieve and analyze [sic] it. Communication is thus facilitated independent of the availability of the participants and independent of time zones…communication is not interactive,

however. Participants are not able to ask questions directly. In addition, the recipient only obtains information preselected by the sender" (p. 4).

Store-and-forward is used to bridge areas of large geographical dispersion. This is useful for rural and remote communities where it is not sustainable to have a specialist based out in the rural or remote area. As a clinician describes:

> *"…teledermatology is where the big opportunity for Australia is. We do not have too many dermatologists here; moreover, they are geographically maldistributed [sic], which is understandable knowing the width and size of the country. It is very clear that specialists - not just dermatologists - have a focus on metropolitan areas, suburbia and a few rural towns. Teledermatology can make quite a difference."* **[i33M]**

A key difference with store-and-forward telehealth compared to video conferencing is that the specialist whose advice is sought rarely meets the patient. Sometimes a clinician will follow-up with a video consultation as part of a hybrid model of health care delivery; however, this is only used for cases where live interaction is required.

Another challenge of store-and-forward is that the data captured may not reflect a patients' current state of health, due to the time lag between data capture versus data reception by the specialist. This time lag in production versus consumption, which is characteristic of service separation, is a type of temporal separation. This asynchronous nature of the technology incites a delay in communication in addition to the physical dislocation, experienced between the specialist and the referring clinician and/or patient:

> *"Temporal separation – what happens is I get a text saying there is a case waiting. Then log on to the site, three, four, five, six times a day. The only time people have had to wait more than 24 hours is when I have been physically incapable of reaching a computer, which does not happen much anymore. It used to when the Internet was desolate. Physical separation – well it is the Internet! I have had consults from Antarctica, Christmas Island, Timor, Burma, suburban Brisbane, and Perth - from all major capital cities; as a flying doctor...or in a ship at sea, I have had that too!"* **[i9M]**

An interesting aspect of store-and-forward is its versatility as a mobile technology, and the convenience afforded to parties involved, particularly the specialist. Although the

technology itself is not novel, its application is for enabling access to care that would not otherwise be possible for many patients, particularly those that are rural and remote. Store-and-forward is useful for consultations that are typically quite quick, and reduces time travel:

> "*…most of my consults are five to ten minutes online. Ten minutes is a long consult for teledermatology. Most of the information is transferred to the patient, but a lot of the information is transferred to the GP or nurse on the other end. They spend a further 20 minutes going through that whole process. You have two specialists having a look in detail…not having the GP makes it a longer consult."* **[i22M]**

Integrating multiple practitioners is useful in several ways. First, specialists engage with more teleconsultations because the off-site clinician can relay the diagnosis to the patient, rather than the specialist. Additionally, there is a concordance benefit in that more than one person lends their diagnostic opinion to the patient case. There is an educational benefit for practitioners who would not otherwise interact with specialist clinicians via store-and-forward; moreover, the cases referred to telehealth tend to be more complex or rare which provides a useful instruction opportunity from a specialists' diagnosis. Economies of scale may be reached once an off-site clinician sees a condition treated via store-and-forward by a specialist, and over time their ability to make differential diagnoses improves.

The other advantage of store-and-forward is the communication possibilities it affords. For example, patients can communicate with their specialist by sending updated images. In many ways, this revolutionises the care specialists provide as patients document their condition at its most acute phase:

> "S*ome people take photos and that is very useful… they will generally upload them or email me the next time they have a rash saying something like 'It is the first day I have been rash free'…I think everyone has a phone now so everyone can take a photo and say 'Look, I have a photo library of my rashes'. It is pretty amazing."* **[i32M]**

A 'library of rash photos' provides a useful visual diagnostic history, particularly when multiple clinicians are involved in patient management. This could be the case with skin cancer removal, which could involve a general practitioner, a dermatologist, a nurse, and even a plastic surgeon and anaesthetist depending on the lesion and how invasive it is. However, store-and-forward can present certain challenges to clinicians. One challenge is

the diagnostic capability and a clinician's level of certainty about a (differential) diagnosis. Some clinicians reported difficulty in establishing whether the occasional inability to make a diagnosis is truly due to the image quality (or lack thereof) versus a lack of experience with the actual condition that has presented. For example, in dermatology, a limitation is that an image does not provide an overview of the whole body or the visual spread of the condition:

> *"It is quite obvious; you look at the picture and know what it is or not. Just before you came, I did two teledermatology consultations. I was lucky, I knew what it was. Sometimes I do not, but the point is this. If you do not know it with teledermatology, you also do not know it clinically...teledermatology is obviously sensational because it gives you an idea about the morphology of the skin lesion. However, if the skin is complicated and you lack information it can lead you astray. There are quite a few issues. If I see a rash on the photo, [if] I lack the correct background information or the information leads me in the wrong direction, I can go terribly astray."* **[i33M]**

Image quality is the key for telehealth as this is the primary visual stimulus for diagnosis and treatment provision. If the images are not appropriate, then difficulties can arise in terms of reaching a timely diagnosis. During an interview the following unfolded live:

> "*Here is an example that just flew in while we were talking. That is a bad photo. You do sometimes get photos that are like this. If you did, you say, '…Please send another set of photos'. Actually, some of these photos [clinician flicks through images mid interview] – I mean, that is not bad [clinician assesses a photo on-screen]. If they send eight photos and two are good, you can usually give some advice… I get my registrar…to address that and send me a copy. Then I add or subtract to anything he wrote and we go from there…this saves my registrar from going to emergency …because they have 60 patients to see in clinic at the same time…they send me a reply in about 5 minutes' in-between consultations and I reply to that. In about 10-15 minutes the emergency department has an answer."* **[i22M]**

However, one question remaining is whether there are limits to what can be treated via store-and-forward email. Areas that still include a high haptic component where the clinician needs to see the patient are generally challenging via telehealth and not conducive:

*"Cosmetic work is sometimes very difficult, because there is so much to do with contours and [the] tactile nature…and lighting. I can give very basic information about cosmetic options to patients...apart from that…it is about facial contours, for scars…lighting is an issue; it is very difficult to do cosmetic work on two-dimensional [2D] images on the computer. It is much more three-dimensional [3D] and there is a lot of personal preference and subjective value so it is a longer consult."* **[i22M]**

### 4.2.3 *Account 3: Telehealth Through Robotic Telepresence*

*The clinician prepares for surgery. The operation will be via a robot rather than the clinician using their hands directly on the patient. They will control joystick-like tools to perform the operation at a virtual distance. The clinician sits inside the robotic console, in the same room as the patient.* **[Experiential Vignette Reported: i5M]**

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Robotic telepresence is increasingly occurring in surgical contexts. For clinicians tasked with engaging robots to perform previously manual tasks, and particularly those that are considered high risk – such as surgical interventions – a new evolution has come about. This requires new ways for how clinicians operate. Robotic telepresence surgery is quite different from '*getting a knife and making an incision the old way*':

"*…in my hands, the robot provides much more precision. Not only does the robot provide precise movement…it has seven degrees of movement, as opposed to four as with standard laparoscopy. It is like operating with little hands inside of the patient. You have a wrist movement, whereas you do not have that with laparoscopy. With laparoscopy, you only have rotation – in, out, up, down, left, and right. With the robot, you have all of those plus bending of the wrist and twisting movements. It is more precise - you can dissect a lot more, with much more precision. The robot provides 3D vision, with a binocular camera system. We see everything in three dimensions, as opposed to laparoscopy, which is only 2D…you have far superior depth perception with the robot because of the 3D binocular vision and ten times magnification. Also, when controlling the robot, the movements are scaled 3:1 so the robot hands inside the patient move three times less than the speed of your actual hands as you operate the console."* **[i21M]**

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"*…the robot system allows us to visualise everything in magnification in a 3D concept. Within a console, we insert our head and the vision we have is significantly larger. That*

*is the biggest difference when we operate…often there are [i.e., internal structures] not visible to the eye, so having ten times magnification allows us to preserve as much as we can…we put the patient through and screen the patient so that they are suitable for a major operation. They come to the hospital and are anaesthetised. After that, we insert the robotic arms and dock the robot…all the ports of the robot are attached so that now all the instruments are inside the patient. The secondary surgeon will stand [or] stay by the patient and assist with different equipment, whilst the primary surgeon goes into the console and visualises the cancer while operating. Once the cancer has been removed and we repair the defect, all the ports are removed. The wounds are closed and the patient stays in hospital for a couple of days."* **[i5M]**

For some providers, robotic telepresence is transformative because it enables new ways to interact with patients and deliver separated health care services. However, this results in changes to standard surgery procedures in terms of roles and routines:

"*…the roles…are different in that in open surgery there is more potential for the assistant to cross over and do some of the manoeuvres that the primary surgeon would do, especially if you are training a registrar. Whereas with robotic surgery the bedside assistant is just doing the bedside role, so there is less cross over. If there is an emergent situation where you have to open or convert - it is extremely rare -…we would generally make sure that our bedside assistant was a competent surgeon that could do that if required. But generally speaking we would undock the robot and the primary surgeon would be in the abdomen pretty quickly."* **[i14M]**

Another modification with robotic technology is some of the ergonomic benefits for providers and the pace at which the service is delivered in its separated form:

*"…it is very physically demanding contorting your body into different positions. Whereas when you are sitting at the console, you are sitting ergonomically. You have got armrests, and even if you just need a bit of a mental break…you can just take your head out of the console, take your arms out of the controllers and just take a breather - have a drink of water, have a toilet break if you need…you are sat at the console in a comfortable chair with armrests; your head is supported so there is no neck strain as well. The only sore thing I had from a difficult case was a sore bum from sitting too long*

*and concentrating too much. I did not move around too much but the rest of it was fine, I did not have sore arms or sore shoulders like I often do after a difficult case.*" **[i21M]**

However, it is possible to integrate robotic telepresence in health care other than for surgery:

"…*in our most remote community they have robotic telehealth, where I drive the telehealth system…I zoom in very quickly… [for a] much better picture [with] greater clarity and control. It allows me to come close or move further away from the patient. I can do it from home, and it is all encrypted too. It is a very secure network."* **[i13M]**

### 4.3 **Activities Constituting Service Separation in Telehealth**

From the narration of telehealth provided thus far, a sense of the central ways that providers' experience the three types of telehealth technologies is gained. I now turn attention to elucidating the key activities constituting telehealth. The activities identified as per a practice-based approach provide a basis to understand service separation impacts on the service delivery process from the providers' perspective. Although there are some differences across technologies and specialties, the identified activities broadly reflect what transpires in most telehealth interactions. In terms of how these activities were derived, this flowed from my reflection on the observations, the interview material and from the time that I spent in the field sensitising myself to the telehealth community. As a part of this process, I also considered clinician's descriptions of their lived experiences of what they 'do' in a telehealth consultation to provide source material evidencing the activities. Couched from the clinicians' collective perspective and based on the empirical material sourced for the thesis, five key activities emerged organised as:

1. Assessing telehealth suitability of patients and conducting preparation work
2. Establishing relationships with various stakeholders
3. Examining patients at a virtual distance
4. Making (differential) diagnoses through vicarious examination
5. Following up relationship either through termination, on-referral or re-appointment.

These activities are unique to telehealth and are all couched from the providers' perspective. The activities apply most to video conferencing as this was the most commonly applied technology within the sample. There are slight variations noted in the specific tasks that are performed for each activity as a function of the type of technology used. To clarify,

for store-and-forward email, clinicians examine a still image already captured of the patient whilst in robotic telepresence surgery the clinicians visualise a magnified and three-dimensional image of a patient in situ. As previously mentioned, the temporality across which these practices unfold differs for each technology. For example, in video conferencing, activities three through to five happen quite contemporaneously. However, with store-and-forward email, activities one, two and three can become protracted if the correct information and appropriate images are not provided to the specialist. Moreover, activity four, in the case of store-and-forward, might require the specialist to examine the patient in-person.

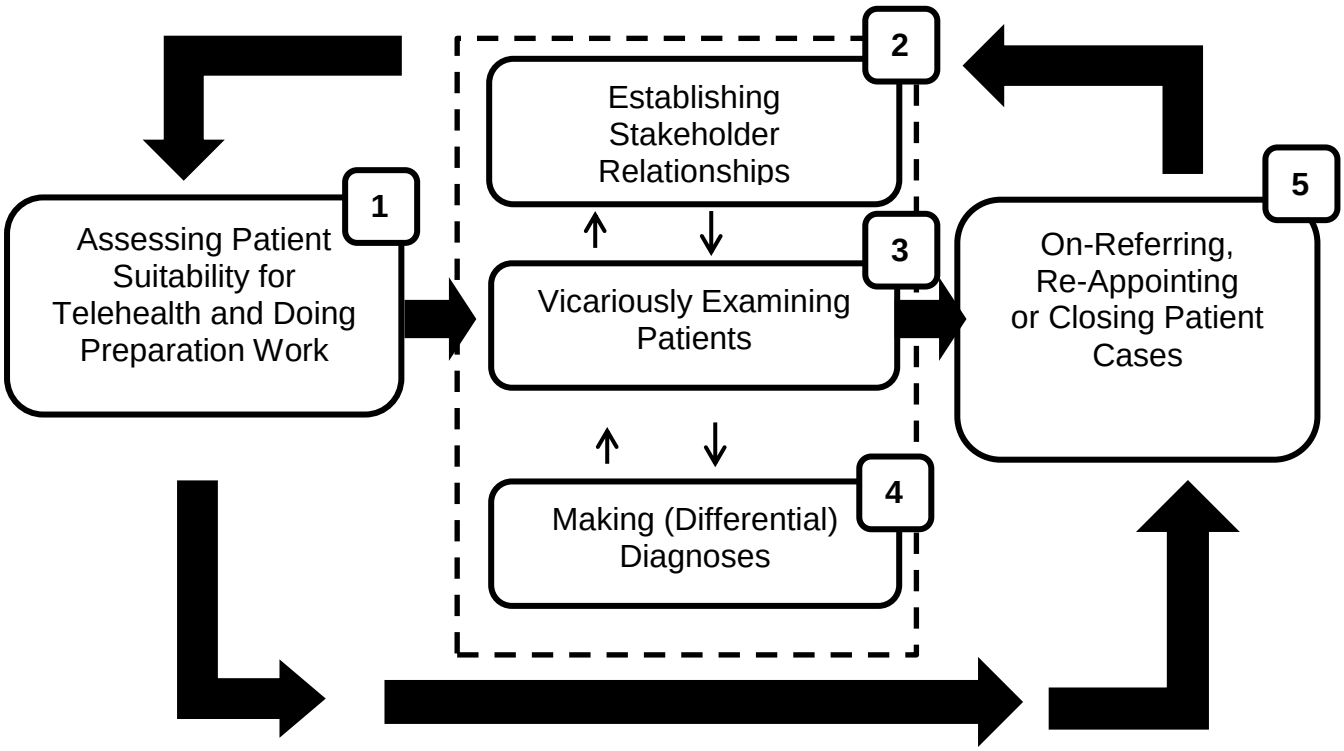


**FIGURE 2. CLINICIANS' TELEHEALTH ACTIVITY PROCESS**

The five activities identified are considered to constitute a process model, as shown in Figure 2. The progression of these activities transpires over a given time period, based on the duration of the consultation. Whilst Figure 2 provides an organising framework and common understanding for what service separation in telehealth requires of clinicians, there are individual differences in how these activities are enacted. Table 6 specifies various tasks undertaken by providers across each activity identified in Figure 2. This table specifies a typical telehealth clinicians' 'doings' (Schatzki, 1996; 2010) for knowing 'what to do' and 'how to do it'. This is important because it influences how clinicians understand *what* to do in relation to these activities. This is further explored in the following chapter as the results for question one addressing *how* providers experience service separation in telehealth.

**TABLE 6. CONSTELLATION OF CLINICIAN ACTIVITIES ACROSS THREE TELEHEALTH TECHNOLOGIES**

| | Activity | Clinician 'Doings' in Video Conferencing | Clinician 'Doings' in Store-and-Forward | Clinician 'Doings' in Robotics |
|---|---|---|---|---|
| *Patient Case Received* | 1. Assess Patient Suitability, Preparation Work | • Receive referral from the other doctor<br>• Assess patient history (online)<br>• Discuss suitability with the other doctor<br>• Tele-coordinator makes appointment<br>• Preparatory work for speciality cases:<br>  ○ Blood tests<br>  ○ Scans ordered | • Referring doctor collects patient data:<br>  ○ Takes images of patient<br>  ○ Fills out patient history form<br>• Images and case file sent to clinician<br>• Specialist clinician reviews images and requests further information or better quality images or more images | • Receive referral from the other doctor<br>• Assess patient suitability (online)<br>• Conduct pre-surgery video conference<br>• Use store-and-forward to:<br>  ○ Receive physiological diagnostic information: scans, blood tests<br>  ○ Order prep work tests |
| *Clinical Consultation Conducted* | 2. Establish Stakeholder Relations | • Dial out/call off-site patient<br>• Establish technical connection<br>• Check telehealth connection stable<br>• Build rapport:<br>  ○ Use non-verbals (wave, smile)<br>  ○ Introduce self to patient<br>  ○ Introduce self to off-site clinician<br>• Clinician clarifies purpose of the consult | • Referring doctor asks specialist clinician to review their patient<br>• Specialist clinician usually works with referring doctors whom they have a previous rapport with<br>• Time is usually taken for specialist clinician to trust a new referring doctor | • Meet patient face-to-face prior to surgery where possible, build rapport<br>• On surgery day clinician introduces self to patient, re-assure, answer questions<br>• Primary and secondary surgeon discuss any pre-operation notes among themselves<br>• Introduce selves to anaesthetist<br>• Stakeholders introduced (e.g., nurse) |
| | 3. Examine Patient Vicariously | • Check patient history matches file<br>• Ask patients to self-report symptoms<br>• Ask off-site other to examine patient<br>• Seek diagnostic information off-site<br>• Visually examine patient via technology:<br>  ○ Use technology to zoom in/out<br>  ○ Capture still images/video | • Specialist clinician conducts exam:<br>  ○ Views images of patient on smartphone, tablet or computer<br>  ○ Reads patient case file & history<br>  ○ Considers differences between information from images and case history | • Anaesthetist sedates patient<br>• Robotic technology set up by clinician:<br>  ○ Insert robotic arms into ports in patient, dock robot<br>• Secondary surgeon presides bedside<br>• Primary surgeon in console operates<br>• Use robot functions: zoom in/out<br>• Use ten times magnification<br>• Communicate with secondary surgeon |
| | 4. Make (Differential) Diagnoses | • Ask for additional information to clarify<br>• Check patient data with off-site clinician<br>• Suggest possible diagnoses if uncertain<br>• Explain diagnosis and monitor reaction<br>• Check patient understands diagnosis | • Specialist clinician considers (differential) patient diagnoses<br>• If certain a diagnosis is made - treat<br>• Scripts, further tests and diagnosis emailed back to referring doctor | • Remove diseased tissues<br>• Send tissue samples to lab for further testing if required<br>• Close patient internal wounds<br>• Undock and remove robot, close ports |
| *Care Plan Developed* | 5. On-refer, re-appoint or close patient case | • Request further tests if no diagnosis; or<br>• Schedule face-to-face exam; or<br>• Follow-up appointment if needed; or<br>• Resolve and close acute cases; or,<br>• Re-appoint chronic cases. | • Referring doctor communicates specialists' opinion to patient<br>• Patient case closed, or followed up with video conferencing or face-to-face examination if required | • Primary surgeon removed from console<br>• Patient taken to recovery<br>• Adjunct therapies part of on-referral after robotic telepresence surgery<br>• Video conference follow-up if needed |

### 4.3.1 *Activity One: Assessing Patient Suitability & Doing Preparation Work*

Activity one focuses on assessing the suitability of each patient for telehealth. This starts with receiving a referral and systematically reviewing the patient's suitability for telehealth. The four tasks include: (a) *checking the suitability of the case and referral* (and that it is not a misdirected referral), (b) *communicating with the referring clinician* what can and cannot be achieved for patients via telehealth (c) *assessing what lies within their scope of practice*, and (d) *conducting the necessary preparatory work* in advance of the telehealth clinic. For those that had experienced being sent a referral that was not suitable for telehealth, referring the patient on for appropriate treatment was time-critical. The first task of *misdirected referrals* also includes sending a patient to the wrong type of specialist or finding out upon assessing the referral that a higher level of care is required than what telehealth allows:

> "…*there has only been one referral which crossed my path that was not appropriate. I made contact with the reception team… [and] said 'She needs surgery this afternoon'. Waiting for next week's appointment for me to say, 'You should have had surgery last week' was not going to help. She needed to see somebody locally".* **[i2F]**

Specialists who receive referrals that are ill-suited for telehealth can initiate the second task by *communicating with the referring clinician* and referring the patient to local services:

> *"…there are some people who are best served in their…local region… I say 'You need to see someone in your state' or someone closer."* **[i32M]**

Clarifying the roles of the specialist clinicians who are involved in the management of a telehealth case is an essential part of the smooth delivery of telehealth. Role clarity is helpful to establish a *scope of practice document* as per the third task, which outlines current clinical knowledge around what is treatable via telehealth. The time taken to establish a scope of practice document is beneficial to the referring clinician, the specialist clinician, and the patient in terms of time efficiencies in the separated service delivery. After the scope of practice document is established, whether leniency is tolerable can be debated. This facilitates immediacy of access to health care for patients. Although not all clinicians reported experiences of having engaged with such tasks as part of the activity of assessing patient suitability, some described their cautious approach to the scope of practice:

*"…we were quite careful when we set up the scope of practice document that we send out to the GPs to make it clear what I can and cannot do. Obviously, you cannot examine people's bodies particularly well… [i.e., telehealth] works well initially and fills the gap for people between seeing a GP."* **[i2F]**

Besides from the type of speciality and technology used, there may be complexities specific to the patient case requiring special consideration as to their suitability for telehealth management. For example, a case may be suited to video conferencing but not robotic surgery, and can be managed via video conferencing until hands on surgery is required. For example, the initial of a specialist's *preparatory work* for telehealth often reveals the severity of the case and its implication for telehealth management:

*"Patients often come…unknowingly that they have cancer. They see a GP who says 'Let us get a scan, it might be a gallstone or something very common'. Incidentally we find a small cancer…we are talking specifically about kidney cancers…it is not a big cancer that is eating up the whole organ. To remove the cancer…we put the patient through [and] screen them for their suitability...for a major operation."* **[i5M]**

The preceding example requires preparatory work including scans to assist clinical decisions regarding patient suitability for telehealth. Even for video conferencing or other fields of medicine such as geriatrics, a significant component of clinician time is spent preparing in advance of seeing patients themselves. In the case of geriatric treatment, this can be even more salient for patients who cannot remember the specifics of their treatment:

*"All telemedicine consultations involve preliminary work up by various GPs or other referring doctors. When we conduct the tele-memory clinic…prior to the consultation [we] request cognitive assessment and cognitive screening by the referring doctor. All the review [is done] in prior…it is not possible to do a cognitive assessment without preliminary work…you would not be able to do it."* **[i6F]**

Depending on the patients' condition or medical speciality required, the preparatory work can vary in importance. Even if the patient seems suitable it may transpire during the consultation that they are not. Requesting detailed information can aid an informed decision:

*"Everyone I know who does video conferencing does it in conjunction with store-and-forward because the images with the video cameras are not as good as a nice still image. What they do – and I used to do a bit of video conferencing – is get the [referring] doctors to forward the images and clinical history."* **[i9M]**

Based on the images and clinical history the specialist clinician then makes an informed judgement about the patient's condition and their suitability for telehealth.

### 4.3.2 *Activity Two: Establishing Stakeholder Relationships*

The second telehealth activity centres on clinicians establishing stakeholder relationships via telehealth. The five tasks include: (a) *establishing relationships via the technical connection* between the specialist and the off-site patient, (b) *introducing oneself to the patient and off-site clinician*, (c) *exchanging pleasantries or a greeting* if any parties have not previously met, (d) *checking the purpose of the consultation*; and, lastly, (e) *whether any changes in the patient's condition have occurred* since the time of the previous activity. Additionally, in the above task examples, certain telehealth technologies vary in terms of whether the clinician and patient even interact and therefore need to be introduced. With store-and-forward email, for example, the clinician may not meet the patient. There are various ways that clinicians establish stakeholder relationships via telehealth. A clinicians' ability to *establish relationships via the technical connection* as per task one improves over time:

*"…Generally, you know it {i.e., telehealth} works pretty well. From my point of view after a couple of months of doing telehealth regularly it becomes second nature and it does not really have much influence at all."* **[i6F**]

The technologies infused to separate the service delivery have their own limitations. This in turn can challenge clinicians when introducing themselves to *patients* and *off-site clinicians* virtually, as per task two. When asked whether they prefer face-to-face interaction versus telehealth for these introductions, one clinician reported that:

*"…face-to-face obviously [is better], - you can take a wonderful history over the tele process - but you cannot sometimes pick up little subtleties. You can if you watch carefully…once there is a relationship there I think it is relatively easy…if you are*

*careful with them you can usually get a lot out of them. If you are brash with them then you will not. That is one of the hassles with that other guy - he was brash, does not tell, does not look, that is the way he is, so he is probably not someone you could involve in telehealth."* **[i7M]**

However, some technologies do not facilitate this capacity for clinicians to establish relationships overly well via telehealth. This may be because of the type of technology used. This is the case with robotic telepresence surgery where the patient is anaesthetised and specialists might only *exchange pleasantries or a greeting* with patients' pre-and-post operatively, if at all, as per task three. In the case of robotic surgery, tasks four and five show additional procedures that clinicians observe such as *checking the purpose of the consultation* and *whether any changes in the patients' condition have occurred*:

"*The secondary surgeon will stand [and] stay by the patient and assist with different equipment, whilst the primary surgeon will go into the console, and visualise the cancer while operating... having another expert by bedside of the patient because things go wrong…if you accidentally injure a large blood vessel well, you might have a minute before the patient is dead [is important]. You need an expert by the patient's bedside otherwise it is going to be difficult."* **[i5M]**

In the previous interviewee excerpt, whilst the clinician may not a need to exchange pleasantries with a patient that they operate on, there are other important relationships that need to be established – in this case, between the primary and secondary surgeon. Often, these relationships need to form quickly in teams that may not have met before. Similarly, if the patient's condition changes – here a risk of becoming critical during surgery, then the relationship establishing between the primary and secondary surgeon is crucial.

### 4.3.3 *Activity Three: Vicariously Examining Patients*

Activity three is bounded around patient examination. The three key tasks comprising vicarious examination include: (a) *checking patient history*; (b) *reviewing diagnostic information* gained from preparatory work such as blood test results and scans; and, (c) *using technology to examine the patient vicariously*. Being vicarious, these processes involve indirect examination of the patient. With store-and-forward email patient examination

is vicarious because it is a back-stage activity to which the customer is not privy, and involves *checking patient history* as per task one:

> *"Workflow wise it is usually a platform…a secure website…GPs key in their details, then key in their patients'. GPs register… [and] upload an online referral. It is about a two-minute process, whereby the details of the rash, the lesions, and the duration, whether they are on medications and…what have their previous treatments been, are entered…then they upload the photos. Following that, our admin gets a flag saying that there is a new case that has been uploaded. They then coordinate an appointment between the rural practitioner, the patient and me and then at this set time, I receive some information about the case being logged in to me. I get a chance to view that through the platform as well."* **[i22M]**

Even in video conferencing, where the technology is synchronous and the patient and specialist see each other in real time, the interactions that the specialist has with the patient are vicarious. As one clinician explains, *reviewing diagnostic information* as per task two assists specialists with determining what can or cannot be vicariously examined:

> "…*a lot of things would not lend themselves to it [i.e., telehealth] …neurology is pretty examination based…at least with initial consultations there are many presentations in neurology where you really need to examine people. Obviously, you can do that in a very limited way with telehealth. Some things like Parkinson's disease are probably not too bad because you can get people to do some movements or walk …but there are other parts of the neurological examination that you cannot do or you try to get the GP to do it but they are not very confident at examination.*" **[i15F]**

Most individuals can readily interact with common technologies such as video conferencing and store-and-forward email to examine patients. However, the use of robotic telepresence reflects a level of specialist training and expertise that few – only surgeons – possess. Finally, in attempting to perform vicarious examinations, the physical nature of the examination and how important the presentation of certain symptoms is physiologically in the body is important. Accurately gauging at an arms' length distance the nature of a condition is key to *using technology to examine the patient vicariously* as per task three:

"…*we do need specific…physical signs to work out the appropriate management or hormone replacement. For example, in diabetes we need to look at and examine the foot…that is the downside of it. We can overcome this partially by having an experienced nurse or a GP at the other end where they can do [the]…physical exam. However, I get all the new cases – [and] if you leave diabetes aside - for any other new cases, the clinical interaction is quite important…this is a highly specialised field. A nurse cannot replace an endocrinologist…to distinguish between conditions during the clinical exam is important…and people who have not seen many of these serious conditions, they will struggle, they will not know. You cannot expect GPs to know that because these conditions are already rare."* **[i27M]**

Reaching an accurate diagnosis via telehealth is crucial for the success of vicarious examinations, particularly in cases where nurses or GPs are unable to replace the specialist.

4.3.4 *Activity Four: Making (Differential) Diagnoses*

Activity four focuses on making (differential) diagnoses. The three key tasks include: (a) *making (differential) diagnoses*; (b) *requesting further tests* if required; and (c) *communicating the diagnosis*. For task one, if clinicians receive inappropriate diagnostic information, such as poor quality images, then this limits *making (differential) diagnoses*. In other instances, then *requesting further tests* as per task two may be required:

*"You say… 'I really would like to examine that person' but then you have the option of saying '…at least these tests need to be done in the meantime.'"* **[i15F]**

The specialist can make (differential) diagnoses by providing patients with insight into what the condition is likely to be pending confirmatory results from further testing:

*"…every now and then you might need a video conference but provided they give me a good history, good quality images, I can almost always tell them what it is, and I can always tell them what it cannot be. I can guide them as to further investigations, other places to look at on the skin and other tests to do."* **[i9M]**

This activity requires clinicians to *communicate the diagnosis* to patients and to make sure that patients understand the risks and have full information about their options:

"…*we do not offer surgery to patients unless we are sure that they understand the disease, what their options are, what the potential complications are and what the outcome is. We inform that patient as well as we can and if we feel that the patient does not understand the condition then we would not proceed.*" **[i5M]**

With video conferencing, the specialist may delegate diagnosis communication to the referring clinician. The off-site clinician is crucial to translate the information for their patient:

"*I have had people with [health] problems…and…I know the GP has done the physical examination…it is just a matter of [communicating the diagnosis] …almost as though the advice is directed at the GP rather than the patient. I say to the GP 'You could try this drug…and these are the side effects'."* **[i2F]**

Considering treatment options may require further investigation into the patient's symptoms. This could require ongoing management or be resolved by the specialist as a once-off case.

