12. Health, Public Sector and Not-For-Profit
Competitive Session

Knowledge Translation and Organisational Theory: Views from the Edges of Scholarship

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ABSTRACT: *This paper brings together two seemingly disparate fields of research – knowledge translation and organisational theory. This is achieved by applying a framework that incorporates agency, institutional, and situated change theories to the translation of clinical guidelines within primary care. Interviews were conducted with 21 general practitioners (GPs) before and after using a resource to facilitate evidence-based sexual healthcare. Lexical analyses were conducted on the interview transcripts. Findings suggest the theoretical framework helped to elucidate the complex pathways of knowledge translation. This study is important for theoretical, methodological, and practical reasons, all of which are discussed.*

Keywords: Healthcare; professional identities; knowledge management or transfer; critical management

Guided by organisational theories, this paper reports on clinician practices when translating medical knowledge into practice. This involved an examination of how general practitioners (GPs) used a clinical aide on sexual healthcare. These practices were analysed through a lens comprised of agency (Eisenhardt, 1989), institutional (Reay, Golden-Biddle, & Germann, 2006), and situated change theories (Orlikowski, 1996). The focus and approach of this study are described and justified as follows.

Despite the increasing number of evidence-based practices (Proctor et al., 2007) and the significant use of public resources towards them (Lehman, Goldman, Dixon, & Churchill, 2004), healthcare practitioners do not consistently translate the evidence available to them into patient care (Scott & Glasziou, 2012). Although the research is limited, one review estimates the time lag between research and practice to be approximately 17 years (Slote Morris, Wooding, & Grant, 2011).

The 'chasm' (Institute of Medicine, 2001) between the research-bench and the patient-bedside is costly on (at least) five levels – the individual, the social, the organisational, the economic, and the policy levels. At the individual level, many patients receive suboptimal care (Runciman et al., 2012).

At the social level, poor patient health is likely to contribute to the oft-cited burden of care among carers (Hill, Thomson, & Cass, 2011). At the organisational level, the chasm is likely to result in the misuse of limited public resources, including treatment, services, and staff (Orszag, 2008). Related to these are economic costs (AIHW, 2012). At the policy level, the chasm suggests misspent time and effort on the development of protocols and dissemination strategies that have limited influence on practitioner behaviour (Buchan, Currie, Lourey, & Duggan, 2010). This is particularly because some guidelines are estimated to cost approximately $100,000-150,000 (CAD) (CTS, 2010).

The translation of evidence-based practice into patient care is hindered by barriers at the micro, meso, and macro levels (Asadoorian, Hearson, Satyanarayana, & Ursel, 2010; Coiera, 2011; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Marchionni & Ritchie, 2008). Such complexity suggests that the bridge between the bench and the bedside may be difficult to establish, let alone maintain.

As a complex issue, knowledge translation is likely to require a different approach – theoretically and (related to this) methodologically. This follows the view of Greenhalgh and Wieringa (2011) who argue the need for a broader research agenda. They call for research that investigates how practitioners 'balance the generic recommendation of a guideline or protocol against the particularities of a case in the here-and-now' (p. 508), as well as research that draws from critical management studies to reveal the power dynamics that influence understandings of knowledge, as well as its construction, acceptance, and use.

To address these calls, this study uses a theoretical framework that draws from agency (Eisenhardt, 1989), institutional (Reay et al., 2006), and situated change theories (Orlikowski, 1996). According to Estabrooks and colleagues (2006, p. 31), this tri-focal lens is comprised of 'adjuvant' and 'necessary' theories to better understand and ultimately improve knowledge translation. As such, the aim of this paper was to determine the potential value of the tri-focal lens.

Guided by this lens, this paper examines how general practitioners (GPs) translate clinical knowledge into practice. Using sexual healthcare as the focus of the study, this was achieved through a mixed-method, longitudinal study to: (1) identify sources of information on evidence-based sexual healthcare among GPs; and (2) examine how this knowledge was translated into practice. The study

was mixed-method because it involved: the collection of qualitative and quantitative data; as well as two researchers (representing different disciplines) who interpreted the data. The study was also longitudinal as it involved data collection from the same GPs at two time-points.