### 4.3.5 *Activity Five: On-Referral, Re-Appointment or Case Closure*

Activity five focuses on patient management via telehealth. The three associated tasks include: (a) on-referral of the patient to another specialist; (b) re-appointment of the patient with the same specialist for a follow-up consultation; or, (c) case closure for those that are resolved by the specialist at the first meeting. Task one requires *on-referral of a patient to another specialist* where the specialist is part of a telehealth team requiring others' input:

*"…they can try and organise follow-up with some other person…you realise that at least your opinion and experience is adding something to the situation."* **[i15F]**

As per task two, if the specialist is able to continue care via telehealth, then a re-appointment booking can be scheduled in the instance where a follow-up consultation is required. For example, in robotic surgeries, the potential for unknown complications to arise may necessitate follow-up with the same specialist surgeon, as they performed the surgery:

*"…we go through all the complications with the patients as a medico-legal consulting process. It is important because when a patient wakes up, if things have not gone well, and they have a big scar, they were warned beforehand. Not that we want that to happen, but that is life and complications happen."* **[i5M]**

Many cases are managed virtually without the specialist needing to meet the patient in-person and the case is closed through the once off telehealth consultation:

*"I do not have to take the history, I do not have to examine them, I do not have to get them undressed and wait for them to get redressed, I do not have to write out prescriptions, I do not have to write out blood tests, I do not have to explain the treatment to them. It is done by the referring practitioner* [after the case is resolved virtually]." **[i9M]**

This may facilitate treatment economies of scale in the long-term, such that the specialist is required less as the off-site clinician develops knowledge about certain conditions:

"…*getting their knowledge base up, so that they can then continue management of the person, rather than me…taking over the primary care role in that problem."* **[i2F]**

## 4.4 **Chapter Conclusion**

This chapter detailed the nuances of the three telehealth technologies which feature in this thesis as enabling service separation of health care. Following on from the theoretical approach explained in the previous chapter, which outlined applying a practice-based lens as being applied to the analysis of the empirical material, I made explicit the identification of five activities and their associated tasks as unique to telehealth. This revealed differences in how each activity was enacted as part of a clinician's 'doings and sayings' as seen through the interview and observational material. The five activities that were identified constituted a five-stage process of separated health care service delivery: (a) *assessing patient suitability for telehealth and preparation work*; (b) *establishing stakeholder relationships*; (c) *examining patients vicariously*; (d) *making (differential) diagnoses* and lastly (e) *on-referring, re-appointing or closing patient cases*. The next chapter addresses research question one, with results for how providers' experience service separation in the context of telehealth

# 5. **RQ 1: Four Clinician Understandings of Service Separation**

*No patients are with us - there is no waiting room, no medical equipment, and no stethoscopes. No bed, no clinical charts, no toys or puzzles for children. The soundproofed wall-carpeted room is about 3x3 $m^2$, with only a desk, computer, monitor, phone and two chairs. One for me; one for the doctor - but I am not his patient. The doctor selects a rural hospital from a digital dashboard. We dial out and a nurse answers mid-sentence, as we are wheeled virtually through the hospital. Occasionally staff wave and smile at our images on the telerobot screen. After a connection drop-out whilst in the elevator, we see an elderly patient in bed, some eighteen hundred kilometres away. "Hello? Can you hear me?" The doctor waves; the patient beams back. "Oh yes, doctor" - and so the telehealth consultation begins.*

*(Narrative reflection on field notes).*

## 5.1 **Chapter Overview**

This chapter presents the results for research question one: 'How do service providers experience service separation? The opening vignette exemplifies a typical video-based telehealth consultation noted from my first day of ethnographic field observations. I use this vignette to make clear my pre-understanding/s about telehealth, such as: *without being physically present, without using medical equipment or conducting a physical exam, how can providers deliver health care services?* I begin by summarising four understandings of service separation arising from the phenomenographic analysis. Next, I delineate their sub-facets to show conceptual distinctions across the understandings. Interview quotes are used to bring alive the 'voice of the practitioner', and are interspersed with theoretically interesting 'tales from the field', in the form of ethnographic vignettes. These observations enrich the phenomenographic analysis by prompting the reader's reflection on my observations of certain providers' behaviours whilst they were engaged with telehealth service provision.

## 5.2 **Clinicians' Four Understandings of Service Separation**

Four understandings emerged from the phenomenographic analysis, representing qualitatively distinct categories describing providers' understandings of service separation. The four understandings were termed: a) depersonalisation; b) clinical voyeurism; c) negotiating intangibility; and d) managing change. Conceptual definitions for each and a brief overview of their sub-facets are provided before unpacking each in more detail.

### 5.2.1 *Is This for Real? Explaining Depersonalisation*

Depersonalisation reflects the psychological distance perceived by specialists during telehealth. It is characterised by two sub-themes; namely, *disengagement* and *disruption*. As a type of sensory derealisation, depersonalised experiences are intangible and harder to mentally envisage. For example, a specialist might think: "*Is what I am seeing real or an artefact of the virtuality*" as a result of not being physically co-present with their patients. Not being physically or temporally present increases a provider's perceived psychological distance from patients. *Disengagement* reflects one's psychological disconnection from a patient from blurred boundaries around reality. *Disruption* heightens one's perception of disengagement, when technology failures occur. If technology fails, the psychological connection that a provider has with the patient can be as equally jeopardised as the technological connection. This not only disrupts the service continuity, but subsequently takes time to re-establish the connection to the patient – literally and psychologically.

### 5.2.2 *Watching Me, Watching You: Explaining Clinical Voyeurism*

Clinical voyeurism encompasses a providers' experience of feeling like a 'clinical' voyeur when examining patients via telehealth. Clinical voyeurs overtly observe patients, either via live-streaming (video conferencing; robotic telepresence) or with still images (email store-and-forward). Clinical voyeurisms' sub-facets include *looking glass effect voyeurism*, and *picture-(not)-in-picture voyeurism*. *Looking glass effect voyeurism* reflects one's sensation of peering into another location that is spatially and/or temporally distant from one's own. It describes magnification effects unique to telehealth when using technology to zoom in on patients' body parts on-screen. *Picture-(not)-in-picture voyeurism* reflects one's perception of misaligned eye contact. This visual field disruption could be worsened by poor camera placement and is due to the misalignment of the inset picture versus the webcam that provides an audio-visual feed from the patient. Picture-(not)-in-picture voyeurism can worsen when examining patients' bodies whilst simultaneously trying to appear focussed on

the patients' face. The placement of the inset image, versus the web cam which is typically located at the top of the screen predisposes negotiating a 'shifty-eyed' manoeuvre between the two feeds. Thus, providers may become inwardly voyeuristic, concerned with what they look like on-screen to patients; or, alternatively become so attuned to looking at the patient that direct eye-contact is not maintained. Figure 3 illustrates how visual field misalignment could occur based on my observations of the telehealth clinics involving video conferencing. Four eye-contact points are shown from the eye-line origin. The dotted line indicates the span across which the providers' eye-line 'shifts' when conveying a consult. The provider must look into the webcam if they wish to convey eye-contact to the patient (Point 1) but this forgoes their ability to look at the patient (Point 2). The on-screen image shows the provider what they look like themselves (Point 3) and looking off-screen to the dial pad is necessary to control the system (Point 4).

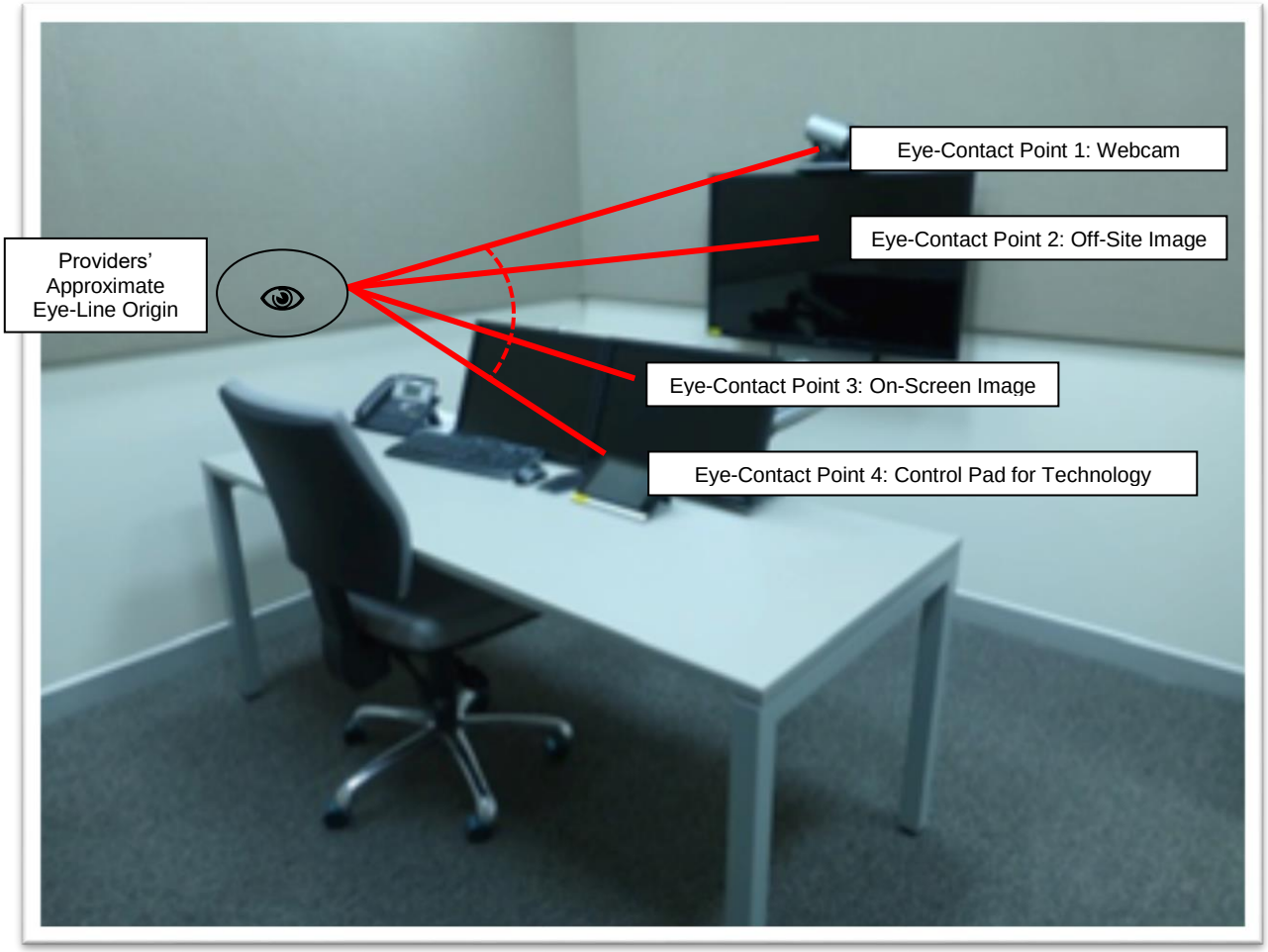


**FIGURE 3. A ROOM WITH A 'LIMITED' VIEW? VISUAL MISALIGNMENT IN VIDEO CONFERENCING**

Image Source: Centre for Online Health (https://coh.centre.uq.edu.au/pah-telehealth-facilities)

### 5.2.3 *I See You, But I Don't Feel You: Explaining Negotiating Intangibility*

Negotiating intangibility encompasses the providers' inability to physically examine patients due to geographical dislocation. Intangibility can challenge how providers practice medicine; stethoscopes become useless. When negotiating intangibility, providers can live vicariously through the eyes, ears and hands of the off-site provider. Negotiating intangibility yielded two sub-themes; *dismemberment and disempowerment*. *Dismemberment* reflects a providers'' typical view of only half of a patient's body - their head and shoulders, with their torso off-screen. If viewing the patient's whole body is desired, finer detail is often sacrificed by the provider to zoom out with the camera for a macro-view. *Disempowerment* refers to the loss of haptic feedback through absent tactile sensation. This disempowers a providers' ability to examine patients, engage in social norms such as a handshake or provide consolation if relaying difficult news.

### 5.2.4 *From Physician to Technician: Managing Identities & Roles*

Managing one's *identity* and *role* is encompassed by the providers' experience with straddling the tension between their clinical identities as physicians, versus their transient role as a telehealth technician. Separating production from consumption spatially and/or temporally could create tension for two reasons. The professional *identity* of the provider as a medically trained expert is likely to be a stable, familiar basis for understanding. However, the technical *role* of the provider is to ensure that they competently manage the technology whilst delivering the same or better standard of health care as face-to-face. Using telehealth technology is unfamiliar for most clinicians; as such, this can erode their confidence if managing one's identity is challenged by the technical capacity to operate the telehealth technology.

The rest of the chapter unpacks the sub-themes for each understanding. Tables 8, 9, 10 and 11 are provided at the start of each section to give initial insights into the nuances of each sub-theme. I conclude by presenting an outcome space that visually plots the positioning of and between the understandings against the service separation dimensions of time and space. I follow Marton and Booth's (1997) advice as previously described in chapter three for the rigorous presentation of phenomenographic research.

## 5.3 **Constituting Four Understandings of Service Separation**

Table 7 shows the observed frequencies which emerged across the four understandings of service separation (in the rows), juxtaposed against the five telehealth activities that were identified in the previous chapter (in the columns). Depersonalisation was most common [n=29], followed by negotiating intangibility [n=22], clinical voyeurism [n=14] and managing identities and roles [n=6]. Some interviewees voiced multiple understandings across the activities for establishing relationships, vicarious examination and (differential) diagnoses. Before and after the consult, depersonalisation and managing change were experienced.

**TABLE 7. THE CONSTITUTION OF FOUR UNDERSTANDINGS OF SERVICE SEPARATION**

| | | **Key Activities of Telehealth Service Delivery [2]** | | | |
|---|---|---|---|---|---|
| **No.** | **Understanding *Service Separation as:*** | **Assess Suitability & Preparation Work** | **Establish Relationships; Examine Vicariously; Make (Differential) Diagnosis** | **On-Refer, Re-Appoint, or Close Patient Case** | **Total[1]** |
| **1** | *Depersonalisation* | ✓ Providers often do not see patients prior to the consult, and are strangers to their patients, leading to impersonal referrals. | ✓ Depersonalisation occurs through 'virtual' reality; disruption from technology failure exacerbates the depersonalisation felt. | × | |
| | | **7** | **22** | - | **29** |
| **2** | *Clinical Voyeurism* | × | ✓ Exaggerated observation of patients on-screen occurs due to a loss of physical touch; having the camera not in-focus (zooming in and out) with an eye contact mismatch increases voyeurism. | × | |
| | | **-** | **14** | | **14** |
| **3** | *Negotiating Intangibility* | × | ✓ Patients are 'untouchable'; the loss of haptic feedback requires leveraging a 3rd party for vicarious examinations. This can be disempowering for providers. | × | |
| | | - | **22** | - | **22** |
| **4** | *Managing Change* | × | ✓ Managing change occurs in the tension between one's clinical identities versus technical role as a physician versus technician. | ✓ Managing tension and practice after consultation is necessary. | |
| | | - | **6** | | **6** |

Notes:
[1] Numbers in the total column indicate the sum of frequencies expressed by interviewees.
[2] Cells with a cross indicate no understanding was expressed by interviewees.

## 5.4 **Understanding 1: Depersonalisation**

Depersonalisation was frequently reported [n=29]. Depersonalisation encompasses the specialist clinicians' potential to experience telehealth as a kind of virtual reality in which they are disassociated from the patient. This stems from a separated services' technology infused nature, which can make the experience feel surreal. When experiencing depersonalisation, the provider psychologically perceives the lack of physical proximity to the patient and is hyper-attuned to the fact that they are in a different spatial location. Perceiving temporal distance in terms of a time lag compounds depersonalisation's intensity. Table 8 shows interviewee quotes for each sub-theme.

**TABLE 8. DEPERSONALISATION: DISENGAGEMENT & DISRUPTION**

| | **Representative Empirical Material** |
|---|---|
| **Disengagement** | 1) When using telehealth, "…*sometimes you cannot pick up little subtleties.*" **[i7M]**<br><br>2) "…*if someone is sitting on the other side of the table from you they have your full attention for the entire time whereas with telehealth, with those delays… people are less engaged.*" **[i10F]**<br><br>3) Disengagement encompasses "…*the distance and the fact that you are behind the screen, that is the great limiting step…I cannot deny the fact that it is less flowing.*" **[i17M]**<br><br>4) "*...when you are one-on-one you can use body language and you can direct the flow of the conversation more easily… [it is] very hard to do that via video.*" **[i20M]**<br><br>5) "…*it [robotics] becomes a bit like a virtual computer game.*" **[i2F]**<br><br>6) As a result of being disengaged, *"…where you have a photosensitive eruption…if they just show me a close up of the forearm I may not realise that it is photosensitive."* **[i9M]** |
| **Disruption** | 1) Failure is disruptive, *"…even if you have the best Internet connection, sometimes the intermittent delay interrupts the conversation. Plus, you cannot see as clearly as you would like.*" **[i5M]**<br><br>*2)* A provider describes that they "…*had some issues. We had to cancel the clinic or it would drop out and we have to stop, but this is a normal thing with a high-tech service."* **[i6F]**<br><br>3) *"… especially for transmission and time lags of 1 or 2 seconds, [technology failure] is too hard to get used to…the image is very choppy. If it comes on and off that is very distracting.*" **[i13M]**<br><br>4) "…*we had to abandon a consult…and defer to a telephone… with an Italian speaking patient and an interpreter. Logistically it was very challenging to organise the rural patient.*" **[i18M]**<br><br>5) When disrupted, "…*you often have to repeat yourself or jack up the volume. If you jack up the volume it increases the ambient amplifications and they get problems with hearing.*" **[i20M]**<br><br>6) Experiencing disruption from technology failure "…*is a little bit unnatural but…if the quality of the video is still okay, which it usually is…you can read expressions pretty well.*" **[i15F]** |

### 5.4.1 *Sub-Facet 1: Disengagement*

Disengagement was a surreal experience for providers separated from their patients because of physical distance. Providers who reported experiences aligned with the understanding of depersonalisation not only felt the lack of personal connection with their patient but also perceived to varying degrees – depending on the type of telehealth technology used – that the separated service interaction was virtual and not real. For example, with robotic telepresence surgery, one provider described its use as akin to a simulation. This had consequences for decreased risk perceptions, heightening the psychological distance between the specialist and their patient. In such instances, looking at a screen image of a patient rather than their actual body incited a sensation of being disengaged with the patient and divorced from reality like a virtual environment:

> "*…you might take risks that you might not necessarily take if you were that little bit closer to the reality that this is living flesh attached to a real person, because you are just handling plastic knobs …I am wondering if it starts feeling simulated with no risk because you hit 'game over' and restart in a simulation environment if you have killed the person. Perhaps psychologically you might distance yourself a bit too far and take unnecessary risks because…it looks virtual rather than real."* **[i2F]**

As interviewee **[i2F]** states, disengagement was unsettling. Another outcome for clinicians who experienced disengagement was a sense of disconnection from their patients. Treating an experience as a virtual reality interaction hints at the lack of engagement that a specialist might perceive. This is because with robotic telepresence surgery the patient is anaesthetised and therefore providers are not required to attend to patient needs during the robotic operation. However, in the case of video conferencing, specialist clinicians engage synchronously with audio-visual feedback. They negotiate the spatial separation and lack of physical closeness through live streaming. Thus, telehealth was described by some providers as feeling less engaging than face-to-face care:

> "*…there could be a tendency to not be as engaged with telehealth as [you are] with face-to-face [health care]"*. **[i10F]**

Disengagement heightens inattentiveness, as shown in the previous citation. Other forms of inattentiveness indicating disengagement include providers who may be overly

aware or attentive to their own body language and how they convey engagement to patients via telehealth. Overall, that providers feel less engaged because of the physical absence of the patient enhanced their disengagement via telehealth and further depersonalised their experience of interacting virtually. The loss of physical touch is also a feature of telehealth that disengages the clinical experience for providers. Often, clinicians reported that touch is a very 'human' thing to do, which personalised the consult and the clinicians' perception that they were psychologically 'there' with the patient:

> "…*I think that is crucial [i.e., touch]. Also, in many practices as a doctor I see that if …you touch a patient or if you shake their hand it puts a different level on it, but over telemedicine [personalised service delivery] is going to be a harder."* **[i30M]**

As interviewee **[i30M]** mentioned, the benefits of visual feedback (i.e., seeing each other) through a richer medium such as video conferencing generally enables a more personalised virtual encounter. Physically touching the patient through social norms such as a handshake can be a quick and genuine way to personalise an interaction; however, in its absence, new ways of interrelating to maintain engagement are required:

> "*…all they will [i.e., clinicians] have to do is put one finger on a person's knee and say 'Hey, you will be alright'. That is such a reassurance. It turns a patient's whole day around. It is that intimacy, and often patients say 'Thank you so much, I feel so much better'. If they are a really nervous patient you might just tap them on the hand and say 'It is okay, it will work out. Just let me…go through surgery and I will talk to you more about it afterwards'. With all those things, I can see an immediate response from the patient…because people are people and they want interaction…seeing a surgeon, you can see it in their face. The surgeon walks into the room and the patient just relaxes, their anxiety just melts away. I think that is important. But if they are on a screen because the consult was in Brisbane and the robot machine was in say Mackay or somewhere rural I do not know how they would respond."* **[i5M]**

Several keywords from the above quote highlight this specialist's perception of their role with their patients as being to *reassure* them, create *intimacy*, enable *interaction*, and *relax* to reduce patient *anxiety*. This is possibly because surgery entails higher levels of risk and vulnerability on behalf of the patient compared to other health care interactions. Although the patient is not mentally present during the operation due to anaesthesia, the specialist

has an important function to overcome their own sensation of being physically distant but psychologically co-present with the patient during surgery. Using touch with patients can help to establish a personal connection. For example, it can soften the blow of uncomfortable news, or make an uncomfortable procedure more comfortable. The ability to convey these sentiments is diminished by technology infusion, inciting depersonalisation and the clinicians' experience of disengagement. However, for one specialist, the concept of physical touch was jarring (unless required for clinical examination). The following provider did not perceive disengagement as they did not value touch:

> "*…consoling somebody by touching them is not any use whatsoever. I find that quite invasive. When I do go to the doctor and I am bawling I just want them to look at me and go, 'I feel your pain' and just wait for me to stop. I do not need someone to touch me, that is a bit weird and I am not at a loss in teledermatology".* **[i23F]**

For this specialist, their prominent telehealth technology is store-and-forward email. For specialists engaged with store-and-forward they rarely meet patients and can make diagnoses primarily from still images and a patient history. Hence, some providers may not perceive disengagement depending on the degree of touch that their field predisposes them to when consulting a patient; or, based on their own personal preference for touch.

### 5.4.2 *Sub-Facet 2: Disruption*

Disruption represents the failure of technology during a telehealth consultation. This failure lies on a continuum ranging from latency issues that cause a time lag or pixilation, which distorts the visual on-screen image, through to a complete loss of connectivity. Disruption had the potential to heighten the clinician's experience of disengagement because of the failure of technology and the technological latencies experienced because of this occurrence. This includes pixilation, distortion or 'choppiness', or a loss of connection fidelity with no sound or picture. Disruption compounds initial feelings of depersonalisation. Due to the time lag that occurs with technological latencies, the time taken to re-connect when technology fails disrupts the flow of the consultation. It takes time to repeat what was said to confirm if any dialogue was 'lost in (digital) translation'.

> "*If it keeps shutting down and you have big delays in getting rid of the wretched echo I feel like it is hard and I do not know how to get over it. What triggers that feeling of*

*distance is if the technology is not giving me good video and good audio… I have to change the way I talk…because you know you are waiting for the delay. I think if you can have that normal conversational dialogue…I can easily talk to someone for a few minutes, get them on board… [however] if you get delays then it goes puke.*" **[i1F]**

Technology failure compromises the fidelity of a connection – and for service providers i1F, i10F and i26M this was akin to a service failure in how they as a provider have performed. This can be so disruptive that the appointment has to be re-scheduled. Poor audio might require establishing a phone connection so the provider can communicate with the patient. Disruption can result in providers becoming distracted by other tasks whilst waiting for the connection to re-establish which depersonalises their experience even further from the immediacy of the momentarily disrupted consultation:

"*…if the connection drops and you have to reconnect, the delay gives you time to check messages on your phone while waiting for the system reboot."* **[i10F]**

Telehealth interactions are fragmented due to the unpredictability of disruption. Disruption increases a provider's frustration with service separation because of the need to repeat oneself and spend time and effort to re-establish a lost connection which could be better directed toward patient interaction. This is salient in health care where providers have a high opportunity cost associated with their time and patients scheduled back-to-back:

"*…if it does [fail]… [I have to] get someone to fax, scan or email [me] and then I have to wait… it [failure] disrupts the flow of the consultation… it is a failure of the service. You are not delivering an appropriate service, which is a reflection on you as a clinician.*" **[i26M]**

Some providers are desensitised to technology failure disruptions when depersonalised:

"…*this is a normal thing with a high-tech service"* **[i6F]**; and,

"…*it is technology, we expect it to fail.*" **[i5M]**

What appears to be most challenging about the providers' experience of disruption is that it is an unprecedented occurrence. When it occurs, time is then spent (often by the specialist) a) re-establishing the connection via the telehealth technology; b) using another form of technology to re-connect or, c) implementing some hybrid approach. When

technology fails, it can be highly disruptive, depending on the type of consultation being provided virtually. In the context of surgery, providers might develop strategies to 'desensitise' themselves to such disruption by pre-empting technology failure as a norm:

> *"…the most advanced technologies in the world…they fail from time to time. This [i.e., robotic surgery] is the same. We have had cases where…the power goes out during summer when everyone is using air-conditioning. I have been in cases …where the power goes out and the robot has nothing to do…we had to remove it and do traditional surgery. Or the machine itself actually breaks down…it happens…we must see it maybe once every six months."* **[i5M]**

To convey the possibility of technological disruption to the patient so that the clinician can manage patient expectations of telehealth more effectively, some use hybrid technologies as a backup. However, these are ad-hoc coping mechanisms rather than planned strategies. One provider describes such an experience with video conferencing:

> *"There is only one time when it has let me down…we could not hear each other. We had good visuals but no sound…they rang me on my mobile. I sat there with the mobile to my ear…and we watched each other and did the voice by phone".* **[i3F]**

Using multiple telehealth technologies in the one consultation is an advantage of telehealth as a way for clinicians to negotiate the challenges of disruption. In the former example, if the robot fails during surgery the back-up is hands on surgery (whilst the surgery is performed by a robot, a presiding doctor still assists the robotic surgeon who is based in the robotic console). In the latter example, if the video conferencing link connectivity is poor, conventional telephone communication, whether via landline or mobile, can be used by clinicians to complement or even resolve the issues that are imposed by disruption to the flow of the separated service from technology failure.

## 5.5 **Understanding 2: Clinical Voyeurism**

'Clinical' voyeurism reflected some clinicians' [n=14] experience of watching a patient on-screen as being uncomfortable. This seemed particularly prevalent in clinical consultations where sensitive information or personal parts that are normally 'covered' are 'revealed' for examination via video conferencing. Speciality fields where this occurs might be gynaecology, urology, or dermatology (for skin conditions in 'personal' areas) to name a few. It can be uncomfortable for a clinician to ask a patient to undress for a visual examination on-screen (even if the provider looks away). The sense of privacy is not the same when an image of the patient streams live over the Internet. Clinical voyeurism manifested across two sub-facets: (1) looking glass effect voyeurism; and, (2) picture-(not)-in-picture voyeurism. Overall, clinical voyeurism represented the exacerbation of visual observation of patients on-screen, streamed either live and synchronously (i.e., video conferencing and robotic telepresence surgery) or asynchronously (i.e., store-and-forward email).

*Looking glass effect* voyeurism encompassed the magnification that was enabled through the use of different telehealth technologies. For example, a provider can zoom in with video conferencing cameras for close up views of particular body parts of patients. In the case of robotic telepresence surgery, providers can use the robots to visualise at ten times magnification a 3D view of internal structures during surgery. The perceived voyeurism is the additional insight that is gained through the use of technology to view parts of patients that are not normally observed by the naked eye. Additionally, the looking glass effect of telehomecare (observing patients in their homes) and privacy and security (of captured images and whether they are viewed on clinicians' personal digital devices, or when asking a patient to show a sensitive/personal body part on-screen) is also represented by this sub-facet.

*Picture-(not)-in-picture voyeurism* encompasses the mismatched eye contact that can arise with video conferencing. This was indicated in Figure 3 earlier in the chapter. Picture-(not)-in-picture voyeurism also reflect the inability for the provider to truly know who is off-screen (but within a listening/observing radius) unless this is openly disclosed. Picture-(not)-in-picture voyeurism can also manifest for providers if the patient is out of focus or off screen. Finally, the providers' own attentiveness to how they appear to on-screen to patients is salient to understanding picture-(not)-in-picture voyeurism. To provide an overview of the

salience of these sub-themes, Table 9 highlights select quotes that were mentioned by interviewees who had experienced the feeling of clinical voyeurism.

**TABLE 9. CLINICAL VOYEURISM: LOOKING GLASS EFFECT & PICTURE-(NOT)-IN-PICTURE**

| | **Representative Empirical Material** |
|---|---|
| **Looking Glass Effect** | 1) "*This is a generation that has not been so advanced with technology as today's generation…so…it is a bit of a challenge speaking to a television set that speaks to them.*" **[i4M]**<br><br>2) "*In one of my other practices…it is not ideal…for some reason they wanted to use a headset which I think does not work because it look really foreign. And you sit to the side.*" **[i32M]**<br><br>3) "*I am always conscious that in certain situations you might need to zoom in on certain people as opposed to the whole room.*" **[i8F]**<br><br>4) "…*one of the difficulties is how to work the camera to do close up images of small joints, or even wider angled views of the patient, getting them to do various manoeuvres because the set up may not be conducive [to what is required].*" **[i17M]** |
| **Picture-(Not)-In Picture** | 1) "…*I had to keep reminding myself to look at the glowing green square, so they would perceive I was making eye contact with them, even if it actually meant I was not looking at their face.*" **[i2F]**<br><br>2) "…*we cannot manipulate the camera and its position…it is just a bit more difficult because we have to do many things*." **[i6F]**<br><br>3) "…*it is harder to get information from telehealth if you are going into someone's home…maybe the parents are setting the child up but…you do not feel you can ask questions because they are standing off screen even if you know they are in the room.*" **[i12M]**<br><br>4) "…*the nurse at the other end is sitting in. It is less private, which I had not considered in detail until now. That would be an issue. Some patients would be less comfortable with talking about issues…they are used to watching a TV, not interacting with it.*" **[i20M]**<br><br>5) "…*people need to position themselves and need to make sure that the patient is positioned on-screen so that they have eye contact. Eye contact is important for video conferencing. Obviously not so much via phone, but there are pregnant pauses just like there are in a normal face-to-face consultation. We interpret that silence as a kind of reflection.*" **[i25F]**<br><br>6) "…*one thing you never know is how the room you are watching may be set up. Ideally you want the camera to be front on, so then you can see if they are looking at you or not.*" **[i32M]** |

### 5.5.1 *Sub-Facet 1: Looking Glass Effect*

The 'looking glass effect' describes a clinician's heightened experience of watching and observing patients on-screen. This sub-facet captures the sensation of visually peering into 'another world' which one is not physically privy to. Moreover, the ability of the clinician to zoom in on a particular part of a patient's body and to magnify it on-screen results in the sensation of how a looking glass makes an object appear larger than its real-life form. This voyeuristic - albeit a clinical representation of the patient or a magnified part of their body

on-screen - further alienates the provider from the reality of the patient's body. This can create a voyeuristic sensation of watching the actions of another live through an 'observational lens'. In the case of non-live streaming via asynchronous media such as store-and-forward email, sharing images captured with patients can diffuse one's perception of clinical voyeurism:

> "*…I used to take digital photos…partly just for record…not every woman wanted to look at her own pictures but a lot of women were quite interested and wanted to know…we used images in laparoscopic surgery so I would always take still shots and occasionally video. I would make sure people had those as they were always interested at what their insides looked like."* **[i2F]**

Showing the patient images that they have not seen of their own bodies decreases the 'looking glass effect' because the experience becomes shared, and subsequently diffused. This is the case for women, where providers see the baby before the mother does:

> "*…in IVF we used to take embryo pictures for people and they were hugely appreciated. They would get a picture of their embryo before it went back in and we would often see them up on people's Facebook sites afterwards. Patients would say 'This is my embryo; this is the seven-week scan and this is my baby.'"* **[i2F]**

Here, the provider to transform a clinically voyeuristic experience into one that is positive, by sharing the image to which they are privy with the patient. Other aspects of clinical voyeurism that providers were aware of stemmed from a) cultural group differences (where being virtually represented is disrespectful) and b) discomfort with problematic symptoms being 'displayed' on-screen for diagnosis. It can be extremely uncomfortable for some individuals to feel watched – and providers expressed being cognisant of this:

> "*…if you…walk in and say 'Hi, I am here to test you or study you' you will get an atrocious response rate. No one will engage you. When we were involved [with telehealth] we went to [location anonymised] and on our very first visit we did not do any examination, no testing, nothing."* **[i1F]**

In this clinician's experience, by treating the first face-to-face consultation as a meet and greet, the looking glass effect was prefaced in a way that was slowly accepted given the

greater benefit it yields from providing health care to rural and remote populations. Similarly, when observing a problematic symptom that is embarrassing or self-limiting for a patient, clinicians were also cognisant of how the live streaming of the behaviour (performed in front of the camera for an appropriate diagnosis to be made) is a challenge. Providers can leverage the off-site practitioner to ameliorate the looking glass effect:

> "*…my area is having problems with swallowing. At first they did not like that - even when I was there in-person they did not like eating or someone watching them eating…I did spend a lot of my first observations sitting there talking to other people but with one eye watching what was going on. That changed over time as they realised what I needed to see, with the facilitator up there saying 'Come on, she has got to watch you eat…one or two mouthfuls will do."* **[i1F]**

Another facet of clinical voyeurism is how the clinician manages the patient's perception of security. Privacy protection of patient images that are digitally captured is vital:

> "*…we all need better disclaimers…but of course; theoretically with one wrong click we can accidentally send the images everywhere… this is a reservation.*" **[i33M]**

Other clinicians reported feeling less comfortable with using telehealth technologies such as video conferencing because of the live streaming of patient images. For example:

> "*…there is that little bit of aversion to it…because there is a big camera in the room, you know they worry about that, where is that broadcasting…whereas if you are in a cubicle and there are curtains all around it gives you a bit more comfort."* **[i12M]**

The discomfort a provider perceives in their patients renders some activities ill-suited to telehealth. The perception of clinical voyeurism is so uncomfortable in some medical fields that sensitive examinations are avoided:

> "*I have not been in a situation where I have had to say to someone, put a speculum in and point a camera up…I have not tended to go there fortunately. Anyone on the surface that came through that looked like they needed that kind of care, it is just not appropriate. They are better off having that face-to-face with someone."* **[i2F]**

### 5.5.2 *Sub-Facet 2: Picture-(Not)-in-Picture*

The providers' picture-(not)-in-picture experience is defined by: a) the eye contact mismatch that often occurs with video conferencing; and, b) the presence of the inset picture of themselves shown on-screen. Providers simultaneously negotiate how they are portrayed by looking at the inset picture of themselves (to ensure they are on-screen and visible to the patient), whilst looking at the patient to observe 'their body'. This experience can feel even more disorienting for the provider during video conferencing, because their eye-line is mismatched. It can appear that the provider is not looking at the patient directly (though they are via the webcam). This in turn facilitates picture-(not)-in-picture voyeurism:

> "*…eye contact is challenging. If you look at the person on screen, you are looking below the line of the camera. It looks to them that you are looking at their lap."* **[i2F]**

Clinically voyeuristic discomfort can stem from the providers' experience. This is because there is a trade-off between attentiveness toward how the patient perceives them (looking at the web camera lens) versus looking at the patient as they appear on-screen to the clinician (which means direct eye contact is often lost). Clinical voyeurism can also manifest for a service provider in a speciality where a still image needs to be captured (i.e., a digital record made) and transferred between clinicians. Providers describe to patients what their image is used for, particularly if using zoom or magnification:

> "*…it is very important for patients to understand what their body is doing and how we can try to improve it…we have a high-definition pan-tilt-zoom camera. We can zoom in and I can operate that. We have a site advantage to do that remotely, which is great. We do not have to say, 'Can you reposition that' or 'Put the camera there'. I just do it…once I say 'I am going to zoom in and look, that is all that needs to be done. It is not an interruption to the session. There were concerns for some patients not wanting to see certain images so we make some images smaller so it is less distressing."* **[i8F]**

Providers need to be mindful of the potential for distress that magnified images of body parts, particularly those that are not normally visualised such as internal structures that may be subject to disease, can cause for patients. Another way to manage the potentially

uncomfortable nature is to gain the patients' permission before zooming in. However, there are some instances such as emergencies where time criticality precludes disclosure:

> "…*for acute medicine like resuscitation, I need good control - very fast control so I can zoom… into the eye immediately on the screen. The current monitor is instantaneous, so I zoom in very quickly and cut across to the right place… split seconds make a difference…zooming up straight away is important too."* **[i13M]**

Similarly, clinicians should also be aware that other individuals might legally be required to be present during the consultation, but may not always declare themselves or make him or her known. This heightens the providers' experience of picture-(not)-in-picture voyeurism because they are discussing patient information without knowing who is not in picture:

> "*It is a bit bizarre. The interview is set up with the camera and the patient and there are often people who are behind the camera who I cannot see. They never identify themselves during the consultations…so if you are asking the patients about some personal things… that is a negative factor. I think it is partly because you are not getting what else is going on in the room, if there are other distractions that are playing a role as well - you are just with them. I do not know if the people who are not on-screen, whether they are pulling faces or how they are responding to what is being said. I do not even know how that is impacting [the patient] - I think, 'Well he might be saying that because there are [people] listening in to his conversation' - …they get in the way of some of the questions that I would like to ask."* **[i3M]**

Moreover, if the provider looks down or away from the camera (e.g., to reach for patient case notes) their movement 'off screen' is out of picture. As such, some providers verbalised why they were 'not in picture'. If unexplained, some providers described being concerns that the patient thinks they are inattentive - when in fact they *are* being attentive, because they are writing case notes. One provider notes this sensation arising from the literature as a function of '*voyeuristic detachment*' **[i25F]**:

> "…*in terms of the laptop…you are looking down…so much is on the computer so you are typing…It is the odds between looking at them and typing."* **[i32M]**

*An interesting visual appeared on-screen. The camera was either misaligned or the patient and GP at the other end did not realise that the 'zoom in' function was activated, because we had a large close up of the wall. The clinician beside me instructed them to re-position the camera. In these initial moments of the consult, all that was conveyed were disembodied voices from dismembered bodies that gradually crept into focus as the pan and zoom functions of the camera were adjusted.*

(Narrative excerpt from field notes)

## 5.6 **Understanding 3: Negotiating Intangibility**

Intangibility encompasses the clinicians' experience of the loss of haptic feedback through the physical examination that is enabled during a typical health care consultation. Haptic feedback refers to the sensory perceptions in terms of tactile sensation that a specialist clinician is normally able to gauge. The inability to perform a hands-on clinical examination is a challenge. Negotiating intangibility was commonly expressed [n=22] across two sub-facets. These two sub-facets, shown in Table 10 were: (a) *dismemberment*; and (b) *disempowerment*.

First, negotiating intangibility manifested as the need for providers to overcome dismemberment. Dismemberment related to the clinicians' inability to see the whole patient on-screen in the case of video conferencing. For robotic telepresence surgery and store-and-forward email, this was perceived in terms of the specialist only seeing part of a patient's body either in a still image or on-screen. Second, negotiating intangibility occurred for clinicians unable to examine patients themselves. This appeared to lead to a feeling of a loss of control over the delivery of the separated service. Thus, this was disempowering for specialist clinicians because it required interdependence on either another clinician or the patient for a self-assessment, or to defer the need for a physical exam to another time. This was particularly disempowering for clinicians who are used to relying on their own clinical judgement to make a diagnosis or who were unable to gain the information required due to the lack of expertise off-site for which the specialist is sought.

**TABLE 10. INTANGIBILITY: DISMEMBERMENT & DISEMPOWERMENT**

| | Representative Empirical Material |
|---|---|
| **Dismemberment** | 1) *"...when I am bedside I can put my hand on patients' throats to feel them swallow, but via tele I can put a marker on their throat, a bit of white tape, to see the larynx move up and down.*" **[i1F]**<br><br>2) "*…visual quality is important when looking at someone's gait pattern - how they walk. You need a high frame rate for a smooth movement…with one system; we watch patients in real time and record what is happening at the patient's end. We get those files for a higher quality review.*" **[i12M]**<br><br>3) "*…there are other cues like how the needles or scissor goes through the tissue and how much compliance you can see in the tissues…but it never replaces putting your hand in there.*" **[i14M]**<br><br>4) "*…there is no tactile sensation in the surgical robot unlike standard laparoscopy, where you can feel the tissues and resistance. You judge by the feel, how the tissues react under vision. You push and see how the tissues react. That gives you a bit of indirect feedback as to whether you are putting too much tension or not enough. There is a bit of feel in the robot. The robot will not let you push any further than a certain set amount, but if you are rough you can damage a structure. You do have to be cognisant of that and keep everything under vision… with many cases it is easier to get your hands in there but you are trying to do what is best for the patient.*" **[i21M]**<br><br>5) "*…the difficulty is we need a dedicated physical exam… we do need to see the specific…physical signs to work out the appropriate management…we can overcome this partially by having an experienced nurse or a GP at the other end where they can do that exam for us.*" **[i27M]** |
| **Disempowerment** | 1) "*I cannot feel the rhythm of their pulse; I cannot feel if they have got any temperature changes and I cannot actually assess some of the signs to see if they are stable. If they have oedema, I cannot put my hands on them. I talk to patients ask them to self-assess…my other issue was having faith in the patient's carer or support person to do that assessment and follow instructions.*" **[i27F]**<br><br>2) "*…if someone is short of breath, it is common for me to ask the nurse to put an ultrasound onto the heart so I can see the heart and make a decision if the heart is failing…that is instantaneous and is pretty quick and easy to do…but if you have it without the video, it is hard… it does not work if I need to have a procedure done and I do not think I can walk the nurses through it.*" **[i13M]**<br><br>3) "*…geriatric medicine involves physical examination, and there is a limit to what you can do via telemedicine…the interactions the clinician has with the treating staff is a key part of the transaction and that is hard to do via telemedicine. Often with telemedicine via residential aged care you are speaking with an assessor who may not be the primary care provider.*" **[i20M]**<br><br>4) *"I need to actually see how patients walk, and I need to examine them and feel the body of the kids, and examine their joints and do my own examination. You get a better feel, there is you know the element that if you are face-to-face with a person, with a parent, you are more likely to acquire the information that you need"* **[i17M]**<br><br>5) *"Occasionally we have nurses who take an interest. We see them weekly and then they disappear because they have been rostered off. It is disruptive; ideally, we need a nurse who developed an interest in viral management and viral hepatitis, who we can work with."* **[i3M]** |

### 5.6.1 *Sub-Facet 1: Dismemberment*

Dismemberment encompasses the sensation of only part of the patients' body being displayed on-screen. Several interviewees described the unfamiliar sensation of interacting with a patient when they instantly appear on-screen in front of them, rather than ushering their own patients in from a waiting room area. What is unusual is that the patient is often seated when the clinician first dials in and half of the patient's body might appear to be 'severed' by the boundaries of the computer screen monitor. Alternatively, perhaps only a head and shoulders is shown on-screen – essentially being 'dismembered' from the remainder of the patient's body in terms of the provider's vantage point. By contrast, sometimes the whole patient was described as initially in focus, but if the provider 'zooms in' to view a body part that needs examining (or to read a non-vocally expressive patient's facial expressions more readily) this can be lost.

Therefore, this practice is also one of dismemberment in the sense that by zooming in, providers actively decide which parts of the patient's body to 'exclude' from the on-screen visualisation. This is not a reality faced by providers in face-to-face consultations as all the sensory perceptions are enabled with direct interaction. Therefore, dismemberment can heighten the clinicians' experience of intangibility via telehealth:

> *"I think it works well initially… to do the tests…but I have deliberately chosen not to take referrals for something that will not work well through telehealth. That is one reason they have not done obstetrics; it is very hands-on. You need to lay your hands on a woman's belly. Looking at a picture on a screen…is not going to work."* **[i3F]**

Dismemberment requires providers to be cognisant of how they appear to patients virtually. In other words, just because one telehealth technology is innately 'richer' than others does not mean that it will suffice, because its efficacy is user dependent. One very experienced provider describes effective tactics to overcome the potential for *dismemberment*:

> *"That is really important how you position yourself. The camera should be above the screen; see that there? [Interviewee points to how the camera is set up]. You sit back a fair distance so you do not have the camera looking down on top of your head."* **[i11M]**

Overall, if the patient initially appears on screen in an 'already zoomed in on state' (i.e., of their upper torso or even just the shoulders and face), then a feeling of *dismemberment* (i.e. where's the rest of you?) can occur. Dismemberment can hinder the providers' ability to assess the patient in terms of their demeanour, body language, approximate physical agility and overall physical state. Face-to-face, this typically occurs in the moments from when the patient is called from the physical waiting room into the doctor's consultation room. With telehealth, this part of the interaction is removed, which can heighten the providers' perception of dismemberment because the patient 'instantly appears on-screen'. This also effects the providers' ability to conduct an 'end-of-bed-test', whereby a surgeon assesses the patient's level of capacity or how fit-for-purpose the patient is:

> *"By observing a patient walk in, smile, and talk to you, you have so much information. One extreme would be yourself {i.e., interviewee refers to interviewer} you are young, fit, and walk into the room and smile and shake hands, and we talk. I know you will understand the consultation; I know you are healthy and that you will go through surgery fine. On the other hand, let us say your grandparent walks in with an oxygen tank struggling to get onto the bed…and they do not understand the concept. That is not suitable. Then you have people in between. Often this 'end-of bed-test' and visualising patients gives you so much information."* **[i5M]**

As can be seen from this interviewees' description, the end-of-bed test is an important opportunity to see the patient walk into the room. However, in telehealth providers might feel socially awkward to ask the patient to initially stand up so that the doctor can 'have a look at them' without any sort of pre-interaction. By the time the pre-interaction, formalities, and greetings have passed, the 'moment' of opportunistic assessment has elapsed.

### 5.6.2 *Sub-Facet 2: Disempowerment*

Tactile sensation through or haptic feedback is central to many consultations. The examination of a patient's physical symptoms is often related to the diagnostic information required by clinicians. For some specialties, the requirement for a physical examination might be more salient than others. This can be the case for endocrinologists checking patient bloods and insulin levels through tests which is data based, versus physiotherapists checking patient movement which is physiology based. However, the inability to examine a

patient physically was disempowering for some clinicians. Disempowerment occurs because providers either rely on a) vicarious examination through self-reported data from patients or a third party such as a nurse, GP or other clinician off-site with the patient; or, b) forgo the physical exam altogether and adapt their clinical practice or defer the clinical exam.

Disempowerment related to the level of technological disconnectedness perceived between the provider and their patient in terms of the necessity of a physical examination. Moreover, the 'tools of the trade' that clinicians might typically carry - such as a stethoscope - are rendered useless in a separated service. To negotiate intangibility, some clinicians asked their patients to self-assess, and report their findings via telehealth. However, negotiating intangibility can be challenging, depending on the equipment used:

> "*We like patients to come in for their first assessment. I do not tend to see them there…once you have made the decision to start antiviral treatment you pursue it through to the end, so you do not need to examine patients that often. However, there are occasions where you do, and that is a deficiency in the system set up. One problem is with skin rashes, which happens to some people on the medication. The equipment available is not good at showing skin rashes."* **[i3M]**

The absence of specialist tools to examine patients can be disempowering for providers:

> "*Not being able to listen with a stethoscope [is disempowering], though it is possible [to listen virtually with a stethoscope]. But many diagnoses are made by talking to people. Psychiatric conditions of dementia are comfortably done via video. However, heart failure and cardiac valve problems are just about impossible. Increasingly investigations outperform physical examination, which is being superseded gradually by imaging. A CT of the abdomen is better than feeling the abdomen. Feeling is a cheap way to do that, because the patient is already there. If they are not, it is probably going to end up with a scan anyway. That you have a physical examination is almost irrelevant."* **[i11M]**

Some providers developed strategies to address disempowerment stemming from intangibility. For example, the presence of an off-site clinician, be they a nurse, GP or other clinician is common in telehealth. Clinicians can leverage the presence of the off-site

clinician as a third party to examine the patient. This may be complementary information alongside the patients' self-reported feedback:

> "*Physical examination has its place and I use it for every face-to-face consultation because history is very useful. I am quite reliant on that. However, in telehealth I usually defer to the GP to do a physical examination on our behalf where relevant. Often we are deprived of time for a full history. We get the GP to examine the patient and pass on the findings. It has a unique dynamic where…two practitioners take a history, another contributing by doing an examination. There is no substitute for examination…it will always have its place."* **[i26M]**

The specialist can leverage the off-site clinicians' co-presence with the patient to overcome the disempowerment they could perceive:

> "*It is handy to have another health care provider at the time [during telehealth]. That is a way to resolve the challenges of not having somebody in your room with a referral letter. In many respects, it means better health care because you get that story from the GP and sometimes the referral letters do not quite tell the whole story."* **[i26M]**

Some conditions need direct interaction; without this, telehealth can be disempowering for some providers. Therefore, intangibility renders some conditions unsuitable for telehealth:

> "*…there is a condition called Morphea. A photo of Morphea can just look like a shiny bit of skin with a bit of colouration around the outside. When you feel it, it feels like a scar - quite firm - so that is a nice confirmatory test."* **[i9M]**

The other aspect arising from negotiating intangibility which can be disempowering for providers using telehealth is that the vicarious examination may not be performed correctly. This could be because the individual off-site does not have the skills or training or ability to perform the examination (hence, why the specialist is sought in the first place). Or, on other occasions, interviewees reported that the examination was able to be carried out but that providers had concerns that they were not conducted to the same level of proficiency that the specialist would expect. This is evident in the following comment:

*"…the other problem is that sometimes when they [i.e., colleagues] do biopsies they do not biopsy the right bit…one of the things that probably gives people a bit of difficulty - and it is common - is scabies…scabies is easy to suspect but sometimes harder to prove. When I see a patient with scabies - an infestation of a mite in the skin - I never give them treatment until I have found a mite, dug it out of their skin, put it under a microscope and shown it to them."* **[i9M]**

This provider relayed that not all providers would go to the above lengths to be definitively certain of their diagnosis; however, the telehealth disempowered this specialist from being able to control the rigor of such a physical examination virtually. In terms of another providers' experience with using telehealth for vicarious examination, I recall the following:

> *The specialist needed to examine the patient. This required an off-site practitioner - a nurse was also present. The specialist asked general questions before checking the patient's strength. The results were relayed to the specialist who prescribed treatment.*
> (Narrative excerpt from researcher field notes)

## 5.7 **Understanding 4: Managing Identities and Roles**

Managing identities and roles encapsulates the provider's understanding of the tension perceived when interacting via telehealth. This exists between the providers' clinical *identity* as a physician versus their clinical *role* as a telehealth technician. Most clinicians were not trained specifically for a telehealth technical role, adding complexity to how specialists negotiate identities and roles. As seen in Table 11, this understanding juxtaposes ones' trained expertise as a 'telehealth clinician' against an adopted role of 'telehealth technician'.

**TABLE 11. MANAGING IDENTITIES & ROLES: PHYSICIAN & TECHNICIAN**

| | Representative Empirical Material |
|---|---|
| **Clinical Identity** | 1) "*You have a GP on the other end who says 'I cannot sit here for half an hour with the dermatologist', and a nurse who is not booked for half an hour. I am not going to do a tele consult in ten minutes, because I would not do a normal dermatology consult in ten minutes. I find that discord difficult. If I had a regular set up and a team at the other end who knew they had to have a nurse for a half hour booking and they sat there and wrote down everything I said, and the GP could write out a script that would be fine.*" **[i23F]**<br><br>2) "*…when I first started I thought 'this is weird, why not just record it, then I do not have to write notes'; that seemed much easier. However, you end up with a lot of audio notes for a brief written summary. When you go back and refresh your memory it is easier to read notes. If you had to listen to a 45-minute consultation from beginning to end to remember, it is not time efficient.*" **[I2F]** |
| **Technical Role** | 1) "*…the bedside surgeon has to [assist]. You choose them carefully… so if something went terribly wrong at least they can help, as opposed to an inexperienced assistant without surgical training. You have to pick your assistants carefully, certainly in this early stage in my hands.*" **[i21M]**<br><br>2) "*…it is wordier typing things when you could say it rapidly. However, the registrars are excellent in getting good on the ground training anyway - we are fortunate in that - because we have that group of registrars, it is usually handled quite well. They do a good job before they defer to us, so we are ticking off on the seal of approval and adding some more experience to it.*" **[i22M]**<br><br>3) *"…by seeing the image I know immediately what its quality is. Some are not able to take good photos. However, more and more images are from smartphones…when we started the problem was we had to provide every clinician with a camera…and one doctor did not find it because it was locked away. Now we recommend everyone does photos with a smartphone.*" **[i33M]** |

### 5.7.1 *Sub-Facet 1: Identity as Physician*

Identity encompasses how a clinician professionally defines him or herself. There may be multiple – even potentially competing – identities embodied by the one provider. One might define oneself as a specialist, then as a telehealth practitioner, then specifically by affiliation to a specialised sub-group (i.e., geriatrics, endocrinology, orthopaedic surgery). Further to such classifications, a provider might exhibit further specialisations or identifications based on their geographical location. Figure 4 visualises how a single overarching identity can fracture into many fragments. It is helpful to understand how some providers viewed their identity as a 'physician', before transitioning to their perceived role as a 'technician'. Terminology used by interviewees occurred in vivo and are retained for authenticity to the data. For example, orthopaedic surgeons were referred to as 'orthopods', dermatologists as 'derms', speech therapists as 'speechies', and physiotherapists as 'physios'.

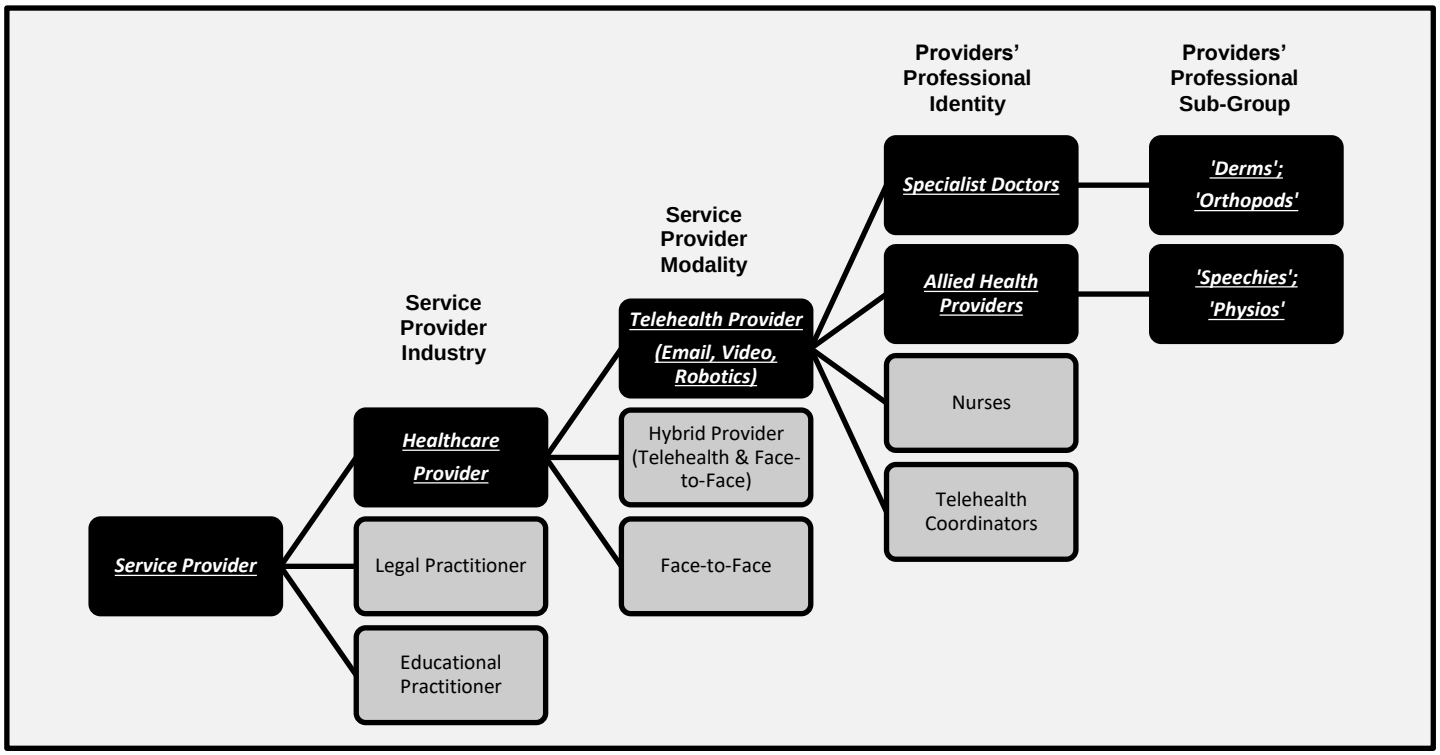


**FIGURE 4. A VISUAL MAP OF SERVICE PROVIDER IDENTITIES**

Embodying multiple identities requires providers to focus on foregrounding the clinical identity. This is established from the outset when introducing oneself to the patient:

> "*…I teach situation awareness, which is an aviation term but it needs to be in medicine. It means you need to be aware of where you are in* ***space****…the resident…I get him to hold the file up so I can see the name. I can see their name very clearly, we pull out the file, and we usually have a piece of paper saying 'Charlie Brown'* [*which is indicative for the patient's name].*" **[i7M, emphasis added]**

Here, the notion of space is taken literally and metaphorically to refer simultaneously to one's physical worksite and the virtual domain within which the provider delivers telehealth. This highlights the process of negotiating the difference between one's familiar *identities* as a 'physician' to one's less familiar *role* as a 'technician'.

### 5.7.2 *Sub-Facet 2: Clinician Role as Technician*

Roles encompass one's work-related duties, which may or may not be jarring in relation to one's identity. For example, in the case of transitioning from 'physician' to 'technician', the requirement or necessitation for providers to inf*use* telehealth technology means they have

to '*use*' the technology '*in*' the service to separate production from consumption. Providers often implement, navigate, troubleshoot, repair, and deliver a technology infused service as best they possibly can to an off-site patient who watches the whole interaction. As this interviewee describes, changes to technology can impact the stability of this process:

> "*If they change the software, if you fiddle with the software or somebody changes the software it is always a bit of a pain for me, but that does not happen very often. We are able to take the x-rays and present them to the patient at the other end who can see the x-rays. I use the mouse to point out what is going on. That is a useful explanation device if I use it wisely. However, somebody changed the software a little bit so that the word 'present' was there and I just press 'present'. It comes up on their screen, I can see where I am going, I can point to it but then they changed it to another word...Press the left-hand bottom [i.e., of the screen], up it comes, you have to wait for it. It is a twostep now, which for an old I.T. brain is not good."* **[i7M]**

Moreover, referring back to the previous interviewee citation, of note is the very detailed description of the tasks ingrained in the words used by this interviewee. This is seen with reference to specific technology based actions (i.e., point, press, see, wait). The description highlights that extra mindfulness is required, when managing one's professional identity-based tasks (e.g., point out the x-ray specifics) versus one's role-based technical tasks (e.g., press the right button to get the x-ray up on screen).

The provider's perception of their technical role can also stem from the integration of technology itself and how this changes work routines and practices:

> "*There might be a speech therapist in there looking at all the emails or who wants to have a phone call about something. I can talk to them in the afternoon - I might have a clinic in the morning so I cannot talk to them or email them until I have time. There is definitely a delay…for us in terms of identifying their issue and responding."* **[i8F]**

Additionally, ongoing maintenance and technology upgrades challenge providers to learn new systems each time a change is implemented. Leveraging the knowledge of others who are more technically familiar can assist the provider with overcoming this challenge:

"*…it was quite challenging because I was unaware of the set-up functions, and what the set up actually was. The nurses led me through it and it was pretty good."* **[i4M]**

With robotic telepresence, this learning curve required of specialists between professional identity and the clinical role of mastering the technology is tightly coupled:

"*…to do the full operation there is a huge learning curve…we like to think we are fairly well trained…we do thousands of different cases before we qualify. Normally, to get the qualification takes about ten years. This is people working sixty to a hundred hours a week, so we feel reasonably comfortable with new technology."* **[i5M]**

In this instance, practice or frequent repeated exposure to telehealth is a coping mechanism by which clinicians can familiarise themselves with technology. This can assist with desensitising the clinician to instances of technological failure and provide them with opportunities to develop strategies to deal with this possibility in a proactive way (by having a rehearsed plan) rather than in a reactive way (being exposed to a failure for the first time during a telehealth consultation). Another aspect of spatial separation is the haptic feedback (i.e., tactile sensations – or lack thereof) that are able to perceived by surgeons when interacting via robotic telepresence surgery with geographically (i.e., spatially separated) patients. For example, as the following surgeon describes of their own experiences when spatially separated from a patient during an operation (although still located in the same room, but not at the patients' bedside – they are inside an operating console):

*"…the robot system allows us to visualise everything in magnification in a 3D concept. Within a console, we insert our head and the vision is significantly larger. When we operate, our aims are to number one, cure cancer, and number two, achieve functional benefit. The nerves, which are not visible to the eye, by having ten times magnification we can see that and preserve as much as we can. Usually it is a two-person operation, so one person in there will be replaced by a robot and that person is in the console operating the robot and the other person who is assisting still needs to be there. The system is such that you insert your fingers into the joysticks and it imitates your movements. The robotic arms have double joints; it is two-jointed just like the elbow and wrist. Robotic arms are very small and need to be inserted into the body through an eight-millimetre incision. If it is unable to mobilise the organ well you have to do a little bit by a little bit."* **[i5M]**

Providers who are accustomed to interacting with patients during surgical operations negotiate integrating robotic technologies. Such negotiations have the potential to change their identity as a physician by subsuming their role as technology user, to that of a telehealth technician. For example, providers often take on the tasks of technical problem-solving and trouble-shooting whilst simultaneously providing health care services to patients via the technology. Often this is out of necessity; in the case of robotic telepresence, the surgeons may be the only staff available in a time critical moment with the skills to address a technological malfunction. However, because the patient is anaesthetised, providers who using robotic telepresence for surgical operations have some reprieve when technological malfunctions unexpectedly occur.

For example, given the potential high stress of an operating room let alone an unexpected technological malfunction, surgeons can focus on the technical task at hand (i.e., the operation and stabilising the patient and robot if possible, or if not undocking the robot and converting to open surgery. Patient anaesthetisation means that they are not privy to the events transpiring; thus, surgeons do not have to be simultaneously concerned with modulating their own response to the situation in front of the patient. In response to the situations I have described above, a surgeon experienced with using robotic telehealth stated that:

> *"I think that is a very good point. Even if we are doing a big open [surgery] case at the time I am normally a pretty focused person. I am looking into the patient's [operative site] and doing my thing anyway. There is not much face-to-face contact - there might be some verbal contact. There might be a bit of swearing, but you cannot even help swearing in the console – they [operating theatre colleagues] can still hear me anyway. If there is some [technological or operative] issue followed by some expletives, then everyone pretty much stands to attention. But I am not sure that we swear that much!"*

However, this same 'luxury' in the sense of not having to monitor one's reactions is not afforded to providers who are engaged with a patient in a synchronous audio-visual stream such as with video conferencing. With video conferencing, the patient is cognitively present (unlike when they are anaesthetised during surgery) and thus the provider must simultaneously be attuned to how they are portraying themselves when technology

malfunctions in front of the patient. This is crucial to the delivery of the separated health care service. Specialists that are interacting with such telehealth technologies have a big learning curve to overcome.

The learning curve lies in the training for hands-on open surgery versus using a robot to operate rather than one's own hands. The difference in tactile feedback and the variance in haptic sensations which can be perceived between robotics versus hands-on surgery are vast. As per the above interviewee's reflection, although there are key benefits (such as greater magnification, greater ergonomic control for long and arduous surgeries) there are also drawbacks in terms of the spatial (and temporal) dislocation that surgeons perceive from their patients. Thus, providers are faced with making a trade-off based decision as to whether the benefits of providing care via telehealth acknowledging the limitations that may arise outweigh the potential negatives of forgoing the opportunity to provide care virtually.

For synchronous interactions, tension can arise in terms of negotiating the difference between one's identities as a physician versus one's (potentially) competing role as a technician. Typically, this can occur from a provider's perspective with store-and-forward email. With store-and-forward email the time lag is unknown because the consumption will only occur with the specialist receiving and opening the forwarded patient data. The data includes images, case history and other salient information to the decision making bounded around the patients' care. As the following service provider recounts of their experiences with delivering separated services across virtual distances using store-and-forward email, the challenge for the provider can be the regularity (or lack thereof) with which one ends up having to log on to check if new referrals have been received:

> *"Temporal separation - I get a text saying there is a case waiting. I log onto the site three to six times a day."* **[i9M]**

In the above excerpt, there are changes to clinical practice stemming from service separation. This makes explicit how providers negotiate new ways around their existing clinical identity versus their emerging technical role. For example, with robotic telepresence, some providers reported experiencing slight temporal delays. Given that temporal delays do not occur with open surgery by nature of a hands-on operation, this experience has the potential to create a tension between one's professional identity (i.e., surgery is instantaneous) versus their emerging technical role (i.e., surgery is characterised by a slight

time-lag). Overall, this can intensify the need for providers to manage their professional identity versus technical their role during telehealth consults:

> *"Surgeons perceive it [i.e., service separation] but the patient is knocked out so they do not know…you learn by tactile sensation and vision and it becomes an ingrained secondary response inside your body. You know things are not going well if there is blood… [and by] how the tissues are moving. You know there is cancer in the specimen by the way it moves."* **[i5M]**

## 5.8 **Interrelating Separated Service Understandings: Temporal & Spatial Dimensions**

This chapter has identified four understandings of service separation from the providers' perspective. These understandings expressed service separation as an experience that could be depersonalised and clinically voyeuristic, requiring providers to negotiate intangibility and manage their identity versus role. Although these are qualitatively distinct understandings of service separation which can and do stand in isolation, it is also important in giving voice to the range of providers that were interviewed in the sample to consider the relation of each to service separation. If service separation is depersonalised, then providers might feel disengaged and disrupted by the technology infusion. If service separation is clinically voyeuristic, then providers might feel that they are either observing patients through a looking-glass with magnification and zoom; or, as an out of focus or off-screen image that is not in picture. If service separation requires negotiating intangibility, then providers could feel disempowered or that the patients they are examining are disembodied as they use the technology to zoom in to get a clearer view in the absence of direct physical examination. Finally, if service separation requires managing one's identities versus roles, then providers could feel that their professional capacity as a clinician is overshadowed by the capacity of the telehealth technology infused to separate the service and their own proficiency with operating it. Given the overlap between the frequencies of understandings, it is possible to map these onto an outcome space. Figure 5 is a visual representation of the four understandings along two dimensions of service separation: temporality and spatiality. Temporality and spatiality are central to Nicolini's (2011) work on practices stretching out in time and space. Time and space also feature in Schatzki's (1996; 2010) description of practices constituted in one's social life-world. Figure 5 illustrates the inter-relations between the four understandings.

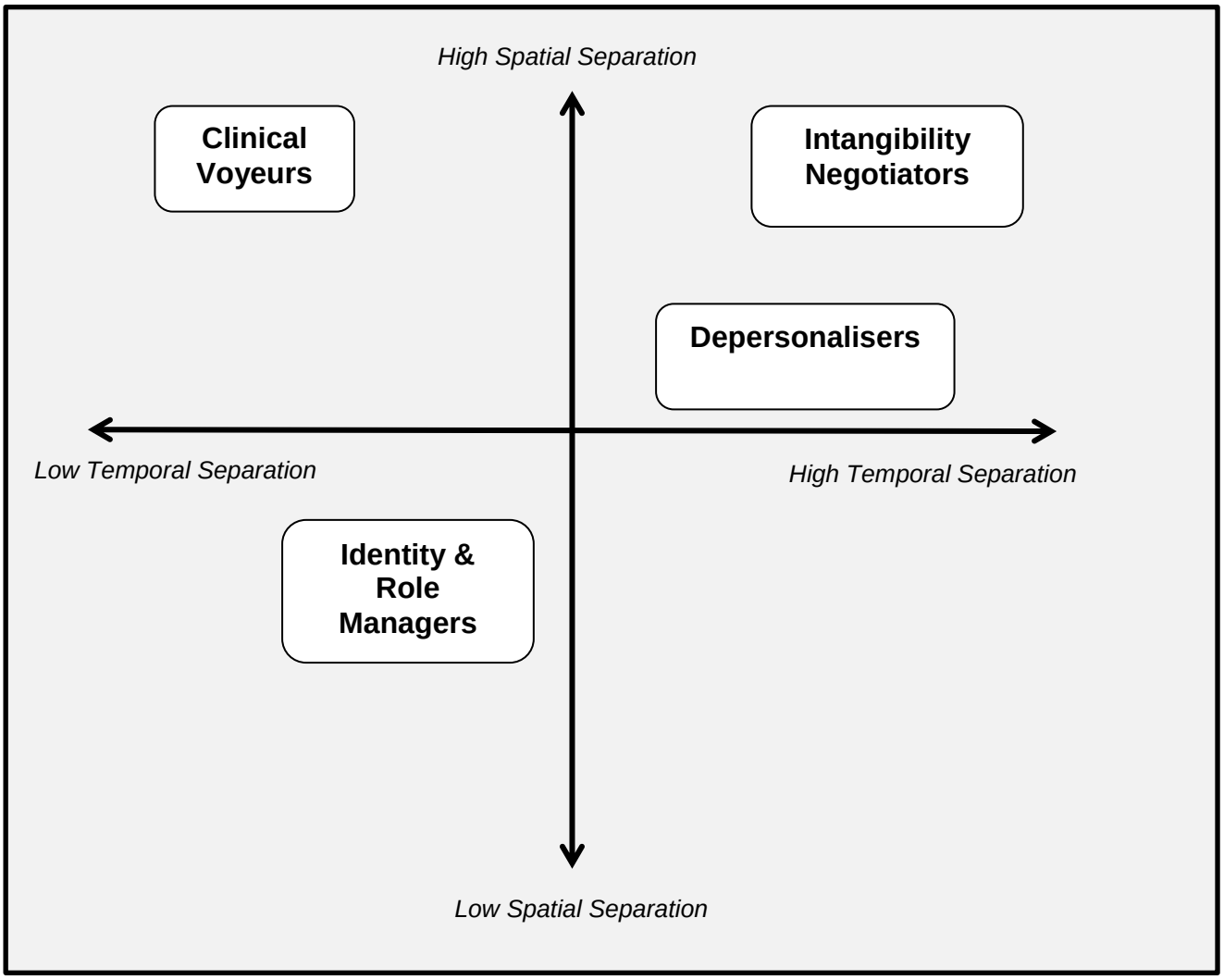


**FIGURE 5. INTER-RELATIONS IN THE FOUR UNDERSTANDINGS OF SERVICE SEPARATION**

The horizontal axis plots the extent to which temporal separation or a time lag in the service separation is experienced. The type of technology used in terms of its synchronicity or asynchronicity shapes this. The vertical axis depicts how spatial separation is experienced, because providers are not geographically co-located with their patient. The outcome space does not indicate a hierarchical ordering of the understandings. Rather, it is a visual summary showing how the understandings are qualitatively distinct from each other (shown by the grey space on the matrix) but also inter-related (shown by their relative placed in the outcome space) in space and time.

For example, specialist clinicians who experience 'negotiating intangibility' are both high on spatial separation and temporal separation. The former occurs when specialist clinicians are not geographically co-present to examine physically the patient and the latter occurs when there is a slight time lag because of the technology infused to separate the service

(e.g., robotic telepresence and video conferencing have less temporal distortion than store-and-forward email). Similarly, 'depersonalises' are more concerned with the experience of not feeling psychologically co-present with the patient, but are not as aware of temporal separation because they are focussed on what they are 'seeing' visually. However, the potential for technological disruption comprising visual clarity increases the perception of temporal separation due to time distortions arising from broken connections. 'Clinical voyeurs' were low on perceiving temporal separation because they were concerned with examining the patient; however, as a result of their focus on using the technology to zoom in or be in picture, spatial separation was highly salient. Last, identity and role managers were not as high on their perception of spatiality and temporality because their concern was to come across as close to face-to-face as possible.

## 5.9 **Chapter Conclusion**

In summary, the results presented in this chapter identified four phenomenographic understandings in response to research question: how do providers experience service separation via telehealth? Providers' four understandings of service separation that were identified from the empirical material as a result of the phenomenography were *depersonalisation*, *clinical voyeurism*, *negotiating intangibility* and *managing identities and roles*. Two sub-themes characterised each understanding of service separation. First, when experiencing *depersonalisation*, this involved *disengagement* from one's patients, which could be further exacerbated with *disruption* from technology failure. For those providers who experienced clinical voyeurism, this functioned based on a *looking-glass effect* where using magnification to zoom in intensified the overall degree of clinical voyeurism when observing patients through the camera lens. Similarly, *picture-(not)-in-picture* voyeurism encompassed any potential eye-line misalignment that could occur with video conferencing or being out of range of the camera. Negotiating intangibility related to the dismemberment that could occur where only the upper half of the body (i.e., torso, head and shoulders) is typically shown on camera, 'cutting off' the other half of the body and any body language this conveys; or, the feelings of disempowerment that the provider might have from not being physically co-present to either examine or console patients. Last, managing identities and roles involved straddling the possible tensions between one's clinical identities versus technical role when engaging with telehealth. In the next chapter, I explore the results of the empirical research related to research question two.

# 6. RQ2: How Clinicians Establish Trust via Telehealth

## 6.1 Chapter Introduction

> *The clinician dials the next rural patient - a new referral. The clinician has not met the patient before, who is being referred for a complex chronic case to be managed via video conferencing. Perhaps the clinician will meet the patient if they are required for a physical examination. It strikes me as the consultation begins that the clinician faces specific challenges which do not seem to be present for those that have a prior rapport with their patients, particularly from face-to-face interactions.*
>
> Ethnographic vignette, Endocrinology consultation

This chapter explores research question two: how clinicians perceive they can establish trust via telehealth. Complex interactions with new patients, patients requiring physical examination and with complex chronic cases requiring long-term management all present challenges to building trust from the providers' perspectives. As such, this chapter outlines the key trust themes that emerged from the analysis and explores the nuances of each in detail by integrating the interview and observational material. First I provide a table to overview the major theme which emerged regarding providers' experiences of forming trust via telehealth. I then expand on a series of trust building practices that were identified from the data. The purpose is to provide a deeper understanding of the six trust-building strategies that were engaged by providers via telehealth. I conclude by providing an integrative view of these findings as a series of trust practices that service providers leverage during the delivery of separated services.

## 6.2 Trust's Contextual Salience & Trust-Building Practices: A Brief Précis

A phenomenological approach was used to identify themes from the interview data related to how clinicians perceived that they could establish trust via telehealth. In total, seven themes emerged from the thematic analysis and are summarised in Table 12. Of these seven themes, six encompassed trust-building strategies used by providers when interacting virtually. The seventh theme was not a trust-building strategy per se. Rather, the seventh theme reflected the process of building trust virtually as both difficult and fragile, noted by the majority of providers in the sample (n=27; 82%). Noting this theme's prevalence amongst the interview sample provided a strong justification for the salience of exploring the nuances of trust-building from the providers' perspective in a separated service context such

as telehealth. Interviewees that expressed this theme acknowledged that in a separated service context, trust could be difficult for providers to form and fragile to maintain virtually with patients. Six qualitatively distinct practices were identified – collectively, these practices provided insight into how service providers build trust across the digital divide of telehealth.

Across all of the six trust practices, the percentage of interviewees who reported experiences salient to each theme ranged from a minimum of 40% to around 55% of the total sample (N=33). These six trust practices were inter-related across three overarching stages of separated service delivery: pre-consultation, during consultation and post-consultation. First, in the pre-consultation stage, two practices involved a) leveraging face-to-face meetings prior to telehealth consults to build trust (n=17; 52%), as well as b) transferring trust via third parties (n=17; 52%). Second, during the separated service consultation, three practices facilitating trust encompassed: c) conveying competence (n=16; 49%), d) normalising telehealth (n=13; 40%); and, e) establishing personal connections and reading non-verbal cues (n=18; 55%). Last, in the post-consultation stage, f) offering continuity of care was noted as one of the trust enhancing benefits of telehealth (n=13; 40%).

Table 12 reports the observed frequencies for interviewees that were noted in relation to each trust-building practice. Accompanying conceptual definitions are also provided along with indicative interviewee quotes. The purpose of table 12 is to ground these six trust building practices and the overarching contextual theme in the data before they are unpacked in more detail. Explanations of the overarching theme and six trust building practices are reviewed in relation to the sub-themes that were identified within each. This adds another layer of richness regarding the trust building mechanisms engaged in by providers to build trust via telehealth. To evidence the underlying rigour of the analysis that was undertaken, I intersperse my discussion of the findings with reference to salient observational data and interview quotes.

**TABLE 12. TRUST THEMES AND SERVICE SEPARATION STAGES**

| | Contextual Theme | Conceptual Definition | N (%) | Indicative Interviewee Quotes |
|---|---|---|---|---|
| *Salience of Trust* | *The Difficulties and Fragilities of Establishing Trust Virtually* | Trust is more challenging for providers to develop virtually versus face-to-face or in a hybrid model. In the absence of face-to-face contact, providers should engage the richest medium possible. | 27 (82%) | A provider emphasised that, *"Trust is very important between doctors and patients."* **[i27M]** but continued that it was harder to build in the virtual setting.<br><br>*"The big deficiencies [of telehealth] are the inability to engage in the rapport building that I think is an important part of the doctor patient relationship."* **[i20M]** |
| | **Trust Practices** | **Conceptual Definition** | **N (%)** | **Indicative Interviewee Quotes** |
| **Pre-Consultation** | **1.** *Leverage Face-to-Face Meetings* | Face-to-face consults before telehealth can facilitate trust if they are positive. This reflects a hybrid model where face-to-face (unseparated) and virtual (separated) services are provided. | 17 (52%) | *"…if you had contact with them before it flows easier into telehealth. If it is the first time, it is a bit more awkward and difficult to start. Until you develop trust… it is harder."* **[i12M]**<br><br>*"…it would be more difficult to establish that trust, have that relationship with someone you were meeting for the first time in a telemedicine capacity."* **[i24M]** |
| | **2.** *Transfer Trust via 3rd Parties* | A trusted third party (GP or referrer) can facilitate trust transfer to the provider. | 17 (52%) | "*[In telehealth] I go in with the GP…he trusted me and then it was 'This guy is okay'. Then they see me [via telehealth] by themselves… that is a process to gain trust.*" **[i26M]** |
| **During Consultation** | **3.** *Convey Competence* | Providers build trust and legitimacy by making professional status, role, expertise and competence explicit. | 16 (49%) | "*They need that confidence in your qualifications, as opposed to when you go to a doctor, you have looked them up and it is in a building and there is some understanding of legitimacy because that is the usual way of doing it."* **[i15F]** |
| | **4.** *Normalising Telehealth* | Providers' build trust by making the unfamiliar telehealth setting familiar by normalising telehealth usage contexts and the use of familiar technologies in separated health care service settings. | 13 (40%) | *"…introduce yourself, get verbal consent, say 'Are you happy to go ahead'… explain who I am, what I do, why we are having this interaction and what we get out of it."* **[i18M]**<br><br>To familiarise patients with the unfamiliar nature of telehealth technologies: *"I say 'I am going to zoom up with the camera so it is quite large on your face."* **[i8F]** |
| | **5.** *Establish a Connection & Read Non-Verbals* | Providers build trust by a) showing a personal interest and establishing a social connection with patients and b) responding to patients' emotions. | 18 (55%) | *"I engage in social chit chat, taking their history and notes... and with their environment …you use what you can to replace a handshake…and engage more socially."* **[i25F]**<br><br>*"…you like to know their names and background. Often the first time you talk a about their interests and hobbies, what motivates them, what they want to achieve."* **[i12M]** |
| **Post-Consultation** | **6.** *Continuity of Care* | Providers can build trust through regular interaction and providing a sustainable continuity of care for patients. This includes ensuring that the follow-up can be pursued virtually and with the same provider over time. | 13 (40%) | *"…patients come down from all over Queensland because that is where the specialists are, and then they have to go home. However, they still need a lot of care …they are terrified about leaving this protection. We say 'It is okay; we will see you next week…you will still be seeing me.'"* **[i1F]**<br><br>*"…a lot of trust is [in the] follow-up...you have a plan and want to see them again."* **[i32M]** |

## 6.3 **Contextual Salience: Providers' Perceived Difficulties & Fragilities with Trust**

Acknowledging and overcoming the difficulties and fragilities faced by providers building trust via separated services was an overarching theme spanning the six trust practices. This theme centred on providers acknowledging the challenges that can be faced when building trust virtually via telehealth. In all, 82% of the sample, or 27 interviewees described the difficulties and fragilities for building trust virtually. Only three providers perceived that trust building processes had not been difficult in their own experiences with telehealth. Two sub-themes for trusts' difficulties and fragilities were evident within this contextual theme. These sub-themes were based on the notion of: a) *trust being harder to establish due to a lack of physical touch and diminished proxemics*, which in turn b) *weakened rapport facilitation and resulted in trust taking longer to build*. Table 13 summarises these sub-themes along with conceptual definitions and indicative interviewee quotes. Overall this theme not only highlights the salience of trust in the context of telehealth, but also a unique service provider-customer relationship that requires trust.

**TABLE 13. CONTEXTUAL THEME: SUB-ELEMENTS OF TRUSTS' DIFFICULTIES AND FRAGILITIES**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Trust is harder to establish | The capacity for providers to use physical touch is removed with separated services. The use of proxemics (i.e., stance, posture, spatial awareness of another's 'personal space') as a way to build trust is diminished in separated services. | *"…it does take a little bit of time and a while to generate that and you certainly want to, you probably go into things a little bit slower in that circumstance than if you were face-to-face. You might for instance in face-to-face go on into your physical exam quicker than perhaps you would do in telehealth, where you need to develop that rapport more and communication first before you would do that*." **[i12M]** |
| Trust takes longer to establish | The scope for a connection to develop via rapport building with social gestures, such as a handshake or a comforting arm touch is removed. Thus, the rapport between providers and patients feels weakened as a result of service separation. Thus, it requires more effort and time for providers to build trust virtually. | *"I would say that telemedicine would put me at a disadvantage where I have to work harder to develop a rapport"* **[i27M]**<br>*"…the bond through video conferencing is not as good as face-to-face… it does not feel as solid as talking to someone face-to-face. I do not know why…but you can still get a fair idea of what is going on."* **[i3M]** |

### 6.3.1 *Trust is harder to establish virtually*

First, **trust was harder for clinicians to establish via telehealth due to a lack of physical touch and diminished capacity for proxemics**. Telehealth is still in its early

stages of diffusion in Australia. As a result, specialised training programs for those desiring the ability to offer telehealth training are the norm, as opposed to telehealth being a standardised aspect of medical training. As such, clinicians were found to negotiate their own ways forward to transfer the physical aspects of their particular speciality to a virtual realm where no direct touch is possible between provide and patient. Many of the difficulties that were perceived around building trust virtually reported by providers related to the inability to physically touch patients, such as for physical examinations or providing consolation or comfort. Virtuality can make it harder for providers to deliver certain aspects of health care which rely on touch. Examples include the inability of specialists to listen with a stethoscope, or to feel for tenderness during a physical examination. Some providers noted that, the close proximity arising from one's presence when interacting in-person with patients was most conducive to examination, and was better than what could be achieved virtually. Moreover, many providers expressed that the degree of interpersonal connection which they can leverage from the mere image of their upper torso which appears on screen via telehealth is less than what they are accustomed to achieving in-person:

> *"…the negative aspect is the lack of ability to be hands on in my speciality. Especially for the initial evaluation – that is really important."* **[i12M]**

Together these aspects facilitate trust through enabling direct interpersonal interactions – and are all hindered in the separated service context. More specifically, telehealth hinders a providers' 'stage presence' during the virtual services as a function of diminished proxemics. Proxemics in this sense can be thought of as the amount of physical space clinicians feel they need, for them to exert an appropriate level of emotional, professional and interpersonal connection with their patient. However, several providers commented that the need for compassion and attention in virtual services seemed to be more salient than when interacting face-to-face. These providers acknowledged the patients' vulnerabilities and perceived risks of interacting virtually.

> *"…it is more difficult to develop a rapport with therapists on telehealth because of the lack of physical proximity and contact, which you get face-to-face."* **[i12M]**

The potential difficulties for a provider seeking to build trust virtually can also be compounded in situations where patients present with conditions which are not conducive to telehealth. For example, some providers described 'complex medical problems' that were

consistent with co-morbidities. Such conditions typically render many patients unresponsive to treatment, leaving them either chronically unwell or requiring in-person care. However, even though a patient may be able to be cared for in a palliative setting via telehealth, a patients' individual preferences may necessitate in-person interactions. This could be the case with diabetes, dementia, asthma or psychiatric and mental health disorders. Situations where providers have not met patients previously might necessitate in-person care, and could be ill-suited for virtual management. For providers, this means that it can be harder to build trust for patients with whom one has not previously met, or who present with complex problems that may not typically be seen as conducive to telehealth because of the patients' pre-conceived notions around what is (and is not) possible:

> *"I think it [i.e., building trust via telehealth] would be very difficult, particularly if you have a person with a complex set of problems. It would be very hard to do that as an initial consultation over telehealth. I do not think we would take that on. Or you would take it on very warily …it would be more difficult to establish trust and have that relationship with someone [with complex problems] who you were meeting for the first time via telehealth."* **[i24M]**

Additionally, some providers highlighted that it can be particularly challenging to build trust with certain patient demographics via separated services. Without having previously met a patient, a provider does not necessarily have a good grasp on the suitability of the patient for telehealth. If the patient turns out to be ill-suited to telehealth management, then this could make it harder for a provider to establish trust. This could be the case experienced by paediatricians and geriatricians, who treat the young and the old respectively. Such groups can either be too inexperienced (i.e., the young) or too elderly to operate the technology themselves without the specialist being co-located to guide them through the process. This could result in the provider feeling that their recommendation to engage virtually might be untrustworthy in the eyes of the patient. To overcome these difficulties, most providers reported either changing how they went about the service delivery or acknowledging that some demographic groups are poorly suited to telehealth:

> *"There are ways you can get around that [difficulty] and change what you do…I know colleagues who do telehealth with small children and they found that more difficult… certain groups are much harder to do telehealth with."* **[i8F]**

As the previous interviewee describes, certain patient groups can present unique challenges based on how receptive they are to the notion of being treated virtually. In such instances, regardless of a providers' ability to build trust virtually, one's strongest interpersonal trust building efforts may still not suffice depending on the patient, and the circumstances surrounding their treatment.

### 6.3.2 *Trust takes longer to establish virtually*

The second sub-theme indicated that it was **harder to build a rapport – and hence trust - via telehealth resulting in trust taking longer to establish at the outset.** This seemed to be the case even when physical touch for clinical examination was not required. The capacity to leverage gestures such as a handshake when greeting a patient, or a light touch to the shoulder or upper arm to convey concern are all diminished by telehealth. However, providers disagreed about the cause underlying this challenge to rapport building. For some, rapport was seen as being heavily reliant on the quality of the remote relationship that can be established.

> *"When you do these things remotely relationships are going to be harder to foster and to develop rapport."* **[i12M]**

However, others saw the capacity for rapport building – even when virtual – as an innate characteristic that providers possessed. Such approaches viewed trust building (or lack thereof) as a reflection of a doctor's personality traits or their 'bed-side' manner.

> "…*rapport is something you have with the patient. Some people do that [i.e., rapport building] really well face-to-face, and some fail or are not that good, even face-to-face! At the end of the day, it comes down to the personality of the doctor*." **[i27M]**

Infusing technologies into unfamiliar contexts can be jarring for providers. This seemed to the case for many of the clinicians recruited to this sample, all of who are well-accustomed to having their own waiting room and ushering patients into their consultation room. Within telehealth, social gestures such as shaking a patients' hand and offering them a seat, as ways to signal compassion and professionalism are removed. As the following provider explains, extra time is then required to facilitate trust. This is because providers have to

negotiate alternative ways of interacting virtually by being attuned to their patients and how trust can be built:

> *"…the way a patient comes in as you greet them, as you interact with them, as you touch them…as you help them into a chair, as you do the interview with them…all of those aspects help to develop that relationship. Via the technology, it is a little bit more clinical. Usually, they are sitting there waiting to go before the call goes through and then you were not there and now all of a sudden you are there on the screen. There is less of that ability to interact non-verbally, to develop that rapport. I am fully convinced you can do patient interviews just as well on telehealth as you can face-to-face in terms of extracting and providing the relevant information to them, but it probably does just take a little bit longer to develop that [trust]."* **[i12M]**

Importantly, several providers did not see trust via telehealth as problematic. From dermatology and allied health (psychology, speech pathology) this represented the 'talking therapies'. Generally, these disciplines require little to no hands-on work for the conditions being treated (apart from specific cases in dermatology). For example:

> *"I have never had difficulty to my knowledge in establishing trust by way of telehealth. Patients are ready to participate fully with the consultant and I do not think trust has been a factor, I do not think it has been a limiting factor at all…they are interested in telling me what is the matter with them, and I am interested in telling them how I think it can be treated."* **[i16M]**

As can be seen from this interviewee's experience, their focus is on communicating a sincere response to patients that indicates their opinion on the patients' concerns. As such, trust building did not take longer with the talking therapies because the rapport facilitated face-to-face was similar to that which occurs virtually. Moreover, the regularity of a providers' exposure to telehealth reduced the difficulty that they perceived around trust building over time. After a few sessions and in the case of services that are well-suited to telehealth such as 'talking therapies', trust was salient, but no longer challenging:

> "*Generally speaking, I have not had any issues with trust. I think the more you do, after a couple of sessions that tends to provide both [provider and patient] with a little*

*bit more of an understanding of what the process is…. I think our clinical services are really well suited to telehealth actually…I cannot really think of anything*." **[i8F]**

However, the observational data suggests that at times, providers may have provided skewed responses to the issue of trust building, particularly those who indicated it was unproblematic in the telehealth context. As highlighted in the following ethnographic vignette, the response observed from a respondent in terms of their vocal tone, and body language (which cannot be conveyed via a quote alone) did not match the words spoken.

> I ask the provider about their experiences of building trust with their patients via telehealth. This is a question asked of all interviewees; however, it seems to me that this might be a particularly salient question for this interviewee who is a specialist within the 'talking therapies'. I note that when I ask this question, the interviewee seems taken aback for some reason (I do not ask to confirm whether this is the case, as I prefer to let the dialogue progress as naturally as possible). The provider's speech is faster, and there are a few pauses and changes of sentence mid-way through a phrase. This does not match the observation I had just noted – in context, the provider had just had a consultation with an elderly patient who was having a difficult time and had told the provider to 'go away'. Perhaps the question timing was poor; perhaps not.
>
> Ethnographic Observation, Interview Field Notes

I now discuss each of the six trust-building practices that were identified from the data.

## 6.4 **Trust-Building Practice 1: Leveraging Face-to-Face Meetings**

The first trust practice reflected clear benefits for providers who established a rapport face-to-face, rather than virtually, to facilitate subsequent telehealth interactions. Around 50% of the sample, or 17 interviewees described the positive influence that face-to-face meetings had on building trust at the initial point of contact. As indicated in Table 14, three sub-themes for leveraging face-to-face meetings to build trust via telehealth emerged: a) *the opportunity to meet face-to-face for the first consultation*, including b) *integrating face-to-face meetings over time after the first meeting*, and being aware that c) *face-to-face meetings are particularly important for building trust in sensitive (cultural or clinical) interactions*.

**TABLE 14. TRUST PRACTICE 1: LEVERAGING FACE-TO-FACE MEETINGS**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Trust is optimised when initially meeting face-to-face | An initial face-to-face meeting is the best way to transition to trust via telehealth. Trust via telehealth is easier when rapport is initially built face-to-face rather than via telehealth. | *"I think having that face-to-face contact initially is important."* **[i10F]**<br>*"I think that trust is not going to be there…until you get to know someone in that single face-to-face, and for us in rehabilitation they get to know us really well."* **[i1F]** |
| Trust is facilitated when face-to-face meetings occur over time | A hybrid model combining face-to-face meetings with telehealth facilitates trust better than telehealth alone. This is because positive experiences with face-to-face meetings over time facilitate rapport more easily than via telehealth. | *"I have already had that face-to-face rapport with them, so through this I think it is just an extension. It is a lot easier for me to build a rapport with them… some of the nurses have not met some of the patients as inpatients, and so they have not had that face-to-face contact. I think for them it is a little bit harder."* **[i3M]** |
| Trust is best facilitated face-to-face for culturally or clinically sensitive interactions- | Face-to-face meetings are important for building trust when cultural differences between the provider and patient arise or when sensitive information is being conveyed virtually. | *"…you'll spend the first amount of time in a patient interview exploring not just the reason they are coming to see you but you always try to get a look at that peripheral information as well and then you would use that on subsequent sessions to generate that rapport again."* **[i12M]**<br>If a sensitive health matter is being discussed virtually *"…we as clinicians would try and read that person. If you are going to see a specialist for the first time and they have never seen that kind of specialist, I think most clinicians try to see that [the patient is comfortable] at the first appointment. Well I am hoping they do!"* **[i25F]** |

### 6.4.1 *Trust is optimised when initially meeting face-to-face*

First, **the opportunity to meet face-to-face for the first consultation** was most effective to build trust. Many providers indicated that the foundations for trust-building between the provider and patient were stronger when facilitated in-person rather than via telehealth. This is because of the richer communication medium that face-to-face affords and its capacity for direct physical interaction. Accordingly, trust was conveyed more readily by providers who had the opportunity for an initial face-to-face meeting before progressing to telehealth:

> *"…it is easier to establish trust if you are treating somebody via telehealth if you have had a face-to-face encounter with them to begin with. That is easier to do face-to-face than via telehealth with certain people and at certain times depending on the connection in the technology side of things."* **[i10F]**

The need to leverage the opportunity for a face-to-face meeting can be even more salient when catering to patients with complex health needs. The absence of a face-to-face

meeting for such patients may even prevent the provider from feeling that they are able to treat them via telehealth, so leveraging this rapport is crucial:

> *"I think in general terms the patients that we would be seeing are people that we already know. They are either people that have already been through the unit as an in-patient or people that we have seen as an outpatient here. From that perspective, we already know the patient to some degree and they know us. Hopefully, there has been some sort of relationship built up… [to] have that relationship with someone who you were meeting for the first time in a telemedicine capacity. Maybe that is just because we have not done it much."* **[i24M]**

### 6.4.2 *Trust is facilitated where face-to-face meetings occur over time*

The second sub-theme showed how **integrating face-to-face meetings over time after the first meeting helps facilitate trust.** Thus, in the absence of meeting face-to-face initially, providers were next best positioned if they used a hybrid delivery model. Hybrid models combine face-to-face meetings periodically with telehealth.

> *"…if you have had contact with them before it certainly flows a lot easier into a telehealth consult. If it is a first time - understandably - it is a little bit more awkward and difficult to start with, until you develop the trust between the two. There is certainly a difference…I think this hybrid model of telehealth is a really good model in the in the rehab space and maybe that has got something to do with you bringing in that relationship into the virtual environment and you have already got a lot of those basics dealt with…but it certainly is harder."* **[i12M]**

Meeting regularly via telehealth is likely to increase the comfort of patients with telehealth. This in turn could be leveraged by providers to build trust as the interaction medium became more familiar. Over time, trust was able to be built as the patients' comfort with telehealth stabilised. Most conducive to trust-building was when providers integrated face-to-face meetings in conjunction with telehealth where possible:

> "…*at the end of the day we are communicating via this medium, and it is a different medium, I have to agree. I would think that probably patients may feel a bit more*

*comfortable face-to-face. At the start, for the first visit, it might be a bit different but I think with subsequent visits they will be comfortable.*" **[i27M]**

### 6.4.3 *Trust is best facilitated face-to-face for sensitive interactions*

The third sub-theme indicated that face-to-face meetings **facilitated future interactions of a clinically and/or culturally sensitive nature.** Sensitive service tasks include intimate physical examinations or conveying difficult news or results. Sensitive interactions typically require an intimate connection with a patient, which is optimally face-to-face. Importantly, the accrual of repeated positive interactions between a provider and patient is crucial to build up a positive memory bank of shared history. In turn, the better the rapport that can be established with the patient, the more the more resilient the relationship will be to conducting sensitive interactions virtually, rather than face-to-face:

> *"…if you know the person pretty well, and you already trust each other, and you are just having a chat about their results because you have seen them four or five times to get their blood test results, and it has come back okay, you can do that on a phone because they have already got trust in you. If it is the first time you have met them and you are discussing [something serious] you want a pretty immersive experience."* **[i11M]**

In addition to clinical sensitivities, how trust is established is a culturally bound mechanism requiring sensitivity and openness to face-to-face meetings out of cultural respect. In the absence of an initial face-to-face meeting, where cultural norms are bound around face-to-face interactions, providers have to work harder to build trust:

> *"…on our very first visit we did not do any examination, no testing, nothing. It was simply going sitting on verandas having a chat …there was a whole trip that had to be invested into developing that relationship and that trust. On subsequent visits, we worked with a couple of people more intensively than others and we developed that relationship. If you just link in…they know who you are, what your purpose is and that your intentions are for the best for them. Just us connecting and building a rapport…they were very receptive to it [i.e., telehealth]. We had already built up the face-to-face relationship and were able to continue that."* **[i1F]**

For providers who reported participating in both face-to-face meetings and telehealth interactions with their patients, trust seemed to flow more easily. This was expressed by providers through the behaviours that they felt were (and were not) appropriate to engage in virtually, as well as the provider's self-reported ease of interacting with the patient during culturally or clinically sensitive exchanges. The following ethnographic vignette describes my observation of this:

> *The provider dials in to the patient, and mentions as the call is connecting that they had seen when they were doing a rural visit recently. The patient answers and immediately recognises the provider, and initiates conversation. The provider mentions that in future a face-to-face visit might be possible, and the patient says they will wait to show the doctor a physical symptom until then.*
>
> Ethnographic Observation – Geriatrics

## 6.5 **Trust-Building Practice 2: Transferring Trust**

The second trust practice revolved around the service provider's capacity to leverage trust transfer via a third party. The third party, which could be a primary care provider, such as a nurse or a GP, was often a trusted person typically co-located with the patient. This transference mechanism is indirect, because it stems from the trusted third party's referral of the patient to the unknown specialist. However, patients were more likely to trust the specialist without having met them (because of the trusted third party's recommendation). Around 50% of the sample or 17 interviewees described this phenomenon, and the presence of an off-site third party was the norm for these interviewees, noted in 30 of 33 cases.

As shown in Table 15, three sub-themes emerged where trust was established: a) *more quickly and easily* in the presence of a trusted third party, because third parties b) *facilitated personal disclosure* and c) *acted as the providers 'eyes, ears and hands' at the distal site*. Because trusted third parties facilitate trust transfer from themselves to the specialist in the eyes of the patient, this aids personal disclosure of information required by the provider from patients to provide trusted diagnoses. The third party can also act as the provider on the ground to convey to the patient that what the specialist is diagnosing is accurate and trustworthy in the absence of the specialists' own physical examination.

**TABLE 15. TRUST PRACTICE 2: TRANSFERRING TRUST VIA 3RD PARTIES**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Trusted third parties facilitate trust | The trusted third party is able to assist with quickly and easily establishing trust. | *"…I think that is a very normal human thing to do to transfer onto the person."* **[i10F]**<br>"*You cannot replace a doctor, you cannot replace a nurse, and you need a health professional at the other end."* **[i27M]** |
| Trusted third parties are conduits for information disclosure | The trusted third party has prior knowledge of the patient through previous interactions which can facilitate the consultation. This often provides a wealth of knowledge that can be drawn on to convey sensitive and personal information more easily. | *"If they know them [i.e., the third party], it is a very big plus, because they go through some of the social niceties and make them feel at ease. They are also very helpful at talking about issues"* **[i20M]**<br>*"Because the doctor is there, most clinicians would actually do that [defer to the third party to facilitate trust] to just try because when you acknowledge someone they will relax."* **[i25F]**<br>*"…I can get support staff from my team - a diabetes educator or nurse - to sit with the patient, explain to them, take them through and as you said, just a gesture, tap on the shoulder, saying 'everything is going to be okay', 'we are here, I am just talking, we are just talking'."* **[i27M]** |
| Trusted third parties relay sensory information | The trusted third party can act as a facilitator of physical examinations for the specialist provider. This requires the specialist to trust the information which is relayed vicariously back to them by the off-site clinician. The clinician also needs to trust in the third party, not just the patient. | "*If you ask a question that makes somebody upset, your normal physical response would be to make physical contact. To hold their hand or touch their shoulder, but you cannot do that. There is lots of the interaction that is reliant on the limitations of what you have [requiring a third party*]." **[i20M]**<br>*"I think the patient sees the clinician is schooled by the GP and they know the exact things they are looking for in the consultation."* **[i16M]** |

### 6.5.1 *Trusted third parties facilitate trust*

First, in the presence of a trusted third party **trust was more quickly and easily facilitated**. The third party is typically an individual that knows the patient in the context of being part of their care team. GPs, allied health professionals, or nurse educators are not only trusted by patients but as medical colleagues, by the providers. This relationship is stronger where the provider and third party have a history of repeated telehealth referrals; or, where a relationship history is identified from previous face-to-face interactions. The third party is a trust conduit, because they have insight into the patient and providers' personality and can use this to mediate the interaction between the provider and patient more easily. This is particularly important where the patient is meeting the specialist for the first time virtually, and quickly facilitates the consult if clarifications are required on behalf of either party:

*"…we had a clinician at the other end which is really useful because they also have met the patient before so they know what their personality is like. That has been really useful when I ask a question and we are developing that rapport, the other clinician will say, 'Well what she is asking is this' or 'What she needs to know is this'. It is rephrasing those questions in certain situations if required to develop that more. Having someone familiar to the patient helped in that situation."* **[i8F]**

Because the third party is more attuned to medical terminology (as opposed to a family member), this also helps to quickly clarify points of misunderstanding. The third party mediates the virtual interaction so that trust can be transferred from them, onto the provider. This allows the specialist clinician to reach the point of the consultation in terms of obtaining necessary information and making a diagnosis more quickly than in the absence of the third party:

*"…sometimes the patient might misinterpret what you are asking, but the support person might get quite an accurate picture…because we have a support person in their own environment that helps establish rapport and trust for the sessions."* **[i29F]**

However, the specialist may feel an increasing reliance on the third party. If the third party is unavailable in future consultations, this can disrupt the trust previously established:

"…*trust differs to a certain degree - it certainly does differ when virtual because I think you are reliant so much on the GP who is already there to help*." **[i22M]**

In such instances, the trust can be disrupted when the third party is absent or replaced by a substitute (i.e., fill in practitioner such as a locum). Trust is disrupted in the sense that because it must always form with reference to a trustee, if the trustee changes then the relationship forms a different dynamic.

### 6.5.2 *Trusted third parties are conduits for information disclosure*

The second sub-theme indicated that the trusted third party can **facilitate disclosure of personal information** from the patient**.** Often, the information that is salient to patient management may not be readily volunteered in the absence of a trusting relationship, or may be skewed until an intimate connection is built with the specialist. Patients feel

comfortable to disclose information to the trusted third party that they would not to the specialist. The disclosure of personal information to a trusted third party, based on the interviewees in the sample was typically due to the fact that an ongoing relationship was already established with the primary care provider or third party, as opposed to the specialist. Thus, the third party is not only a trust conduit, but also provides a complimentary role to the specialist. Having staff known to the patient can support them in situations when they are required to quickly disclose personal information to the specialist:

> *"…we do have some nurses who are fantastic who know all about it and are so familiar with the treatment that they can say look, 'This guy, I am worried is going to have mental health issues'. That is what the nursing staff here in the clinics would do because they understand the therapy and they understand how it works and the potential risks. We have complimentary roles. There are things that the patients would tell the nurses that they would not tell me, which are very relevant to care, but the nurses know what to ask and they know what the issues are.*" **[i3M]**

However, some interviewees also noted that having a well-known third party off-site with the patient can be problematic under certain circumstances. The degree of personal disclosure required could engender reservations about the third party being privy to the patients' condition, and this could hinder trust transfer to the specialist. Sometimes, the greater the familiarity, the less comfortable the patient is with someone who 'knows them' being present. Moreover, patient discomfort from having a well-known trusted third party present could hinder the providers' ability to convey difficult news in a less emotional, more matter-of-fact manner, or to deal with 'embarrassing' topics that the patient would prefer interacting with a stranger for diagnosis. For example:

> "*I suspect when the GP is present they are probably a bit more circumspect because another person is in the room - particularly if that is their family doctor that they have seen for years. It feels a little bit weird because they might not normally have that discussion with that GP who normally sorts them out for pill scripts and routine stuff. They may feel a little bit less comfortable. If it is just the two of us, I do not think it makes a difference. I am usually reasonably good at being able to get into the questions in a way that does not make them squirm. I notice body language that says 'Okay that is enough'. They are shutting down, now we will go and talk about something else for a minute and see if we can come back to it later."* **[i2F]**

Attuning oneself to how sensitively the patient interprets clinical information and how the off-site trusted third party can be leveraged to ameliorate misunderstandings is paramount to trust being transferred. This is noted when conveying sensitive results via telehealth:

> "*I had to tell a patient that she had Type 1 diabetes. All the information we give is very overwhelming for patients. In retrospect, I felt it could have been better managed face-to-face…talking is one way, but all the other gestures are very important and we lack that - it is a disadvantage. Fortunately, I had a really good nurse at the other end who managed the situation. I called the patient later by phone to follow-up and see how she was, but I think at that point if I did not have the nurse at the other end it would not have been very good for the patient…you cannot just have a camera. You still need a doctor at the other end."* **[i27M]**

### 6.5.3 *Trusted third parties relay sensory information*

The third sub-theme highlighted how the trusted third party co-located with the patient can **act as the specialist's eyes, ears and hands** to build trust. This creates a reliance on the GP on behalf of the specialist, who cannot examine the patient themselves. Specialists need to trust the GP's examination of the patient, just as the patient needs to trust that the specialist will know how to elicit required information from the GP's examination:

> "…*you are reliant on the GP who is there to help in-person…patients understand because they have been referred by a GP the limitations of the situation, that the GP has done what they have to do as our eyes and fingers at the other end."* **[i22M]**

Whilst the patient may not know the specialist, both the patient and the specialist ideally have a rapport via the third party that is conducive to telehealth. This is important in rural and remote communities, where telehealth is quite prevalent.

> *"You definitely need somebody at the distal end…if you take some of the very small rural hospitals the person sitting in is often a community nurse who does a home visit and has known the person for years. They have a pre-existing relationship that you are actually tapping into, which you may not get face-to-face when you see a person one-on-one. The ability to take a history from the relative, GP and the patient works reasonably well"* **[i20M]**

However, the presence of mutual trust between the provider and patient in the third party does not necessarily mean that the specialist is exempt from the patients' independent judgement. Regardless of the trusted third party's recommendation of the provider, some information is outside the realm of trust transfer, such as personal interactions, which some patients may have pre-determined beliefs around how such information should be 'relayed':

> *"…I get the nurse to do it. It is not quite the same, but it is as good as you can do. People do get upset when you make a phone call sometimes. You cannot do much about that, except do what you can. It is a question of whether there is a substitute and in this case, we provide a service that does not currently exist."* **[i20M]**

Paradoxically, some providers highlighted that trust transference via referrals is often based on insufficient or poor quality information or by the frequency of exposure so that the provider is top-of-mind. That is, they question the trustworthiness of the referral system and suggest that patients may be too trusting of the referral process:

> *"…my colleagues think you are a good guy because you bump into them all the time. They would not know if you are a good surgeon or a sloppy surgeon, because they are not with you. It just comes down to appearances really… A patient will meet with someone else who may work with you, for example, a GP. How could they know that I am no butcher, crank, or something like that? You do not know. The only people who know you are any good are your colleagues, who work with you all the time, based on how your patients are. Patients are often very trusting. They trust that their referring doctor has referred them to a competent, trustworthy surgeon… but often I do not know the referring GP - just by name"* **[i21M]**

The following vignette shows how one third party facilitated trust:

> *I was fortunate to interview two surgeons who had worked together in delivering robotic surgeries. One would act as the primary surgeon; the other as the secondary surgeon or bedside assistant. Even if the patient had not met the secondary surgeon, they would agree to the operation based on their knowledge of the operating doctor (i.e., the primary surgeon). However, in the event of an unexpected incident, it was the bedside surgeon who had immediate access to the patient whilst they were under the knife.*
>
> Interview Reflection – Robotic Surgery

The observational data reinforced this theme, with trust transfer observed in 16 of the 17 interactions where a third party was present.

## 6.6 **Trust-Building Practice 3: Conveying Competence**

The third trust practice focuses on the importance of the provider emphasising their credibility and professionalism regarding telehealth. Professionalism was conveyed through indicating one's status within the medical community, their clinical roles and specialties, hospital affiliation/s and years of expertise. Conveying this information was understood to build the perceived credibility of the provider in the patients' eyes. Around 48% of the sample or 16 interviewees described this trust practice. Two sub-themes emerged, as shown in Table 16. These sub-themes included: a) *introducing oneself via one's status, roles, affiliations and expertise* as initial indicators of competence; and b) *displaying proficiency with using the telehealth technology*. This was indicated by provider behaviours such as ensuring an appropriate set up in advance of the consultation, or leveraging the 'inoculation effect' against technology's potential to fail. This included a verbal disclosure that puts the patient in mind of the technology's limitations before the consult.

**TABLE 16. TRUST PRACTICE 3: CONVEYING COMPETENCE**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Trust is built through proper introductions | It is important for providers to convey their status, expertise, role and affiliation/s at the start of the consultation to indicate their professionalism. | *"It is a good reminder to say 'I am from this hospital and this is my role'. It puts in their mind that we are here for this purpose and we have this specialist; rather than, it could be anyone who could be saying 'I am a doctor'. You build trust a little bit by saying 'This is what I am here for'."* **[i14M]**<br>*"…we explain that we are medical specialists and our role is to look after the patient's medical problems."* **[i19F]** |
| Trust is built through proficient technology use | The provider's ability to successfully prepare and operate technology conveys professionalism. It is also important to also prepare patients for potential technology failure through the inoculation effect. Competence also requires setting up the technology before the consultation. This requires checking the equipment and the room set up. | "*I think it is easier to gain trust if it is much more instantaneous, than if there is a delay*." **[i13M]**<br>*"…the functional assessment [i.e., via telehealth] is a bit operator dependent. I think that is an issue, so the fidelity and liability of technology is dependent very much on the quality of the assessor, and that does vary. In my experience some are fantastic and some of them are okay, and some I would rather not work with."* **[i20M]** |

### 6.6.1 *Trust is built from proper introductions*

First, providers built trust by conveying their competence and establishing their status as an expert in their medical field by **the way they introduce themselves to patients**. Formal introductions were amongst the first piece information that was relayed to patients

via telehealth for all of the interviewees. The introduction included the providers' name along with their professional prefix of 'Doctor', stating their area/s of expertise and sub-specialties, and their hospital affiliation. Referring to one's role as a consulting clinician in telehealth, and establishing their competence to transfer face-to-face health care to telehealth was important for trust building. Providers reported that stating their name, identity, status, role, and their affiliated organisation was a key way to build trust. For some, mentioning various countries where they had trained, and extensive post-graduate qualifications was also a technique to convey expertise. Doing so reinforced each provider's objective credentials to the patient, conveying legitimacy as a clinical provider.

> "*Patients should be aware of whom they are speaking to, that this is a specialist and that you are legitimate. They need to have that confidence in your qualifications…that is hard. It is probably something that is instinctively done rather than consciously done. I think just having basic respect for the patients and introducing yourself and explaining what your role is and asking them about themselves as well and letting them speak…not dismissing their concerns and asking if them if they have got questions. I think being honest and open about the limitations of your service…is probably what I would do in any consultation"* **[i15F]**

Stating these facts up front provided a social mechanism to replace the normative 'handshake'. In the absence of touch-based social facilitators, the need to leverage one's role and affiliation to a particular hospital or location becomes more important. For those providers who reported this experience, mentioning one's hospital affiliation helped the provider to further relay their professionalism and credentials to the patient, and to confirm that they were from a respected specialist facility. This carried credence for the specialists' trustworthiness; in the absence of the patient knowing the doctor or their name, the hospital affiliation and their alma mater could be construed as quality indicators for trust:

> *"There is no handshake - that does not physically happen. However, how you introduce yourself, saying who you are, your aims and why you are there opens up to the patient that we are here for a good reason. That helps them understand a little bit better and to ease the guards they have to start building trust. Within a few questions, you want to build trust. It helps a lot. They are seeing someone at a different site that they do not know, though some do remember."* **[i4M]**

The sense that a 'proper introduction' is required by highlighting one's qualifications, status and affiliations are quick facilitators of patient trust was evident. This feeling was palpable for some who described feeling inferior if they did not convey their professional identity:

> *"…sometimes I have the impression when I go out face-to-face that you might be lumped suddenly into that category of 'What is delivered out here [i.e. rurally] is substandard', which is interesting. I have sometimes had that feeling. It is probably because I have not introduced myself properly to the patient. At the end when I have pulled out a business card and given it to them and I say 'Give me an email or a call'…there is this sudden change in terms of who you are and what sort of service they have had delivered to them. It is quite interesting - I have felt that sometimes. Why should that suddenly change purely because you know a little bit more about where I am from?"* **[i26M]**

This provider notes different reactions from patients when they have, versus have not, introduced themselves in a particular way. This is viewed as having introduced oneself 'properly' to the patient, which includes emphasising status, credentials, specialty and city-based (as opposed to rural-based) location. In the absence of this information, this provider has subsequently produced hard evidence (a business card) to convey to the patient their legitimacy as a professional from a certain institution. As such, the process for a typical 'proper' introduction was noted in all of the observations, and the dialogue was a standard exchange that the specialists naturally used to initiate the consultation virtually.

The following ethnographic vignette captures the script of a typical introduction used by doctors to establish trust and convey their competence with the technology to the patient:

> *The doctor's first words to the patient on-screen are "Hello, I'm Dr [x], and I am a specialist at the [x] hospital in Brisbane". The doctor then checks that the patient can see them clearly on-screen, and zooms in on a head-and-shoulders close up so that the elderly patient can see more clearly.*
>
> Ethnographic Observation - Endocrinology

### 6.6.2 *Trust is built through proficient technology use*

Second, highlighting the **competence of the individual specialist service provider with telehealth technology** facilitates trust**.** Even if the provider introduced themselves via their professional identity and clinical expertise, if proficiency with operating the technology was not evident, then this could damage the ability for the provider to convey their professionalism, which hinders trust:

> "…*just with respect to the concept of trust, there are many different elements to it. There is the trust in the therapist's competence, there is the trust in their ability to work…over the electronic medium.*" **[i12M]**

Integrating technology to separate the service delivery necessitates that the provider takes time to convey to the patient that the technology is merely a tool by which quality health care is provided. There is a difference between the efficacies afforded by telehealth technologies, compared to the provider's competence with accurately utilising this (potentially) effective technology. In other words, technology use has to be seen by patients for the provider's competence to be cemented (and trust established):

> *"…they have to trust you and that you know what you are doing. How does a patient know that you are competent?"* **[i21M]**

As a result of transitioning the delivery of health care from the physical to the virtual realm, innovative techniques to adapt clinical routines for telehealth are required. Given that there is a large discretionary component to how one practices the delivery of health care (face-to-face and virtually), moving one's bedside manner to a 'webside' manner becomes of increasing importance. Tactics that were effective when face-to-face such as a tap on the shoulder are no longer feasible via telehealth. As such, how successfully the provider adapts their clinical speciality can help to facilitate trust in their professionalism:

> *"…the therapist has to be more proficient at being able to get materials up on the board, and being able to utilise materials in a different way, rather than being able to flick something across. You have to be quite innovative in how you present that material. Depending on the technology you are using, it might be simply an uploaded text document that goes up, it might be a slide that goes up, so you have to adapt the hard copy materials to a digital environment."* **[i28F]**

Technology is not always at the behest of the provider. Inevitably, limitations in terms of the potential to fail during telehealth are the reality. Technology failure can jeopardise the professionalism required for trust building. Additionally, technology failure has the potential to not only influence the trust in the technology but can also inhibit trust in specialists given the inextricable role that both the technology as the communication medium, and the specialist as the communication source, play.

> *"If the technology starts interfering with the quality of the interaction it does jeopardise the trust, it becomes like a circus. It gets in the way of all the good work you are doing to relate to the person."* **[i11M]**

> *"…the biggest issue is connectivity, because where you want to be treating people is in the home, but the connection is not always great in various areas in Australia… you are cutting in and out all the time. That is the big thing causing people not to trust it because it has failed. It is the most frustrating, irritating aspect."* **[i28F]**

One way providers can pre-empt failure's potential to jeopardise trust is to leverage 'the inoculation effect'. The inoculation effect is a tactic move that allows providers to minimise the potential for the patient to blame them if technology fails. The inoculation effect is best leveraged at the start of the consultation, after the introductory process is completed, and is verbally communicated by way of a frank disclosure. Thus, the aim is that technology failure is not misconstrued as incompetence on behalf of the provider from the patients' perspective:

> *"I was very upfront with all of our patients, saying 'We designed this technology, it works well, but we cannot guarantee that it will not drop out'. I make that really clear to patients. It is not to do with our technology or with us; it is outside of our hands."* **[i10F]**

Knowing that the technology has been checked is one way to aid the separation of the service. Advance set up shows one's competence and professionalism with telehealth. In the absence of this, the providers' professionalism can be damaged, which hinders trust:

> *"…this morning I did a telehealth consultation…they were not expecting him and they said 'We have no video', so we just did the consultation by telephone. That worked out okay, but it is not very good when those sorts of things happen. It does not look*

*very professional, and then people do lose trust in the technology and the process and I think that comes from both ends…I think it is a failure of the service, you are not delivering an appropriate service for the patient, which then is a reflection on what you are providing as a clinician.*" **[i26M]**

Technology failures, even if not directly the fault of the service provider, are perceived by providers as being attributed by patients to their competence. Technology failure alienates the provider further from the patient by foregrounding the virtuality, rather than the reality of the interaction. Ensuring the technology is set up in advance indicates a professional approach to the technology and its potential for failure, which is central to building trust:

*"…with any new service delivery you have to set it up appropriately. With new patients, they have to know it is a well organised, efficient service. That builds trust initially...it is really trust in the clinician; it is not really about the technology. It is more about how clinicians embrace providing that service via distance."* **[i25F]**

Although technology failure mars the service quality, if the technology has been checked in advance then providers can convey this to patients to show their professional sincerity. Choosing reliable, high-quality technology is the key to minimise the failure risk when setting up:

"*It obviously can drop out twice during a consult and this happens with… [video conferencing platforms] as you know, this really deprofessionalises [sic] and frustrates the whole process. Any loss of fidelity in terms of the vision it really just makes it an alien kind of experience, so it does not matter what you do…good, reliable high-quality technology is really important…. if you have not managed the sound and visuals at your end properly, that is not a good look. It does not make you look organised."* **[i11M]**

Conveying professionalism also extends to considering lighting, proxemics, physical appearance, clothing colour, and audio-visual quality. These factors convey professionalism, showing the provider's awareness of how they look on-screen to patients:

*"…there is a lot of style in the conversation, and how you make introductions and the way you set the place up so that it looks professional. What you do not want is to have the camera in an echoing room with you looking like some micro person in the background, with all your papers falling off your desk like you are a totally disorganised human being. You can professionalise your presentation. Even thinking about how you dress - there are issues around what kind of shirt you wear. This is all in the media but you do not go about wearing a white shirt with a heavily striped tie because you do not see that in the video. It causes distortion at the other end and is too bright. We should all wear pale blue or grey shirts. However, we do not coach our doctors to do that. It is all about how you present yourself."* **[i11M]**

Conveying professionalism also links to the preparation undertaken before the consult:

*"Making sure you have everyone in the room on the camera who needs to be there as part of an important role. That can sometimes require reconfiguring the room or moving to a different room if there are too many people. Or, clarifying that in certain situations you might need to zoom in on certain people as opposed to the whole room. That is important. Knowing what the technology can do and what type of camera you have and the image quality is very important as well. Knowing what you need to look at fine body parts or prostheses. Knowing the system and its capability, and investing some time to know how to make it better so the patient gets the image quality that they need to see from you [is important]."* **[i8F]**

## 6.7 **Trust-Building Practice 4: Normalising Telehealth**

The fourth trust practice reflects perceived unfamiliarity in the use of technology to separate health care services. Whilst email, video conferencing and even robotic telepresence may be familiar in other service contexts, they are less familiar in telehealth. Around 40% of the sample or 13 interviewees described strengthening the norms for using technology to facilitate trust. As shown in Table 17, three sub-themes emerged for building trust by normalising telehealth. The sub-themes were: a) leveraging the familiarity of the technology in its unfamiliar context, which is achieved by b) acknowledging the cyber-safety of telehealth, and c) setting up telehealth to mirror as close as possible a face-to-face consult.

**TABLE 17. TRUST PRACTICE 4: STRENGTHENING SITUATIONAL NORMS**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Normalising technology usage contexts builds trust | Making the service situation familiar is a key way to facilitate trust because it normalises the use of technology for health care provision. These can be ways to help minimise people's concerns or psychological barriers toward telehealth at the initial meeting. Repeated positive interactions can increase comfort and familiarity. | *"We did some research looking at what people's concerns were beforehand, so we knew a little about what were they worried about coming in. A lot of it was that they did not think they would be able to see well enough or hear well enough so we talked through that in our orientation."* **[i1F]** *"…at the end of the day we are communicating via this medium, and it is a different medium, I have to agree. I would think that probably patients may feel a bit more comfortable face-to-face. At the start for the first visit it might be a bit different but I think with subsequent visits they will be comfortable."* **[i27M]** |
| Explaining cyber-safety builds trust | Providers can emphasise cyber-safety such that patients are aware of the security, privacy and are well informed about what to expect from the telehealth interaction. | "*They are to be well informed, have consent, and understand the processes*" **[i28F]** *"Security is really important to patients, explaining this is a secure network…so they know the interaction you are having is secure and confidential… [is vital for trust] a private room is appropriate so they see and hear you easily."* **[i8F]** |
| Mimicking face-to-face setups builds trust | The greater the unfamiliarity of the technology infusion to separate the service, the more important it is for providers to convey familiarity by setting up the telehealth interaction as close as possible to a face-to-face encounter. | *"…slowing down speech, pausing when talking, and talking to people as you would in a face-to-face session as well [is key for trust]. Ensuring patients have time to respond and that you give them time to respond. Clarifying any questions they have and reinforcing what you have discussed in a summary by the end of the session so they are clear about the end point."* **[i8F]** |

### 6.7.1 *Normalising technology usage contexts builds trust*

First, providers can leverage the **familiarity of the technology to lessen the unfamiliarity of the usage context** to facilitate trust. The prolific nature of technology in our everyday lives and in the delivery of virtual services is well accepted. However, challenges are faced by providers because although the technology is familiar, its use in intimate service contexts such as health care is less familiar. To reconcile this gap between the familiar versus unfamiliar, providers can increase the comfort perceived with telehealth. In doing so, trust formation can be better facilitated because the communication medium is not acting as a foreign barrier that the patient is unfamiliar with in the health care context. Whilst the provider is unable to influence the patients' prior inexperience with telehealth, they can focus on the patients' familiarity with technology in general. Focusing on the technology's familiarity in turn can help the providers to normalise its usage in the telehealth context.

*"There is also that element of people interacting with physical exams over telehealth technologies that are a little bit less comfortable in front of the camera compared to face-to-face, so there is that little bit of aversion to it."* **[i12M]**

For example, for people with dementia, providers described the need to alleviate the stress by strengthening situational norms around telehealth usage. Providers can acknowledge the novelty of telehealth for geriatric patients who grew up without technology and how this impacts trust. Hence, trust is a more cautious process:

*"I think it is difficult for them to trust the situation but at the same time, they are fascinated by it because it is new. It does exist, the fascination is there and so we can keep their attention a little bit longer. Unfortunately, with advanced dementia and short term memory loss, their long-term memory remains with them for a far greater time and hence can be sometimes challenging but not impossible."* **[i4M]**

As a result of the enduring presence of long-term memory, years lived before technology are likely to be stronger than more recent decades where technology is the norm. This presents unique challenges for strengthening situational norms at each virtual touch point. However, for some patients, depending on the degree of cognitive impairment, this may not be possible and requires the provider to negotiate the trusted relationship carefully:

*"Sometimes I have a few elderly patients. They are very nervous, chatting away because they have not done telehealth before; they do not have a clear concept of what it involves. They are very nervous. I think that is the superimposed 'white coat hypertension' phenomenon that we see with patients coming in."* **[i18M]**

Easing unfamiliarity through conversation is an important way to overcome this challenge:

*"Checking they have understood what you are telling them, seeing if there are any other questions and making sure that you do not rush them through the interview - these are all things that help them feel comfortable with you. It does not matter that you are across the screen, trust is there."* **[i17M]**

### 6.7.2 *Explaining cyber-safety builds trust*

The second sub-theme highlighted building trust by **establishing clear norms and expectations around the cyber-safety of telehealth** Cyber-safety involves providers explaining the privacy, security and confidentiality of information conveyed via telehealth. Conveying to patients that the consultation is not recorded but only live streamed is an important point to establish to reassure patients and establish confidence in the service. This includes providers being clear on how patient information is used:

> *"How will it be used in the future in ways I have not anticipated or given consent for? Not recording is useful as part of that trust negotiation for people."* **[i2F]**

Another way to leverage trust through strengthening situational norms is to make sure that patients are well informed and consent willingly to telehealth. Providers can ensure that patients understand the implications of online treatment. Despite cyber-safety, providers can make clear the slim potential for others to exploit information streamed via 'hacking':

> *"…we have also established some boundaries with the patient at the beginning when they join the program to say 'What is discussed in the room will stay in the room'. I think that helps with the trust, and it is also quite helpful for me to have timely access to their medical records. That way the patient can be enquiring about other things and I can look into their medical records for them.*" **[i29F]**

Over time, the way of doing telehealth becomes normalised and the technological mediation of the service is no longer in the foreground in patients' minds. The normalisation of telehealth can be gauged from patient reactions to technology:

> *"…they are used to the robot roaming around in the health centre. I can drive it around and the patients ignore it, because they are used to it…it is a bit harder if the patient is using it for the first time, or has not heard about it if it has just been introduced. I remember when the robot came out four years ago, people were very curious. Kids were following it, wondering what is going on. Now they are so used to it, they do not see this as novel."* **[i13M]**

As situational norms surrounding the use of technologies to separate the service delivery are strengthened, it is easier for providers to facilitate trust. Providers who normalised technology reflected on how patients were 'desensitised' as it was no longer 'novel'. However, the generational gap between the young and the old was observed by some:

> *"…there is going to be some younger consumer groups that are much more au fait with technology and more trusting but older people, maybe not so much."* **[i31F]**

### 6.7.3 *Mimicking face-to-face setups builds trust*

The third sub-theme indicates that providers build trust by **implementing a telehealth set up that mirrors as close as possible the familiar, traditional face-to-face interaction.** The key to building trust in this way was to show that the consultation was just like any other and that there was not a difference apart from the use of technology in initially unfamiliar ways. Going slower, and taking the time to adjust technologies and giving patients a chance to adapt to the alternative service offering were all key antecedents that facilitated the provider's perception that they could convey trust via telehealth. This further helps to make the unfamiliar norms of telehealth, more familiar to patients.

> "*I try and set up the telehealth session as if it was a face-to-face session. When you come into the room, you have a private room. There is a sign on the door to say that there is a session in place…you introduce each other and say their names, especially if there are extra people in there. Just like in a normal clinical session, we go through the session and know what it is about so the patient and the carer will know what the plan is. I think it is giving them opportunities to ask questions or say 'Are you happy with that plan' or 'This is what we are going to do today' and getting that consent and using the camera system and being able to understand what's in front of them. Knowing that I have a camera and can see you and you can see me, confirming we can hear and see each other really well."* **[i8F]**

Overall, it was observed that even when the cyber-safety concerns of patients were laid aside, the unfamiliarity of the usage context has the potential to slow down the trust facilitation process. This was the case even though the technology itself may be quite familiar and seemed to vary depending on the nature of the clinical specialty and the sensitivity of the health care interaction that was taking place. As a result, providers can

acknowledge that certain patients or patient groups may not be suitable to telehealth due to the lack of situational norms governing how to interact when virtual rather than face-to-face. In all, treating patients virtually is already a challenging context for providers as noted with the first sub-theme; as such, being responsive to each patient's needs on a case-by-case basis is paramount to build trust via telehealth:

> *The doctor sees that the patient is non-responsive. Even after providing the patient with headphones, and including the off-site nurse, the situation does not improve. The patient is confused as they have had a recent fall which has disoriented them. The patient has not used telehealth before. Nonetheless, the provider senses that the patient is uncomfortable and that there needs to be time spent on strengthening the norms of integrating multiple technologies in virtual health care. After 15 minutes at the end of the consultation, the patient comments, "I'm used to seeing people on the tele, but not to talking to them and them talking back to me!" In terms of the poor audio quality, the patient also sees the norm of using headphones with a television screen that already is sound-enabled to be strange. It seems that this will take some getting used to. It seems that providers need to work harder to gain trust given the unfamiliarity of technology infusion in the health care context – and for certain patients.*
>
> *Ethnographic Observation - Geriatrics*

## 6.8 **Trust-Building Practice 5: Establishing Connections & Reading Emotions**

The fifth trust practice encompassed the providers' ability to establish personal connections with patients and read their patients' emotional cues. For providers, their role is not only consultative but also to play an affirmatory and benevolent role toward their patients. Trust occurs partly through building a social relationship and sense of connection with the patient. Around 55% of the sample or 18 interviewees described this trust practice. Three sub-themes emerged as shown in Table 18. These were based on a) *establishing social ties*, b) *reading patients' non-verbal behaviour*; and, c) *adapting one's own non-verbal behaviours* as a provider via telehealth.

**TABLE 18. TRUST PRACTICE 5: ESTABLISHING CONNECTIONS & READING EMOTIONS**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Establishing social ties | Personal social ties and interpersonal connections help providers to convey their bedside manner virtually. Communication and showing a genuine interest is pivotal for providers to build trust. | *"…good communication is the key to trust."* **[i10F]**<br>*"…talking to the child directly, especially if they are of a good verbal age, from three or four years plus, and talking to the parents when it is the summation time and you want to bring their attention once again, and summarising what we have discussed so far [is more important via telehealth]."* **[i17M]** |
| Reading the patient's non-verbal behaviour | The provider needs to adapt the way the read non-verbal cues in telehealth. Eye contact provides a 'window to the soul. Telehealth technology due to the mismatch of the eye-line can make this challenging. Cultural sensitivity requires providers to be aware of patients that do not show eye contact to persons of authority (e.g., doctors) as a mark of respect. | *"…provided I can look at you right now in your eye - I cannot, because I am looking at the camera on top. However, if I look down in the way I did earlier, I was looking down all the time and not engaging you as closely. I can try to make sure that my image is clear enough that you see me. I can engage you that way."* **[i13M]**<br>As one provider noted, to perceive that she could build trust via telehealth, it was felt that *"…. eye contact is very important."* **[i8F]** |
| Adapting one's own non-verbal behaviours | Explicit non-verbal language can establish a more personal connection, and is required when interacting via telehealth. This includes bigger smiles, waving instead of a handshake, using facial expressions, body language, hand gestures and posture. | "*I do use more hand gestures [via telehealth]. I suppose it is a subconscious thing"* **[i18M]**<br>*"I watch people [on-screen]...If they are too nervous, if they are clutching bags and paperwork… I will wait and watch their body language."* **[i25F]**<br>*"There is less of that ability to interact non-verbally with them to develop that rapport."* **[i12M]** |

### 6.8.1 *Establishing social ties builds trust*

First, the providers' ability to **establish social ties** with patients aided trust building. Providers who were emotionally present felt interpersonally connected. Although establishing social ties is important to building trust in face-to-face service interactions, the physical dislocation incited by service separation renders this even more important and thus challenging to establish in a virtual setting. 'Bed-side manner' relates to the provider's approach toward interacting with their patient and hinges on communication. Showing interest in patients more generally helps to establish social ties:

> "*…as a clinician you always like to know their names and a little bit about their background. Often the first time you talk to them, you talk a little bit about their interests and hobbies - what drives and motivates them, and what they want to achieve. This same thing applies though telehealth. You will spend the first amount of time in a patient interview exploring not just the reason they are coming to see you*

*but you always try to get a look at that peripheral information as well and then you would use that on subsequent sessions to generate that rapport again."* [**i12M]**

Interpersonal connections from getting to know patients give providers a way to connect with patients in subsequent sessions. In the absence of physical touch, these social and interpersonal connections became more salient and important to establish trust.

*"I am reflecting on a few patients; we have a chat about things outside of the medical condition. You find out about them, what is happening on the property or at work, and you might discuss that at follow-ups. You are establishing a relationship that you would otherwise have face-to-face… with the video conferencing you are still getting some non-verbal cues. This is a bit different to a phone call, which is why we do video conferencing so you can pick up some cues. The question is, are those cues different from the patient perspective? I do not know."* **[i26M]**

For other providers, establishing personal connections and reading emotions stems from closely watching patients' body language. Using humour and leading into consultations with social conversations around the weather was conducive to building trust. These tactics are enhanced by the team-oriented nature of telehealth. Rather than relying on one provider to drive the consult in a clinical 'back-and-forth' style of interview that tends to occur with dyadic face-to-face consults, the team can be leveraged to facilitate social ties in a more collaborative group-based discussion to desensitise the virtual distance:

"*…we work as a team, quickly introducing the patient to the fact that a consultant in Brisbane is looking after them. I can high five the kids, Mums and Dads usually converse… [there is] usually a bit of joking here and there, a little bit of fun conversation will usually bring them on board. Talking about the weather seems useful because it is always too hot, too cold, too dry, or too wet. That is our best way. Students are often coming to the clinic - we might have one or two students in the clinic - the process of discussing it with the patient and the doctor works pretty well."* **[i7M]**

The provider's awareness of the psychological sides of care is conducive to facilitating trust. The need for this awareness is even stronger via telehealth, and particularly salient

when interacting with certain patient groups. In the case of paediatrics, providers who established social ties with the child and the parent/guardian felt they were building trust:

> "…*talking at an appropriate level with the young person, if they are a tiny tot there is not very much to do, but you can have a little comment about them being cute, or that they have a nice dress on, or that you like their wild hair cut if it is a little boy. Often when you compliment the kid, the parents appreciate that because that is their kid. You are actually praising the parent for looking after the kid so well. It is those little things [that help build trust]."* **[i17M]**

Most providers acknowledged the role that listening plays for conveying genuine care and concern. Listening manifests through vocal tone, facial expressions, posture, and body language and questioning. If a patient feels listened to, trust is more easily facilitated:

> *"…a lot of trust is listening. If they talk to you then you are listening and not distracted. In terms of follow-up, you have a plan to see them again."* **[i32M]**

> *"…if you are a reasonable communicator you can still get trust via telehealth. I think you can if you are a good listener and you let people try to tell the story and communicate. I think it is a bit harder to establish rapport…you are not picking up on perhaps all the cues but I do not seem to have a massive problem."* **[i15F]**

In addition to listening is the importance of good communication. Establishing social ties is more desirable for a providers' telehealth referral base. Separating the service incites psychological distance from being geographically dislocated. This requires more effort from the provider to communicate well with patients in the absence of 'being there':

> *"…how I try and establish trust is by being open with them and discussing what we are going to do…I do try and establish it by just showing them that I am interested in what is happening with them and coming up with a plan and being open."* **[i3M]**

### 6.8.2 *Reading the patients' non-verbal behaviour builds trust*

The second sub-theme reflects providers' **reading the patients' non-verbal behaviour** as a way to build trust in terms of reading and responding to non-verbal cues. These cues include eye-contact, body language and other non-verbal indicators. However, if visual

perception is compromised, this limits what the provider sees on-screen and their capacity to attend to patients' non-verbal behavioural cues:

> *"…eye contact is tricky because you have your webcam and I am looking at the screen. I am looking at the patient, but by default, it means that I am not looking at the webcam. We are never actually looking at each other.*" **[i18M]**

Reading patient non-verbal behaviours related to gaining and maintaining eye contact:

> "*It is completely different per each patient. I guess there is probably a standard of about six different ways [to convey trustworthiness] depending on how the patient comes to you. If they look you in the eye and give you a big grin, you say 'Hi, how are you' and then they launch into a big story. If they keep their eyes on the ground and shuffle in, with a scowl on their face, you say 'Thank you very much for coming would you like to take a seat'. You do not sit down until they have sat down and you just see if they are okay. If they are scowling because they usually scowl, if they have their eyes on the ground and have not looked at you yet because they are about to tell you something they are really unhappy about, or if the patient has already been complaining, then you do something else.*" **[i23F]**

Eyes are 'windows to the soul' that provide a wealth of emotional information that can be read and responded to by providers. However, if the line of eye contact is disrupted by technology, there are implications for the provider's ability to connect personally. Reading body language is restricted as cameras only capture 'part of the picture'. Looking at the patients' face was reported by some as their closest alternative to direct eye contact:

> *"…you need to look down from where the green light is and back to their face, which seems like you are not looking at them - to look at them! It is strange. Because I am aware of it, when I look at them I see that they are not looking at me, but I know they are actually looking at the screen image of me. I know that they are not staring at the computer screen even though it does not look like they are looking at me. It would be nice if you could work out a way to actually whack the camera right in the middle of your screen, so you could look face on at the image and actually be looking straight down the barrel of the camera at the same time."* **[i2F]**

For some providers, the diminished capacity for gaining and maintaining eye contact due to the limitations of the technology poses certain challenges. The feeling described by this provider was a jarring experience trying to read patients' non-verbal behaviour in the absence of eye contact. This hindered her perception that she could build trust virtually:

> *"You absolutely cannot get trust without eye contact… it does not look like you are looking at each other [via video conferencing]. I wait for eye contact and do not speak until I know where I am. Sometimes I get them into the room to sit down and it is a good twenty seconds before I say 'Hi, thanks for coming'…I cannot sit there silently waiting for the patient…you have to get on with the job, and trust that they have a certain level of trust in the process…so it is really just weird."* **[i23F]**

Smiling is a key way in western-oriented cultures – such as the context within which the data was collected to non-verbally indicate one's level of engagement toward another individual. Smiling is known to be conducive to trust building (Gunnery and Ruben, 2016); however, smiles can be either spontaneously genuine or forced and superficial. Oculesics is linked to the 'Duchenne' smile as identified by one interviewee (a physician). Providers who observe muscle movements at the corners of the mouth, from the zygomatic major muscle, and the orbicularis oculi muscle, at the corners of the eye (Gunnery and Ruben, 2016), received authentic feedback on patient emotions. The zygomatic muscle raises the corners of the mouth and is present in both a genuine and fake smile. However, a genuine Duchenne smile also engages the orbicularis oculi muscle, seen by the crinkling of skin at the corners of the eyes and cheek tightening. As such, one provider reported using robotic technology in innovative ways to read patients' non-verbal behaviours and to understand the 'language of the smile':

> *"With the robot, what I do is reverse or zoom in very closely and look at the capillary size to see what response I am getting to what I am saying - whether it is happy or not, whether people understand me based on their smile. Some people smile; some do not. Some have no reaction and their facial expression is very flat.*" **[i13M]**

Reading patients' non-verbal behaviours helped providers to compensate for lacking the capacity for physical interaction. Providers can use specific strategies to establish personal connections by reading facial expressions if body language occurs off-screen:

"…*obviously, you will only get this much of the face. You are not getting the rest of the body language to see if they are fiddling with their fingers or crossing legs…so you do lose some of the whole-body picture. However, you will still pick up on a lot of what is going on with facial expressions during the consults."* **[i2F]**

Reading the non-verbal behaviours of those around the patient is another way that some providers reported gauging the patient. When doing so, providers were able to more closely attune themselves to the inter-relationships between the patient and their off-site members – typically one's family or partner. However, in order to leverage the implicit knowledge that a provider could gain from observing the body language of those around the patient subtlety and discretion was required so that their efforts did not seem disingenuous or distracted from a focus on the patient:

*"…there is a lot to be gained from watching the interaction between the patient and the partner. You can do that to a degree visually but sometimes it is quite subtle. How they position the chair, how close they are, how they respond to questions, who answers the question…. you can tell if somebody is feeling uncomfortable in an area or a topic quite easily, which is much more difficult via telehealth*" **[i20M]**

### 6.8.3 *Adapting one's own non-verbal behaviours builds trust*

The third sub-theme showed that **adapting one's own use of non-verbal behaviours as a provider** helped providers to build trust via separated services. Maintaining eye contact was a non-verbal behaviour used by providers to show attentiveness toward patients. Without mindfulness of how patients perceive them virtually, providers may seem disengaged. This damages trust building through a perceived lack of emotional concern:

*"…once there was a patient who wrote a letter of concern regarding one of his physicians who was looking down. Because the physician was looking down at his chart all the time, he was unaware that the patient was on the other side looking at him. The patient expressed concern that the physician was not listening. He was listening, but he was busy writing and therefore he was not eyeballing or noticing the patient. Obviously, it is a skill set that needs to be taught. I get to the stage now where all of our medical students…have to be taught how to do this. There is no difference*

*between teaching them how to be more effective in communicating with patients in a face-to-face consultation in the same room. It is the same.*" **[i4M]**

Providers can monitor their own body language and how they convey non-verbal cues via telehealth. But as the following provider indicates, this was not necessarily challenging:

> *"… I do not have my face stuck in the webcam, I sit back and I test the equipment to make sure I can be seen and heard. Once I know I am, I do not have to move forward. The dynamic is certainly very different, but in terms of the rapport – the end result - in many respects I achieve as much as I would in terms of establishing rapport and trust, even in a more virtual interaction as opposed to face-to-face. Anecdotally I would say in my case it is similar if not the same."* **[i18M]**

Providers also need to attune themselves to their own non-verbal behaviour and how this may be perceived by patients via telehealth. This includes bigger smiles, waving instead of handshakes, and using facial expressions, body language and posture to build trust:

> *"…I do it instinctively; mostly it is physical contact. You shake hands, make eye contact, and encourage them to sit down. They pick up on your manner, politeness and respect quite quickly and easily. It is hard to do that via video because you are plonked in front of them. There is less of the – actually, there is no emotional interaction at the start. The physical exam after you have taken the history is part of trust building. It demonstrates to patients that you are interested, concerned and you know them at a level others do not. You cannot do that via telehealth."* **[i20M]**

Adapting one's non-verbal behaviours helps to diminish the clinical nature of telehealth:

> "…*there are many non-verbals you do face-to-face which the technology does stifle. Just the way that a patient comes in; as you greet them, interact with them, touch them, or help them into a chair and interview them [is comforting]. All of those aspects help develop the relationship. Via telehealth it is more clinical because usually, they are waiting before the call goes through and then it is this feeling 'You were not there and now all of a sudden you are there on the screen.'"* **[i12M]**

Most providers developed coping tactics for how their own non-verbal behaviours seemed to patients. When looking off screen to write notes, one provider signalled to

patients what they were doing (still attentive despite looking away). Patients are unable to see off-camera activities; thus, without explanation, providers felt their actions could be misconstrued:

> *"The first few times we are making sure that you are looking into the camera and not at the paper with your writing on it…It is a bit unnatural, but if the video quality is okay, which it usually is, you can read expressions pretty well."* **[i15F]**

As the following observation shows, the degree to which this trust practice was implemented varied based on the perceived sensitivity of the consultation:

> *The provider dials in with a big smile. "Hello! How are you?" the provider calls, waving a hand back and forth. The provider prolongs the action for about five seconds, as the initial call connection fidelity seems unstable. The provider waits for the patients' response, and zooms in for a close up of their face. The patient is unaware, but it gives the provider the ability to see the patient's facial expressions. Leaning forward now in response to a change in the patients' emotional state, the provider waits until the patient looks at them, and then focuses their attention on the camera lens to convey eye contact (even though this means the provider cannot actually 'see' how they look due to the eye-line mismatch of video conferencing).*
>
> Ethnographic Observation – Orthopaedic Surgery

## 6.9 **Trust-Building Practice 6: Continuity of Care**

The sixth trust practice relates to the continuity of care maintained via telehealth. It draws on the general observation made by several providers that trust takes time to develop through repeated positive interactions. Continuity of care requires the same doctor to conduct follow-up appointments via telehealth. 40% of the sample or 13 interviewees described this trust practice. As seen in Table 19, one sub-theme emerged based on *offering ongoing care via telehealth by providing continuity with the same provider*.

**TABLE 19. TRUST PRACTICE 6: MAINTAINING CONTINUITY OF CARE**

| Sub-Theme | Conceptual Definition | Indicative Interviewee Quotes |
|---|---|---|
| Ongoing care with the same provider builds trust | Continuing the service delivery via telehealth over time increases trust in the service. Knowing that the same provider is accessible over time increases trust in telehealth, particularly for rural and remote patients who do not have immediate access to other health services. | *"Patients have their ongoing treatment with me online, so I have already developed that relationship and trust. It is not something that I would offer to everyone."* **[i22M]**<br><br>*"…trust is a time thing. You meet your dentist for the first time, particularly when he looks sixteen, and go 'Oh'. However, after three or four visits and everything went well and he has done a really good job, then you forget that he looks sixteen, and you go 'Right, okay, this is my new health service guy'. For me; trust is a time thing."* **[i1F]** |

### 6.9.1 *Ongoing care with the same provider builds trust*

**Offering ongoing care via telehealth by providing continuity with the same provider** is fundamental to facilitate the patient's trust in virtual health care. Communicating the capacity to follow-up the patient via telehealth facilitates trust in the long-term. This involves communicating a clear management plan and handling patient expectations around future telehealth follow-up consultations. Developing this expectation of continuity of care helps to facilitate trust:

> "*With a plan to see them in my follow-up clinic in their hometown, I do find trust developing. The follow-up is usually made with a plan to see them in three months' time by me back in telehealth…for the treatment we tidy up the loose ends and they feel that their needs are met."* **[i17M]**

Related to this is communicating to patients that their ongoing care will be provided by the same clinician. Typically, in rural situations the health care work force can be quite transient because providers are often temporarily relocated for clinical rotations, whilst completing registrar training. Thus, patients who see their providers' face-to-face are often unaware of who their provider is because of frequent changes in staffing and scheduling of appointments. The regularity of telehealth consultations with the same doctor in a recurring appointment slot is highly conducive to maintaining trust, as opposed to having the care delivered by multiple providers over time:

> *"…the best part about telehealth is they see one doctor every time…. in the public sector, we have six or seven doctors working at the same time. I ask my patients here, 'Who is your doctor' and at least 50% of them do not know. They say 'Every time I see a different doctor'. We have a teaching hospital, with many trainee doctors. Only one doctor is responsible for the care of the patient. That person is always around during the clinic, but he or she does not see all the patients. The junior doctors, registrars, residents, they are the ones who pick up the chart and call the patient. Therefore, the patient does not really get to see the same doctor. In fact, that is the most frustrating aspect of face-to-face appointments, because a new doctor comes after a while, but the patient has a condition needing treatment by the same doctor in the same clinic. That is a bit frustrating."* **[i27M]**

Repeated positive interactions via telehealth that occur with the same provider reinforce the kind of continuity of care that facilitates trust. This enables efficiencies in the service delivery because patients do not have to keep explaining their medical history each time they interact. This helps to effectively manage chronic cases via telehealth, building trust:

> *"…you want to have some relationship…particularly because these people are going to be our patients for life or for many years. It is not just a one-off."* **[i24M]**

> *"Skin problems are very chronic or recurrent. If I see a patient with psoriasis or acne, it is likely I will need to see them again. That is fine if they live in the next suburb, but if they live 800 miles away it is very difficult for them to come back, so we can do a follow-up via telehealth."* **[i9M]**

Whilst continuity of care with the same provider helps sustain trust via telehealth, a risk is that patients may perceive the provider to be constantly available due to the virtual nature of telehealth. If patient expectations are poorly managed, providers may face difficulties with easing back their availability versus compensation. Because patients might expect continuity of care through 24/7, poor management hindered the provider's trust building:

> *"…as a new practitioner…I do too much email. I see patients outside of their consult time, which I am sure a lot of other practitioners in other disciplines never do… certainly, email is very useful, rather than getting someone to come in. But there is a balance; do you charge them? At some point, it is too much, especially if you have someone who you try to email and they are cranky because you have not emailed them back soon enough or you have sent a few emails but they still want more. There is that difficulty - I think that always happens. They email you or speak to someone on the phone and think 'You have seen me once, therefore I have you for life', and think their consult fee covers your attention 24/7. That is hard because you are trying to keep expectations in order - not to have someone upset."* **[i32M]**

Not only does the frequency of access engender trust from a providers' ability to provide guaranteed follow-up. Increased interaction opportunities and immediacy of access to care in a follow-up management plan help the provider to establish trust:

*"…telehealth gives you more immediate access to people which in some ways helps you develop a rapport. Whereas if you have to come in for someone who lives a long way away in a rural area, and they take a long time before they can get there, you might only see them that once and then you will not see them again for a couple of months. However, for telehealth, there is the potential for you to be able to interact with them a little more frequently because you could go online and just do it. You do not have to have an hour-long session. You build rapport and trust by the potential to demonstrate greater availability to people."* **[i28F]**

In all cases where a follow-up appointment was required, providers closed the appointment by reiterating to patients that their condition could be managed via telehealth. Over time, the ease by which service providers are able to establish rapport by leveraging previous positive interactions is an important building block for trust. Given the dynamic nature of trust evolving over time, putting additional effort into reading emotions means that providers feel trust can take longer to establish via telehealth. Building trust via telehealth requires effort and communication to provide foundations for future interactions:

*"Like anything, it takes time to develop a relationship. It takes time to develop a relationship via video consult and with someone new. It takes time to build up a relationship to know who the person on the other side of the video is."* **[i13M]**

*The provider met a new patient referred to telehealth for the first time. This was after a series of face-to-face appointments at their rural hospital. The patient was elderly and had difficulty recalling who they had seen previously. The provider reassured the patient that they would look after their case management, which was a chronic lifetime review for diabetes. The patient seemed even happier when they indicated that this could be managed via telehealth in the long-term so that immediacy of access to the specialist was possible, should an acute diabetic episode occur.*

Ethnographic Observation - Endocrinology

## 6.10 Integrating Trust-Building Practices with Telehealth Activities

In synthesising the findings, a progression of the trust building practices emerged across the telehealth activity process that was explained in chapter four. Figure 6 summarises this inter-relation. A description of the progression of trust (y-axis) over time (x-axis) depicts the propensity of trust to increase over time, assuming two conditions. The first is that the provider positively integrates separated service interactions within the specifics of each telehealth activity. The second condition is that the provider perceives the patient has

confident expectations around trust as the separated service delivery progresses. The contextual theme around trusts' salience in terms of the difficulties and fragilities that providers perceived with establishing it typically emerged early on in the first activity involving assessing patient suitability and conducting preparatory work.

Should the patient be deemed suitable and the difficulties and challenges of trust-building not perceived to outweigh the benefits of treatment, then meeting face-to-face and establishing relationships as the first and second activities respectively were aided by the second trust practice of transferring trust via a trusted third party. During the consultation when the patient is vicariously examined, it was important for providers to convey their competence as well as their ability to establish a connection with the patient and be attuned to their emotions. When making a (differential) diagnosis in the fourth telehealth activity as a result of the vicarious examination, the ability to normalise telehealth as a usage context for familiar technologies was a key way for providers to convey to patients that the diagnosis could be trusted. Finally, in order to on-refer, re-appoint or close a particular patient case it was important for providers to convey that should further meetings be required, that not only was their condition suited to telehealth (if not, they would be on-referred) but that they would be able to receive ongoing treatment with the same provider.

## 6.11 **Chapter Conclusion**

This chapter addressed the second research question of the thesis: how providers perceive they can establish trust via telehealth. A contextual theme was providers identifying the challenges of building trust via separated services, highlighting the need to use trust building practices. Six trust practices were identified. First was leveraging face-to-face models of care, or integrating hybrid models. Second, providers can leverage trust transference via third parties. This included conveying competence, normalising telehealth, and establishing connections and reading emotional cues in the third, fourth and fifth practices respectively. Finally, providers could ensure continuity of care via sustainability of the telehealth service, with access to the *same* provider enabled. The next chapter synthesises the findings and discusses the thesis' contribution to the literature as result of seeking answers to the two research questions which motivated the thesis.

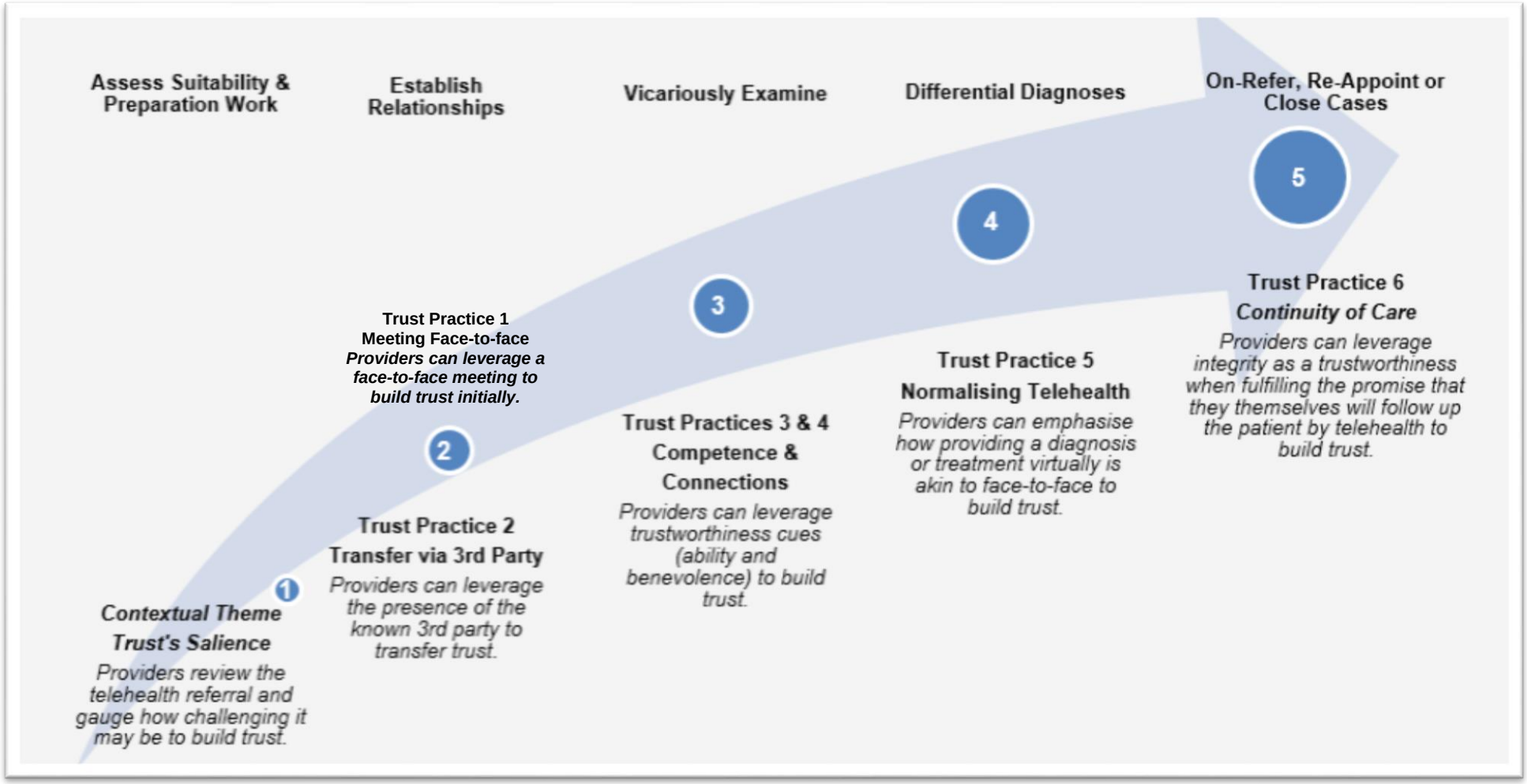


FIGURE 6. TRUST-BUILDING PRACTICES ACROSS THE TELEHEALTH ACTIVITY CYCLE

# 7. Discussion: Making Service Separation and Trust Visible

## 7.1 Chapter Overview

This thesis addressed two research questions. First, how providers experience service separation in telehealth; and second, how providers perceive they can establish trust with patients in the context of telehealth. The findings for each question were discussed in chapters five and six respectively. In this chapter, I explore the theoretical implications arising from the findings and how they advance knowledge of providers' experiences of service separation and trust in this context. I then highlight the practical implications of the findings, suggesting how clinicians can overcome the challenges of service separation and building trust virtually, as well as leverage the benefits arising from service separation. I also consider the generalisability of the results for providers outside of telehealth facing service separation. Finally, I discuss the limitations of the research and the boundaries of what this thesis achieved, and offer avenues for further research on service separation.

## 7.2 A Phenomenological Perspective on Service Separation and Trust

This thesis has provided the first foray toward developing a new understanding of service separation from the provider's perspective. The findings from chapter five suggest service separation is constituted based on providers' understandings of telehealth. Moreover, the findings from chapter six highlight specific trust-building practices enacted by providers as a result of how they perceive they can establish trust via separated services such as telehealth. Two key research questions motivated the direction for the thesis set in the empirical context of telehealth. First, research question one examined how service providers experience service separation. Second, research question two explored how service providers perceive that they can establish trust via telehealth. As a result of the research undertaken in seeking answers to these questions, several theoretical contributions were made to each of the service separation, trust in virtual contexts, and telehealth practitioner literatures. A discussion of each contribution is now provided.

## 7.3 **Theoretical Contributions**

### 7.3.1 *Contributions to the Services Marketing Literature: On Separated Services*

The services marketing literature to date has predominantly focused on examining service separation from the customers' perspective. An implicit assumption in this literature is that the customer's perception is more important to understand than the service provider. Yet it is widely acknowledged that services – including separated services – are co-created. The notion of co-creation and a services dominant logic has been a key focus for services marketers for over a decade (Vargo and Lusch, 2004). Given the co-created nature of services, an understanding of the providers' perspective on service separation is deemed imperative. However, the extant services marketing literature is yet to provide the same depth of research from the provider's perspective and experiences of service separation compared to what is available from the customers' perspective.

The services marketing literature has also noted that health care has long been acknowledged as a 'fertile field for service research' (Berry and Bendapudi, 2007). By examining providers' experiences of telehealth separated service provision, the thesis advances the literature on health care in services marketing by highlighting the enduring salience of technology infusion (Schumann et al., 2012) and the perspective of the provider in health care service contexts (Dagger et al., 2013; Dey et al., 2013; Meyer et al., 2004). The first research question draws recent work in these two sub-streams of the service literature together to explore providers lived experiences of service separation in the context of telehealth. This was achieved through highlighting how specialists in complex service contexts negotiated the infusion of various types of technologies to deliver their specialist knowledge *via* the technology (and not being replaced by the technology). Given the prominence of the role of the service provider in remote service delivery, it was logical to use telehealth as a unique service context within which to explore their experiences of service separation. As such, the focus for this thesis is complimentary to previous research on self-service technologies where the role of the provider is absent (Meuter et al., 2000); here, the flip-side is that the role of the provider is present in remote service delivery (but is yet to be well examined in the extant literature). Recently, there has been varied research in the services marketing literature predominantly from the perspective of the customer, spanning the motivation of customers to adhere to expertise of clinicians in medical contexts (Seiders, Godfrey Flynn, Berry and Haws, 2015), looking into customers' experiences of failure in high-risk service settings (Tuncay Zayer, Otnes, and Fischer, 2015) and how

customers can co-produce value in medication compliance with clinicians (Spanjol, Cui, Nakata, Sharp, Crawford, Xiao and Watson-Manheim, 2015). Fewer studies have examined the health care services contexts from the perspective of the service provider, save for a few notable exceptions (see Dagger et al., 2013; Day, Sinha and Thirumalai, 2013; Meyer Goldstein and Ward, 2004).

This thesis has addressed this dearth of literature through developing a phenomenological providers' perspective on service separation. I found that providers experience service separation in four different ways. The four understandings from the providers' perspective were that of service separation as: depersonalisation, service-based clinical voyeurism, negotiating intangibility; and, managing identities and roles. Two sub-themes emerged within each understanding encompassing: depersonalisation as disengagement and disruption; clinical voyeurism as looking glass voyeurism and picture-not-in-picture voyeurism; negotiating intangibility as dismemberment and disempowerment; and managing identities and roles as being a health care clinician versus a telehealth technician. Determining provider's four understandings of service separation highlights alternative ways that service separation is understood by providers. The findings in chapter five progress the literature's existing conceptualisation of service separation as spatially decoupled production and consumption (Keh and Pang, 2010) to encompass an alternative understanding-based perspective of what service separation means to those who provide it – not just characterising what it 'is'. The results bounded around the four understandings of service suggest that service separation is as much defined by the *retained* virtual presence of the service provider as it is the physical *absence* of the customer. Because services are co-produced, it is important to appreciate the provider's perspective. Providers must be willing to offer separated services in the first place, in order for the patient's perspective to be fully appreciated. The identification of these four understandings extends understanding of how remote services are delivered whilst still emphasising the presence of a human service provider, despite the infusion of technology.

For depersonalisation, the infusion of technology to deliver a service remotely meant that providers could feel substantially disengaged – a feeling which could be further exacerbated by technological disruption. Identifying the ability for a service to be a depersonalised experience for provider's points to the defining characteristic of services marketing based on heterogeneity. Heterogeneity, being defined by variability and inconsistency (Lovelock and Gummesson, 2004) reflects the different ways in how a service

is delivered from the customers' perspective as the service recipient. However, the providers experience of delivering the service remotely can be depersonalised to varying degrees. Thus, a potential source of variance for how providers experience service separation is related to the high levels of variability in service performance and how depersonalised a provider feels from their customer when interacting virtually (Zeithaml et al., 1985). Thus, an extension to the literature offered by this understanding around depersonalisation is whether the variability of a service, as one of services marketing's' defining characteristics, should not only be conceived of in terms of its performativity from the customers' point of view, but also the perceived depersonalisation that providers can experience which is heightened by service separation. What is interesting about the emergence of these findings is that the offering of a separated service is likely to be shaped by how a provider experiences the degree of depersonalisation from their patient. An assumption in the services marketing literature may be that technology infusion aids the standardisation of service delivery. This may be the case with self-service technologies (e.g., Meuter et al., 2000), whereby the processes of production and consumption may be more reliable or seamless through technology infusion to remove 'human error' or other person-based variabilities with the automation of service processes. However, unlike self-service technologies, remote service provision – as was the focus of this thesis - still situates providers at the helm despite the integration of technology. Thus, this thesis provides an alternative perspective on the technology-standardisation relationship suggesting that the presence of the service provider with remote service provision challenges the degree of standardisation in the service delivery which the technology possibly adds.

Clinical voyeurism encompassed a provider feeling that their observation of a customer was intrusive as a result of being privy to the behaviours of the patient or body parts of the patient which are not normally seen with the 'naked' eye. Through technology infusion, clinical voyeurism was enabled through specific functional tasks afforded to providers based on the technology's capacity. This included, for example, zooming in on the customer using the magnification lens on a video camera, to gauge the 'genuineness' of a smile by observing fine muscular contractions. As such, the perception of clinical voyeurism was a concern for some providers regarding how they felt that they were perceived as obtrusive or invasive and thus medically insensitive. Although the services marketing literature documents the emergence of the 'high-tech, high-touch' service paradigm as a result of technology infusion (Wűnderlich et al., 2013), the retained presence of the service provider for remote service delivery highlights the experiential nature of whether clinical voyeurism is

an outcome of the high-touch capabilities that are afforded by interactive smart technologies that are high-tech. Hence, a contribution to the literature offered by this understanding around clinical voyeurism is to unpack whether the high-tech, high-touch service paradigm has emerged for the better and to what extent this impacts how successfully the provider is able to deliver the serve remotely using technology. The contribution to advancing knowledge around service separation from clinical voyeurism is that the providers' ability to offer a full service, as could be achieved face-to-face (e.g., sensitive examinations), may not be possible via separated service delivery due to poor adaptability to the virtual world (i.e., some medical examinations are not suitable for virtual transfer).

Negotiating intangibility meant that providers were faced with the removal of direct physical interaction as a result of technology infusion to deliver the service remotely. Existing literature on intangibility, as one of the key defining characteristics of services marketing (Shostack, 1977; Parasuraman et al., 1985) indicates that services cannot be stored, experienced in advance or psychologically or mentally grasped (Bateson, 1979; cited in Lovelock and Gummesson, 2004). However, in the case of face-to-face service delivery, although intangible, the elements of the servicescape (Bitner, 1992) are able to be direct touched as a service artefacts that bring the environment in which the service is delivered 'to life'. However, this understanding around negotiating intangibility indicates that due to the technology infusion and remote service delivery, it is impossible for providers to touch the 'tools of the trade' that are typical to a servicescape in the delivery of a service. No stethoscope, thermometer or physical examination of the patient is possible in the case of telehealth; at best, the provider has to rely on the ears, eyes and hands of another in lieu of their own sensory perception at the distal site. As a result, services marketing knowledge is advanced by this understanding of negotiating intangibility by identifying how technology infusion to separate a service is not only about separating production from consumption (Keh and Pang, 2010), but also the fracturing of the servicescape into two separate physical sites. One site is for the physical location of the provider and the other is for the patient – both of which are connected by what is arguably a third (virtual) site. This third site can be thought of as the 'virtual servicescape'; an intangible, invisible and impenetrable space enabled by the Internet and technology through which the provider and patient interact; it impacts the service delivery by enabling production and consumptions' separation.

Managing identities versus roles identified that providers had to negotiate the salience of their own presence in the case of technology infusion for remote service delivery. Unlike

self-service technologies where the role of the service provider is obsolete or substantially diminished (e.g., Meuter et al., 2000), in the case of remote service delivery the provider is very much at the foreground, operating the service via technology from a distance (Wűnderlich et al., 2013). As such, given the novelty that still pervades remote service provision particularly in complex service contexts such as health care, compared to the relative familiarity of self-service technologies in less complex service contexts such as retail with automated checkouts or banking with automated teller machines, providers have to develop new ways of understanding how to maintain their identity ahead of their technical role. In other words, anyone can be a camera operator; however, only a specialist can use a camera to zoom in a patient for the purpose of a medical consultation. The barrier to entry for the medical profession precludes anyone without proper qualifications to use telehealth. Thus, professional registration as a specialist remains an important aspect of a doctor's identity. This is stronger than the role-based similarities that one's use of a technology might share with another service context where the professional barrier to entry is not sohigh..

In other words, providing medical advice as a specialist on an emergency paediatrics helpline, versus providing a mobile phone plan as an operator on a telco helpline are quite different in terms of the identities embodied by each provider (i.e., doctor versus call-centre operator), despite their shared technical role (i.e., operate a phone and internet connection to deliver a service). Therefore, the findings arising from this fourth understanding based around managing identities versus roles is for providers to avoid letting the technology used to separate the service go so far as to separate themselves from their own primary identity as a service provider. The findings around these four understandings was further enhanced through adopting an alternative theoretical perspective which focussed on the specific changes to service separation practice in terms of the activities performed virtually. This perspective was a practice-based approach (Schatzki, 1996) which focussed on what providers actually do to deliver health care at a distance.

### 7.3.2 *Conceptualising Service Separation 'Activities': A Practice-Based Approach*

By applying a practice-based perspective (Nicolini, 2011; Schatzki, 1996) to the analysis of the empirical material, I developed new insights toward advancing an alternative, interpretivistic definition of service separation from the service provider's perspective. In this way, I viewed service separation as a socially constructed phenomenon characterised by five specific activities which organised providers' understandings of service separation. The

activities included: 1) assessing suitability and doing preparation work; 2) establishing relationships; 3) vicarious examination; 4) making (differential) diagnoses; and, 5) on-referring, re-appointing or closing patient cases. The theoretically interesting component arising from the results shown in chapters four and five was the multi-faceted conceptualisation of service separation based on the four different understandings. From this I was able to articulate the possible sources of variance in these understandings based on sourcing data across 19 different clinical specialties infusing three types of telehealth technologies – store-and-forward email, video conferencing and robotic telepresence - to separate the service delivery. The insights that are gained from what is already known about the remote delivery of services that have been separated by technology infusion is that depending on the type of technology used, and the nature of the service interaction, that the service can be experienced in different ways. For example, depersonalisation was experienced more commonly for interactions where video conferencing was used, by contrast to store-and-forward email, which tended to be used by visual fields such as dermatology. Being conducive to image-based examination, dermatology is predisposed to virtual care – assuming equal visual quality, there is no difference viewing a patient image on screen or in-person. Clinical voyeurism was highly salient however for dermatology in the case of viewing these images on one's personal mobile device – an onlooker may not know that individual is a specialist and to an uninitiated observer it may seem strange for them to have images of various people on their phone. Negotiating intangibility was not so difficult for providers when using robotic telepresence given the advanced capacity for zoom and magnification; however, for fields that relied on direct examination - such as physiotherapy - technology infusion seemed to be particularly challenging. In the case of robotic telepresence, surgeons reported the positives arising from negotiating intangibility – it was highly salient from the enhancement of 3D vision and 10 times magnification which is not possible in face-to-face surgery. Finally, managing identities and roles seemed to be most salient for providers engaged with video conferencing, primarily because store-and-forward email and robotic telepresence are generally 'behind-the-scenes' back-stage service activities to which the customer is not privy – either because their presence is not needed (e.g., store-and-forward) or they are anaesthetised (e.g., robotic surgery). However, with video conferencing providers need to be attuned simultaneously in a live interaction as to how their identity as a clinician versus role as a technician is being conveyed to patients.

Overall, the importance of separated forms of service delivery as a result of technology infusion has never been more paramount. As Bitner (2000) predicted, the infusion of

technology has forever changed the ways in which services are delivered and will continue to shape future service possibilities in novel and unforeseen ways. Fast forward sixteen years and today, the role of digital health care and robotics in telehealth has been cited as one of the biggest predictors of change in current technological advances for services marketing (Parasuraman and Colby, 2015). The link between separated services enabled through technology infusion and trust is an important predictor, where recent research in services contexts on self-service technologies has shown that "…nonusers' trust perceptions had the greatest influence on the need for human interaction" (Collier and Kimes, 2013, p. 39). This suggests that there is a very real relationship between trust and human interaction during technologically infused separated service interactions, and the question then becomes how to engage nonusers. Nevertheless, these findings should be couched within the understanding that less is known about the experiences of providers that are not currently engaged with telehealth.

### 7.3.3 *Contributions to the Trust Literature: On Trust in Separated Services*

Trust has been identified as a key ingredient of a successful service experience, and is fundamental to the overarching concept of relationship marketing (Morgan and Hunt, 1994). Trust is important in service interactions for several reasons. In its presence, trust assists with relationship management (Eisengerich and Bell, 2008) where service relationships are strengthened by frequent positive contact points that engender enduring relationships (Dagger et al., 2013). In the context of virtual service delivery, if providers are perceived as trustworthy, then positive effects toward forming customers' positive attitudes extend beyond the technology infused to separate the service (Wünderlich et al., 2013). Recent research indicates that technology-based service innovations challenge providers to manage customers' risk perceptions (Paluch and Wünderlich, 2016). Perceived risk is an integral predisposing factor for the salience of trust. As such, the second research question explored how providers perceived they establish trust via telehealth. Overall, the findings related to research question two indicate that providers can leverage six specific trust-building strategies in order to convey their trustworthiness via separated services. The trust-building practice of establishing social connections and reading patients' emotional cues builds on existing literature regarding the importance of relationship management in service contexts (Eisengerich and Bell, 2008). In the context of separated service delivery, relationship management emerged in this thesis as even more salient, through the trust-building practice of ensuring continuity of care. In terms of leveraging the opportunity for

face-to-face meetings as a trust-building practice that was identified in this thesis, the ability for providers to engender enduring relationships through frequent positive interactions as noted in the services literature (Dagger et al., 2013) was also evident. Identifying this as a specific tactic that can be leveraged by providers early on in the relationship as a way to establish a positive foundation was key to facilitating the resilience of the relationship to ongoing care in the long term.

An interesting trust-building practice which enhanced the frequent positive interactions between the provider and customer was the presence of a trusted third party, especially in the initial stages of the separated service relationship. Thus, it is important to explore further the multi-stakeholder involvement that is often observed in separated services, compared to more traditional dyadic service interactions as is seen with face-to-face interactions. Finally, the trust-building practices for conveying competence and normalising health care as a usage context for technology helped providers to convey their trustworthiness and manage the perceived risk/s of engaging with a technology infused service. Perceived trustworthiness and perceived risk, based on this thesis' accepted conceptual definition of trust (Mayer et al., 1995) are known drivers from the extant literature that influence the trustor's behavioural intention to trust the trustee. In terms of trustworthiness' first sub-factor, ability, the trust-building practice of conveying competence mapped closely onto this concept regarding one's expertise, proficiency and task-oriented capacities (Mayer et al., 1995). However, the notion of conveying competence as a trust-building capacity advances the literature on interpersonal trust formation by suggesting that providers can actively focus on promoting their affiliations, expertise and qualifications to quickly gain swift trust (Meyerson et al., 1996) based on leveraging a halo-effect around their perceived competence (Mayer et al., 1995). Benevolence, as the second trustworthiness sub-factor, being defined by genuine care and concern for others (Mayer et al., 1995) mapped onto the trust-building practice of establish relationships and social connections and reading patients' emotions. Developing an interpersonal trust-based relationship hinges on the degree of interconnectivity and how attuned the provider is to the patient (e.g., Eisengerich and Bell, 2008). This thesis' findings suggest that an emphasis on 'genuine' care and concern (e.g., such as through being attuned to the authenticity of a patient smile as discussed in chapter five) is of paramount importance – particularly online where one's sensory capacities are hindered by the service separation. Last, integrity as the third trustworthiness sub-factor indicates that a promise will be fulfilled (Mayer et al., 1995); this can be seen as akin to the sixth trust-building practice for ensuring continuity of care. It is important for providers to be

able to offer not only the same quality of service as what can be achieved face-to-face, but also to affirm for the patient that they will be able to care for them virtually in the long term via telehealth. Delivering on this promise can only be evidenced with time; and it is this mutually reinforcing fact that renders trust a dynamic concept that evolves with the duration of a provider-customer relationship. Overall, this thesis provides the alternative viewpoint for as to how a provider can convey trustworthiness and manage perceived risk, in the unique context of separated services, by focussing on their own competence and desensitising the novelty of technology infusion to separate health care service provision.

### 7.3.4 *Advancing an Agenda for Research on Trust and Service Separation*

Research on trust in separated services is in its infancy. Currently, little is known about how providers can build trust via virtual service such as telehealth. Existing research on trust in virtual contexts has focussed largely on trust at the team-based level (e.g., Jarvenpaa et al., 1998). In technology-infused services, the focus remains on customers (Paluch and Wünderlich, 2016). Less research has focussed uniquely on the trustee or in this thesis the service provider. This is problematic because a key assumption to be challenged is this overwhelming focus on the trustor/customer. I problematise this focus in line with Alvesson and Sandberg's (2011) approach to 'questioning the literature' because the provider/trustee is the one who conveys trust cues and exhibits trustworthiness. It is the service providers themselves who actually need to build the trust of the customer. A key problem inherent is that this absence of research from the providers' perspective on trust building in separated services highlights that it is not known what the actual practices are that are used by providers in virtual service contexts. Hence, gaining providers insights into how they build trust virtually and the possible challenges they overcome in doing so, has the potential to reveal new insights into how trust is able to be built virtually.

This thesis challenges these assumptions and focuses on understanding the provider's experience of establishing trust via separated services. This revealed that most providers see trust as challenged by the separation of service delivery stemming from the lack of direct physical contact. To overcome this challenge, providers were found to engage in six trust-building practices. These practices advance understanding of trust in separated services through highlighting the importance for service providers to: 1) leverage face-to-face meetings; 2) transfer trust via third parties; 3) convey their competence; 4) normalise telehealth as a technology-infused medium; 5) establish connections and read patients'

emotional cues; and finally, 6) provide continuity of care via telehealth in order to build trust. Together, these findings enhance knowledge from the existing literature on how interpersonal trust is formed. More specifically, the existing literature has focussed largely on interpersonal models of trust development which are crafted from the logic of whether trust is formed (Lewicki et al., 2006). However, this thesis accepts that trust inevitably forms in many service relationships; yet the path to how this unfolds is relatively unclear. The virtualisation that occurs with separated services heightens the salience of understanding specific trust-building strategies that can be leveraged for interpersonal trust. This is a departure from existing research on interpersonal trust which has viewed the process as a more organic evolution between individuals, rather than as a process which can be tactically approached by providers who are informed of the unique nuances to trust formation via separated service contexts.

The overarching contextual theme that providers experience trust as more difficult to establish and fragile in the virtual services context reinforces existing literature on trust in virtual teams indicating that trust is more challenging to build (Jarvenpaa et al., 1998). The thesis affirming trust's salience in virtual services shows that this finding also extends to the health care context. A key reason for the salience of trust being more challenging to build for service providers and more fragile via separated services was due to the lack of physical touch. Whilst some of these trust building practices have been noted in the existing literature, there is a novelty to their emergence in the separated services context. Some of the trust practices which emerged from the analysis and seemed to affirm knowledge from existing literature included: trust transfer (second trust practice), and demonstrations of competence (third trust practice) and benevolence (fifth trust practice), enabled through repeated positive interactions over time. How providers establish trust in face-to-face services contexts is well documented. First, in relation to the second trust practice, leveraging the presence of a trusted third party to mediate the process of trust transfer has been long acknowledged in the services marketing literature as a key way to build trust. For example, in their landmark conceptual paper on the commitment-trust theory of relationship marketing, Morgan and Hunt (1994) highlighted four different types of partnerships – supplier, buyer, lateral and internal; any of which could be leveraged by a provider (or focal firm, as in the case of Morgan and Hunt's (1994) conceptualisation) to build trust. Second, in relation to the third trust practice, exaggerated non-verbal communication, being more explicit in stating one's professional status and showing competence with the technology (and not just one's professional knowledge) were all paramount to building a perception of one's perceived

trustworthiness in the separated services context in terms of ability, or 'competence'. For example, displaying listening behaviours and empathy (e.g., Dagger and O'Brien, 2010) and courteousness and attentiveness (e.g., Eisengerich and Bell, 2008) facilitates trust in services contexts. Third, in relation to the fifth trust practice, these aforementioned provider behaviours identified from the services marketing literature reflect existing conceptualisations of benevolence as a part of one's overall perceived trustworthiness (Mayer et al., 1995). However, this thesis extends this to understand how these trust-building mechanisms differ for service providers in virtual contexts characterised by technology infusion, as a result of service separation. These trust building practices, as well as more novel ones that are yet to be explored in the services marketing literature; reinforce the importance of trust and its study in terms of a providers' experiences of service separation.

These six trust building practices act as an organising framework for telehealth and are inextricably tied to the empirical context. However, there is generalisability from these understandings to other service contexts where technology is infused to separate the service delivery. For example, for the fourth trust building practice instead of normalising telehealth as a technology-infused medium, in other contexts this may involve normalising online education, or applying for mortgages online. The key for this thesis is the high salience of perceived risk embedded in the nature of health care, and specifically telehealth, as an empirical context, and the importance of examining how providers build trust in this environment. Therefore, if service providers have an informed understanding of how trust can be built with customers virtually via separated services, the process of trust formation may be quicker and more conducive to telehealth. Overall, the findings in relation to research question two suggest that trust formation could be a process that providers might strategically leverage. Seeing trust-building as a staged and strategic process on behalf of the provider highlights the importance of understanding the trustee's perceptions of trust and how providers perceive they can establish trust virtually.

### 7.3.5 *Summary of Thesis Contributions to Existing Literature*

Table 20 reviews the alternative phenomenological approach adopted in this thesis. A summary of the research paradigm, as well as existing approaches to studying service separation, is provided. The last column overviews the thesis' approach which enabled new insights to emerge regarding providers' experiences of service separation and trust. The objective is to provide a holistic view of the various paradigmatic, phenomenological,

conceptual, analytical, theoretical and empirical issues that were considered in crafting the research design that led to the emergence of the findings and their contributions to the existing literature as detailed in the preceding discussion. Importantly, the study was unique not primarily for its phenomenological, interpretivistic and provider-based focus to conceptualising service separation. The key extension to the services marketing literature and knowledge around trust in virtual contexts that was afforded from combining the different considerations outlined in Table 20 is that service separation was not described in terms of what it is (i.e., separating production and consumption temporally and/or spatially) but rather in terms of how it is experienced from the perspective of those offering the separated service in the first instance. In doing so, greater insights were gained regarding how an alternative conceptualisation of service separation could be conceived, and warrants investigation.

**TABLE 20. CONTRASTING THE THESIS' FOCUS AGAINST EXISTING LITERATURE**

| | Services Marketing Literature | Trust (Virtual) Literature | Telehealth Practitioner Literature | Thesis Focus |
|---|---|---|---|---|
| **Research Paradigm** | Positivistic | | | Interpretivistic |
| **Ontological Perspective** | Dualist (i.e., Separatist) | | | Non-Dualist (i.e., Relational) |
| **Phenomenological Orientation** | Determinism | | | Existentialism |
| **Approach to Conceptualising Service Separation** | Customer reactions to service separation | Trustor's perceptions of trust formation | Antecedents of telehealth uptake | Service separation as socially constructed |
| **Unit of Analysis** | Customer's perspective | Trustor's perspective | Provider and patient perspective | Providers (specialists and allied health) |
| **Subject of Analysis** | Service separation reactions | Trust Formation | Service quality and uptake | Provider's *experience* of service separation and trust-building |
| **Sources of Variance** | Customer across different service industries | Levels and referents of trust | GPs, nurses, patients in particular clinical settings | Providers in different fields, using different technologies. |
| **Theoretical Motivation** | Mostly theory testing | Mostly theory testing | Mostly theory testing | Toward a new conceptualisation of service separation |
| **Empirical Material** | Mostly experimental designs, surveys | Mostly experimental designs, surveys | Mostly surveys, interviews | Interviews, observations |
| **Empirical Context** | Retail, Banking, Education, Health care | Virtual Teams; Inter and Intra Group Member Trust | Telehealth in specific sub-specialties and medical fields | Telehealth; Doctor-patient virtual relationship (i.e., provider-customer) |

## 7.4 **Practical Implications**

Practical implications arise from these contributions for health care clinicians and policy makers. To this end, I now provide an overview of the relevance of the findings before summarising service providers' four understandings of service separation. I also highlight service impacts and behavioural changes, and specific practices that could be strategically used to build trust. Because these trust building recommendations are drawn from the empirical material and findings, need empirical testing is needed as they are based on my own insights (plus some suggestions offered anecdotally by participants during interviews).

### 7.4.1 *Practical Implications for Clinicians*

Through a practice-based approach, this thesis found five distinct activities characterise a process cycle of telehealth service delivery. These included (1) assessing patient suitability for telehealth and engaging in preparatory work ahead of the consultation; (2) establishing stakeholder relationships; (3) vicariously examining patients; (4) making (differential) diagnoses; and, (5) on-referring, re-appointing or closing patient cases. Variations emerged based on the particular understanding expressed by a given clinician in terms of whether they saw telehealth service separation as (1) depersonalised or (2) clinically voyeuristic; requiring (3) intangibility negotiation (4) and managing one's clinical identity versus technical role. Although there are individual differences in how particular individuals perform the five telehealth activities, the activities themselves remain constant. Moreover, clinicians displayed differences based on the level of tangibility required for physical examination. Additionally, whether a case was acute (i.e., sporadically arising) or chronic (i.e., ongoing) had implications for the providers' approach to relationship development with the patient virtually. Acknowledging that providers can feel challenged by the difficulties and fragilities of establishing trust virtually, it was found that six specific trust-building strategies could be leveraged. These strategies were 1) leveraging face-to-face meetings; 2) transferring trust via third parties; 3) conveying competence; 4) normalising telehealth; 5) reading emotions; and, 6) providing continuity of care. Understanding these sources of variance in provider's experiences of service separation and how they build trust in this context is important.

### 7.4.2 *Practical Implications for Policy Makers*

Telehealth uptake has been disappointingly slow overall (Smith and Gray, 2009). However, the technologies used to separate the service delivery are prolific. That their

integration into health care to better serve rural and remote patients, and others requiring better access to and immediacy of treatment is surprising. Insights can be gained from reflecting on the thesis' findings in terms of their practical utility. First, there is substantial training required for doctors and other clinicians to engage in the professional arenas of their desired clinical speciality. However, in terms of telehealth and its application, there is little formalised training for specialists. Training in terms of using the technology is separate from the issue of formalised training programs applying agreed upon social norms governing the practice of virtual medicine. This needs to be discipline specific. As such, policy makers in the field of telehealth would be well placed to develop formalised guidelines outlining the scope of practice documents for what a majority of clinicians feel can and cannot be treated via telehealth. Moreover, for those patients that can be treated via telehealth, the ways in which this performativity is conducted by clinicians could become more standardised, given the substantial differences which exist between disciplines. Second, despite investments in technological infrastructure, if clinicians do not feel supported or engaged with the technology, then its use will not ensue. Aside from gaining economies of scale in the use of expensive telehealth technologies, it would be helpful to understand potential inhibitions that clinicians may have toward telehealth. Providing more support and subsidised or fully-funded professional training programs and implementing mentor programs between more experienced telehealth practitioners and less experienced telehealth practitioners may assist. The role of observational work and mentorship has long been a part of health care training and the extension of this mindset to train future practitioners would be helpful. Such training could be extensively implemented focussed on, discipline-specific nuances and changes to clinical practice arising from service separation.

## 7.5 **Practical Implications: Service Changes & Trust-Building Recommendations**

The following four tables draw together the practical implications for both clinician and policy-maker stakeholder groups, for each of the understandings of service separation that were identified in response to research question one, and is further organised by the sub-themes within each understanding. Within each table, a series of recommendations for building trust as per research question two is also provided. Tables 21-24 summarise the a) behavioural changes and b) service outcomes gleaned as well as, c) recommendations trust building strategies from the results for research questions one and two. The behavioural changes, service impacts and trust-building strategy recommendations are an amalgamation of my ethnographic observations and interviewee experiences. Recommending strategies to build trust provided practical suggestions for providers.

### 7.5.1 *Summary of Depersonalisation and Trust-Building Strategies*

**TABLE 21. SUMMARY OF DEPERSONALISATION OUTCOMES**

| Sub-Facet | Behavioural Changes | Service Impacts |
|---|---|---|
| *Disengagement* | • Increased risk-taking propensity because of perceived 'virtual' reality (not real surgery)<br>• Sense of emotional or psychological disconnect from the patient due to virtuality<br>• Disengagement from the service delivery<br>• The type of technology, reflecting 'media richness' can heighten providers' disengagement (email) without any audio, visual, or haptics due to service separation. | • Decisions may be more/less rapid/ considered, due to perceived risk/s.<br>• Disengagement from patients could decrease future telehealth use.<br>• Video conferencing dominates as it is media rich (than email) and cheaper (than robotics); thus, seeking other technologies or hybrid face-to-face may raise engagement |
| *Disruption* | • Self-oriented behaviours (checking phone) are more likely to occur rather than patient-oriented behaviours (writing case notes) when technology fails (less inhibited online)<br>• If technology fails, provider may need to repeat oneself, reconnect technology – can feel annoyed, frustrated from lost time<br>• Updates and changes to technology creates a constant learning curve for busy clinicians<br>• Scheduling of clinics at different times means a provider has to 'wait' for patients or other providers to appear at the other end, even if their scheduled appointments finish sooner than planned | • Higher propensity for disengagement with telehealth<br>• Provider 'time-wasted' when technology fails – need to reconnect<br>• Time *dis*economies of scale (wait for email), disincentive for telehealth<br>• Time impost to learn new technology or upgrades can be a deterrent<br>• Dead air – there is no response at other end, re-dial and await reply<br>• Potential for higher DNA* rates which equals lost service time (no patients are physically waiting in a room to be 'ushered in') |
| *Recommended Strategies to Build Trust* | 1. **Trust Building Recommendation 1**: Providers can leverage the knowledge of other more experienced providers that have been using telehealth to up-skill themselves and their capacity to provide as engaging an experience as possible via telehealth. *Recommendation 1 aligns with 'conveying competence' (3rd trust building practice)*<br>2. **Trust Building Recommendation 2:** Providers can preface the potential for disruption from technological failures before starting the consultation to help minimise the potential misattribution of blame by the customer against their ability to use technology. *Recommendation 2 aligns with 'conveying competence (3rd trust building practice)*<br>3. **Trust Building Recommendation 3:** Providers can meet with patients initially face-to-face for the first consultation, if possibly before following up with technology-based consultations to make the service feel more personalised and engage with the patient. *Recommendation 3 aligns with 'leveraging face-to-face meetings' (1st trust building practice)*<br>4. **Trust Building Recommendation 4:** Providers can use the incentive to persist with telehealth to decrease the perceived depersonalised nature of service separation over time. This occurs through repeated positive interactions where trust can take longer to form virtually due to the perceived disengagement of the service through lost 'touch'. *Recommendation 4 aligns with 'difficulties and fragilities of trust' (Contextual Theme)* | |

Notes: DNA = Did Not Attend (teleclinic)

### 7.5.2 *Summary of Clinical Voyeurism and Trust-Building Strategies*

**TABLE 22. SUMMARY OF CLINICAL VOYEURISM OUTCOMES**

| Sub-Facet | Behavioural Changes | Service Impacts |
|---|---|---|
| *Looking Glass* | • Providers may be less likely to address sensitive yet important topics virtually<br>• Providers can zoom in and magnify parts of patients' body not seen when face-to-face<br>• Providers see patients in their home and observe them in their natural environment<br>• Providers can view images on personal mobile devices (stored data of patient) | • Treatment of patient conditions may be delayed due to providers perceiving patient discomfort<br>• Providers using zoom in effects may be seen as invasive or voyeuristic<br>• Privacy to disclose who is 'watching'<br>• Providers need to accept mobile responsibility for safe data storage |
| *Picture-(Not)-in-Picture* | • Providers may be unaware of the eye contact mismatch in video conferencing<br>• Providers may be unaware that patients don't want to be in picture (don't want to see their magnified image)<br>• Providers may not be aware of who else is physically present off-screen or listening in<br>• Providers may not take quality images | • Provider may be perceived as inattentive when looking off-screen even if looking at the patient<br>• Provider may be seen as insensitive<br>• Lack control over others disclosing their presence, privacy issue<br>• Patient may not disclose information<br>• Provider/patient time wasted as extra data is needed |
| *Recommended Strategies to Build Trust* | 1. **Trust Building Recommendation 1:** Providers can gauge the degree of sensitivity the referred patient may feel via telehealth by checking with the referring doctor in advance to maximise patient comfort as a way to build trust and minimise 'voyeuristic intention'.<br>*Recommendation 1 aligns with 'using 3rd party trust transfer (2nd trust building practice)*<br><br>2. **Trust Building Recommendation 2:** Providers should ask patients' permission first, before 'zooming in' with a camera. This helps attune the provider to patients' sensitivities to their own body parts being magnified live on-screen, which is important as providers may be desensitised given the number of consults performed daily.<br>*Recommendation 2 aligns with 'normalising telehealth' (5th trust building practice)*<br><br>3. **Trust Building Recommendation 3:** Providers should establish all others who are present in the room at the distal site, and communicate to the patient all who are present with the doctor (if anyone) before commencing the consultation to minimise perceived 'voyeuristic intention' from the patient later (or worse, not at all) becoming aware of the presence of undisclosed observers' privy to what the patient thought was private.<br>*Recommendation 3 aligns with 'normalising telehealth' (4th trust building practice)*<br><br>4. **Trust Building Recommendation 4:** Providers might overcome perceived 'voyeuristic intention' after asking patients to undress for examination by looking off-screen, telling the patient they will turn off their visual feed and that the patient need only speak 'when decent' to indicate the provider should turn the visual feed on; or, leaving the room.<br>*Recommendation 4 aligns with 'reading emotional cues' (5th trust building practice)*<br><br>5. **Trust Building Recommendation 5:** Providers should check whether patients want to see images of their body on-screen (through the provider's eyes) during examination. If not, providers can remove the 'in-set' vision to build trust.<br>*Recommendation 5 aligns with 'normalising telehealth' and 'reading emotional cues' (4th and 5th trust building practices)* | |

### 7.5.3 *Summary of Negotiating Intangibility and Trust Building Strategies*

**TABLE 23. SUMMARY OF NEGOTIATING INTANGIBILITY OUTCOMES**

| Sub-Facet | Behavioural Changes | Service Impacts |
|---|---|---|
| *Dismemberment* | • Clinician can feel disoriented from patient who appears instantly on-screen<br>• Video conferencing technology has potential to 'cut' patient in half (only head and shoulders seen on-screen)<br>• Robotic surgery 'zooms in' and magnifies patient, which separates person from body; also, using robotic hands to operate removes the clinician's ability to 'feel' | • Clinician may be unable to gauge 'end-of-bed-test' and patient fitness as with face-to-face consultations<br>• Clinician may miss subtle nuances (non-verbals, weight changes) as patient is only half shown, seated already when consult begins<br>• Clinician may lack haptic feedback during surgery as a diagnostic cue |
| *Disempowerment* | • Clinician cannot physically examine the patient has to rely on vicarious examination through the eyes, ears, hands of another (either patient or another clinician)<br>• Use of telehealth technologies separates clinician from patient as the media becomes less rich (robotics is greatest)<br>• Clinician lacks control over the capture of store-and-forward images if incorrectly taken may not indicate 'spread' of disease, relevant symptoms may not be reported or drug history not taken as relevant data | • Primary clinician may not have faith in the fidelity of self-reported patient data or other clinician's assessment<br>• Unable to treat all conditions via telehealth which may lead to service inefficiencies – may not be revealed until during the consultation<br>• Provider may feel socially separated and less likely to use telehealth<br>• Time impost for extra photos, clinician still has to seek history which may delay timely diagnosis |
| *Recommended Strategies to Build Trust* | 1. **Trust Building Recommendation 1:** If possible, providers should schedule a face-to-face meeting if a physical examination is required. This can be determined ahead of the consultation and may require scans or tests to be ordered before the consult. *Recommendation 1 aligns with 'leveraging face-to-face meetings' (1st trust building practice).*<br><br>2. **Trust Building Recommendation 2:** Providers can leverage the presence of the off-site party (GP, nurse, family member) to provide a vicarious examination based on the provider's instructions, to gain secondary insight and negotiate the intangibility (and disempowerment) being unable to examine patients themselves with their own hands. *Recommendation 2 aligns with 'using 3rd party trust transfer' (2nd trust building practice).*<br><br>**3. Trust Building Recommendation 3:** Providers can specify ahead of the consultation that the patient should be 'ushered' into the room at the distal site only when the doctor is connected virtually first, rather than the patient already be seated and waiting for the doctor to dial in. This has two functions: a) providing a gauge for providers of the 'end-of-bed' test where they can observe if the patient is 'fit-for-purpose' based on their non-verbal behaviours 'walking in' the room; and, b) reducing dismemberment perceptions by normalising telehealth (patients are not suddenly 'appearing' as a torso on-screen).<br>*Recommendation 3 aligns with 'normalising telehealth' (4th trust building practice).* | |

### 7.5.4 *Summary of Managing Change and Trust-Building Strategies*

**TABLE 24. SUMMARY OF MANAGING IDENTITIES AND ROLES OUTCOMES**

| Sub-Facet | Behavioural Changes | Service Impacts |
|---|---|---|
| *Identity* | • The clinician may communicate more readily who they are and their identity as a physician with expertise in a field as a result of telehealth implementation<br>• The clinician may feel their identity is influenced by the degree to which they are competent with telehealth technologies | • The clinician may be perceived less in their identity as a physician and more in the transient role as a technician<br>• The clinician may not perform all clinical tasks as competently due to the infusion of technology inhibitions |
| *Role* | • The clinician is tasked with technology implementation and virtual service delivery in addition to managing clinical tasks<br>• The clinician has to negotiate the change in tasks required of them as part of the service | • Service may not run as smoothly<br>• The clinician may be distracted by technology<br>• Extra time may be required with the integration of telehealth via clinicians |
| *Recommended Strategies to Build Trust* | 1. **Trust Building Recommendation 1:** Providers can communicate a backup plan to patients in case there are technical difficulties, so that providers foreground their identity as a specialist rather than as a telehealth technician. This avoids wasting time on trying to 'fix' technological issues, and rather prioritise the health care provision as the focus.<br>*Recommendation 1 aligns with 'continuity of care' (6th trust building practice).*<br><br>2. **Trust Building Recommendation 2:** Providers can employ the assistance of a telehealth coordinator to manage the technical role required with separated health care service delivery, to ensure their focus on the health care provision (and foregrounding their clinical identity as a specialist, rather than as an operator of technology).<br>*Recommendation 2 aligns with 'continuity of care' (6th trust building practice).*<br><br>3. **Trust Building Recommendation 3:** Providers can engage in training and self-education to understand the modifications to clinical practice of health care across different medical specialties as a result of service separation.<br>*Recommendation 3 aligns with 'conveying competence' (3rd trust building practice).*<br><br>4. Trust Building Recommendation 4: Providers can engage a mentor with more experience than themselves who they can observe, as is the case with other aspects of medical training, to pick up first-hand strategies on managing the potential tension between one's clinical identities versus technical role via telehealth.<br>Recommendation 4 aligns with 'conveying competence' (3rd trust building practice). | |

In summary, Tables 21-24 have identified the practical implications arising from the thesis. The recommendations are for providers experiencing any of the four understandings of service separation and the types of challenges that each can present. These are suggested as way to effectively deliver the separated service by highlighting the ability for each understanding and its associated challenges to be approached in a systematic way. In turn, these strategies can be reflected on over time as a way to assess the relative efficacy

of any interventions developed to manage negative implications of service separation. For example, a clearly identified practical implication is the absence of formalised training as a standardised offering for providers.

The salience of health care services to the understanding of service separation implications through technology infusion is strong. As noted in the literature review, because health care services are high in credence attributes, this renders them as extremely difficult for customers to evaluate the nature of the service even post-consumption (Darby and Karni, 1973). This is more pronounced in cases such as surgery where the patient is anaesthetised and not psychologically present during the delivery of the service, but also for other standard consultations where the doctor-patient power imbalance, as well as the highly-specialised nature of health care service creates inequalities in the veracity of the provider, versus the patients' ability to judge the service quality provided. As such, the knowledge asymmetries which exist due to the highly-specialised nature of medical care, and the legal inability for individuals to self-prescribe – even if they informally self-diagnose via 'Dr Google' and searching their perceived symptoms online – renders health care service provision as highly credence-based, rather than experiential.

Additionally, as has been noted throughout the thesis, health care services represent a service sector that is for many a highly critical one. Due to the nature of placing a customer's care in the hands of another (for diagnosis, treatment, prescription and health management) the criticality of health care services being focussed on one's health and wellbeing only becomes more exacerbated. Coupled with the specialist focus that telehealth tends to exhibit, the knowledge asymmetry between provider and patient is likely to be even more pronounced. These create vulnerabilities on the behalf of the patient which are not exhibited to the same degree with other services that are being increasingly separated, for which the barriers to entry and requirements for registration and specialisation are not so onerous as they are for medical services. For example, whilst service separation is evidenced increasingly in the education and retail sectors, customers are able to be themselves relatively well informed about the nature of the service and its anticipated quality; moreover, the criticality is rarely if ever a life or death matter. This is not so in the case of health care.

Given these arguments, the high credence-based nature of health care services as well as the high criticality typical of health care services only serves to more strongly highlight the salience of trust in this context, as has been explored through this thesis. Given the information asymmetries that exist generally between provider and patient, as well as the high barriers to entry in the health care service sector for specialist medical practitioners, it remains clear that the onus is on providers to ensure patients feel that their innate

vulnerabilities in these service settings are not exacerbated either due to the nature of the service or the separation of its delivery mode by a digital divide, as in the case of telehealth.

Currently, technology infusion in health care is a modality that has evolved relatively organically and is implemented at each providers' own volition. As such, many of the practitioners engaged with offering telehealth services are already graduates who have subsequently adopted the alternative service modality. However, today's undergraduates are tomorrow's service providers. Thus, if both formal and informal training, in the form of mentoring programs between more experienced practitioners were implemented, then further insight into the various areas for which training is required could be obtained. For example, providers delivering separated services have to be resilient to technology use, technology failure, and leveraging the presence of other practitioners either as trusted third parties or mentors for themselves. These are experiences which can be honed through observation of more experienced practitioners in the field; through simulated cases as part of professional training, or through technology-specific training that adapts to the nuances of each clinical specialty as well as the providers' own technological dexterity.

## 7.6 **Limitations and Future Research Directions**

As is the case with all research, there are some limitations to this thesis. Overall, the limitations revolved around the a) potential biases to which the collection of the empirical material could have been subject to; b) inability to conduct a longitudinal study despite this being most conducive to the study of a dynamic construct such as trust; c) geographically restricted pool of eligible participants; and, d) focus on specialist providers only despite the multi-stakeholder environment that is increasingly characteristic of separated services such as telehealth. In terms of future research directions, these limitations could be redressed through conducting a longitudinal study with alternative forms of empirical material sourced across either a national or international pool of providers from service contexts outside of health care, as well as from a range of multiple providers engaged in the service provision. I now unpack in more detail the specific considerations bounded around each of these limitations.

First, interview data may fall victim to 'collection biases'. Such biases question whether interviews are a product of the researcher's questioning rather than the participants' authentic experiences (see Hasselgren and Beach, 1997). To limit the potential for this bias, I developed a semi-structured protocol with a few 'high-level' interview questions (revised

after initial observations) to minimise my own 'voice' during the interview. However, no research is crafted without a researcher's imprint on the data. Therefore, I treated the interview-transcript analysis and interpretation with reflexive awareness as memory-based recalls told selectively in an interview. Moreover, because participants' memories change over time, I interviewed providers and observed their clinic where possible on the same day.

Second, longitudinal data collection was not possible given time limitations. Since trust is best studied over time because it is processual and dynamic, greater insights into trust formation over time could be theoretically interesting. Tracking the same group of interviewees reviewing their understanding of service separation evolving and the trust building practices as their experience with telehealth improves would be interesting. Future research could explore trust maintenance practices because building trust is only the first step. I also did not study actual trust formation (which would require interviewing patients). I diverted from previous studies of trust dyads by honing in on the providers' perspective. Clinicians were asked how they perceived they could establish trust virtually. As noted in the introduction and literature review, single-sided approaches are insufficient to describe a two-sided (i.e., 'co-produced') phenomenon. Further insights could be gained from exploring providers and customers' simultaneously. Moreover, in response to these first two limitations pertaining to potential data collection biases and cross-sectional data, future research would be well placed to consider alternative interviewing techniques gathered across multiple time-points from the same individuals. For example, rather than reinforcing the limitations of cross-sectional data, a longitudinal study could give insight into both the stability (or lack thereof) of an interviewee's opinions over time. Additionally, a tracking study could also provide rich insights into the evolution of a providers' perspective in relation to the phenomenon over time as their experience with it increases.

Third, 97% of the data (n=32) was sourced from Queensland-based clinicians. Given the time and finance constraints natural with a thesis, it was impractical to source a nationwide sample since the phenomenological approach necessitated ethnographic observation. It would be interesting to gain insights from assessing telehealth applications and providers' experiences of service separation in other countries. Examining other countries with different geographic dispersions and varying populations would be salient to understand whether the experiences of providers tasked with delivering virtual health care to the masses is independent of context, or not. For example, Australia is geographically vast; however, smaller countries might also experience the utilities of health care from the

providers' perspective in terms of economies of scale in service provision. Moreover, western culture is generally receptive to eye contact, regarding this as salient to trust; however, in other cultural groups eye contact may not necessarily be viewed as positive but rather something to be avoided as a way to indicate respect for another on whom one is interdependent through a hierarchical-status divide.

Moreover, only one service industry was explored. Health care is a particularly complex service as it involves personally sensitive life-oriented information for which patients are dependent on providers and often limited in terms of their specialised knowledge. The nuances of health care lie in stark contrast to other service industries such as education, retail or banking, where customers are able to self-educate, self-service or conduct one's own personal banking without a financial advisor; however, the ability to diagnose and treat oneself medically is impossible. Thus, there are limitations around generalising the findings to other service industries. Future research could explore providers' experiences of separation in other service contexts. For example, comparing health care, characterised by high risk, provider dependent care to a lower risk, self-dependent service, such as education, could clarify trusts' salience in separated services. For example, of the four understandings, clinical voyeurism seems unique to health care. Similarly, the salience of normalising 'telehealth' might vary based on how common technology infusion is in other services. Future research could assess whether the findings extend to other services such as education, retail, or banking, where technology infusion is increasingly common as seen with online courses, online shopping and online banking.

Fourth, the research scope was limited to specialist providers. However, telehealth is unique in that it brings together several providers simultaneously. General practitioners, nurses, telehealth coordinators and other health care staff all play an important role in the separated service delivery. However, it was beyond the scope of this thesis to explore in-depth the views of all. Moreover, I was unable to observe providers providing face-to-face health care, diminishing my capacity to comment on difference between separated versus unseparated service delivery (I ask during interviews). Obtaining 360° provider feedback could inform ways to improve separated service uptake. Moreover, within the recruited sample, all were current or previous telehealth providers. Understanding the perspectives of providers *not* engaged with telehealth may also shed light on its slow uptake. Although an appropriate sample was obtained, alternative insights could possibly emerge from exploring the experiences of those yet to adopt telehealth.

## 7.7 **Conclusion**

There is considerable scope for exploring services marketing and its constantly evolving status given the proliferation of technologies and the pace at which they continuously innovate. New service delivery possibilities, as well as new service provider-related roles are emerging as a result of infusing technologies to separate service production from consumption. Importantly, with the case of remote service provision such as in the empirical context of telehealth, service providers remain very much at the fore, using the technology as a means to interact themselves (albeit virtually) with patients. However, there is relatively little known about how service providers experience the separation of services such that they are not physically (i.e., spatially) and even perhaps temporally co-located with their customers. Moreover, whilst the importance of trust as a function of relationship management is well documented in the services marketing literature, knowledge on specific ways in which service providers can strategically build trust is scarce. As such, this thesis contributed an alternative conceptualisation of the phenomenon of service separation based on providers' own understandings of service separation from their own individual experiences. Additionally, the heightened salience of trust in virtual contexts – let alone a separated service – was acknowledged as being fundamental to the ongoing feasibility of technology infusion for services that individuals are long-accustomed to receiving in-person, face-to-face.

This thesis has demonstrated how providers are challenged by service separation and its particular salience in the context of telehealth. Service separation was understood as multifaceted from the providers' perspective, emerging as depersonalised and clinically voyeuristic, requiring negotiating intangibility and managing one's clinical identity versus technical role when interacting virtually. Despite service separations' spatial dislocation, providers were found to engage six specific trust building practices to avoid interpersonal dislocation from their customers in virtual context. These practices involved leveraging face-to-face meetings and transferring trust from third parties to convey competence, normalise telehealth and read emotional cues for continuity of care. Interestingly, eliciting these specific trust building practices allowed strategic recommendations for tactical trust building to be provided. Trust is woven into the fabric of human interactions; technology does not change this. If providers are temporally and spatially separated from patients, they must not only be technologically connected but also psychologically connected to build trust.

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# 9. Appendices

**Appendix A: Interview Protocol**

Interviewer: I

Respondent: R

1. **Indicative Interviewer Preamble**

I: Thank you for agreeing to voluntarily participate in this study, reading the information sheet and signing the consent form. I remind you that interviews will be audio recorded. Your responses are confidential and will be anonymous. All data will be analysed in aggregate only.

This interview is anticipated to take about twenty minutes. First, to help me contextualise your responses and to provide a background to this study, we will start with some basic questions.

2. **Respondent Verbal Consent Confirmed in Addition to Email Consent**
3. **Recording Started**
4. **Indicative Background Questions [10 minutes approximately]**
    a. Can you please tell me a bit about yourself - your background and clinical training?
    b. When did you get interested in telehealth?
    c. Do you find that your discipline lends itself well to tele?
    d. What type of telehealth technologies do you use?
5. **Indicative Interview Questions [20-30 minutes approximately]**
    a. Do you have a preference for face-to-face care or telehealth? Why/Why Not?
    b. Can you tell me about your experiences of telehealth?
    c. How do you perceive you establish trust with patients via telehealth?
6. **Indicative Probing Questions [10 minutes approximately]**
    a. Can you tell me more about that?
    b. Can you explain more about [x]?
    c. What do you mean?
7. **Open-Ended Interview Close [5 minutes approximately if at all]**
    a. Do you have any other comments that you wish to add?
8. **Recording Ended.**