Sexual health was an appropriate focus for this study for two key reasons. First, despite the prevalence of sexually transmissible infections (STIs) – particularly Chlamydia (DHA, 2009), and the availability of evidence-based guidelines (Bradford et al., 2008), the delivery of sexual healthcare is limited, particularly among GPs (Kong et al., 2011). The apparent disconnect between primary health *needs* and the delivery of primary *healthcare* indicates that sexual health is an appropriate focus in which to examine the translation of medical knowledge into practice. Second, the primary care sector in many Western nations is experiencing significant reform, the aim of which is to 'shift the centre of gravity of the health system from hospitals to primary health care' (DHA, 2011, p. 1). Given the high costs associated with a hospital-centric health system (Currie, Lockett, Finn, Martin, & Waring, 2012), government efforts to redress this imbalance see greater focus (if not pressure) on community-based care – this includes the primary care sector. These two reasons lend sexual healthcare as an appropriate context for this study. Before presenting this research, the following section provides an overview of the tri-focal lens used to examine knowledge translation processes and a rationale for its use.

Theoretical Framework

The theoretical framework adopted in this research is comprised of the agency (Eisenhardt, 1989), institutional (Reay et al., 2006), and situated change theories (Orlikowski, 1996). Agency theory awards primacy to the individual or agent (Eisenhardt, 1989). As Eisenhardt explains, 'It reminds us that much of organizational life, whether we like it or not, is based on self-interest' (p. 64). This understanding can help to determine the most appropriate type of agent-principal relationship or contract to optimise performance and manage risk (Eisenhardt, 1988). Agency theory holds particular relevance to health services research, largely because of the strong professional identity within medicine (Sullivan, 2000).

Institutional theory awards relatively greater primacy to the institution – this encompasses its rules, requirements, customs, and conventions (Eisenhardt, 1988). These standardisations and

assumptions are beneficial for two key reasons. First, they foster efficiencies – stock-standard practices enable individuals to rely on experience when attending to mundane or low-priority matters, and direct their energies to novel or high-priority issues (Cyert & March, 1963). Second, they offer legitimacy. Rules, requirements, customs, and conventions help organisations to operate, orchestrate, and evaluate (Hinings & Greenwood, 1988). These activities can be suggestive of responsible management (Meyer & Rowan, 1977), and thus shape the beliefs and values of those within the organisation, as well as those external to it. However, standardisations and assumptions can also be restrictive. Individuals who are tightly wedded to, or embedded within their social context are largely said to be resistant to change (Zucker, 1987).

Situated change theory suggests that change is situated in an evolving context, in which individuals adapt or metamorphosise accordingly (Orlikowski, 1996). Given its strong links to the environment, change is gradual and meaningful, rather than planned and deliberate – it involves subtle deviations from the paths most travelled and most controlled to pursue a flexible and self-organised path (Armenakis & Bedeian, 1999). And only by peering over one's shoulder, do the effects of this 'temporal interconnectedness' (Pettigrew, 1990, p. 269) become apparent. For two key reasons, unscheduled, incremental change can be advantageous, particularly when confronted by demands for significant change. First, the respite between periods of change can help to reduce stress (Schabracq & Cooper, 1998) – it offers a breathing space. Second, respite also represents a time to master new skills (Bandura, 1986), which is likely to be easier with reduced stress levels (Chen, Dubé, Rice, & Baram, 2008).

Guided by this tri-focal lens comprised of the agency (Eisenhardt, 1989), institutional (Reay et al., 2006), and situated change theories (Orlikowski, 1996), a study was conducted to examine how GPs translate clinical knowledge – particularly evidence-based sexual healthcare – into practice. This knowledge was presented to the GPs in the form of a clinical aide – namely, the STI Testing Tool.

Developed by the New South Wales Sexually Transmissible Infections Programs Unit (NSW STIPU), the STI Testing Tool is a double-sided A4 placard that was informed by clinical guidelines (ACSHM, 2004) to guide sexual health consultations. This includes the identification of at-risk patients; appropriate screening tests and the specimens required; appropriate ways to initiate and

manage a sexual health consultation; a guide to documenting a brief sexual history; appropriate ways to broach contact tracing; as well as referral information.

METHOD

Following clearance from the relevant university ethics body, this study involved semi-structured interviews with GPs affiliated with at least one Division of General Practice in NSW who were practicing within this Australian state. Divisions are professional bodies that support GP-members through the provision of training, resources, and opportunities to collaborate with other health professionals (General Practice NSW, nd). GPs were recruited through three channels – namely, static project promotion via Division websites and/or circulars; personal promotion of the project at Division workshops and seminars; as well as snowball sampling (Marshall, 1996).

A semi-structured, open-ended interview schedule was designed to explore the factors that help or hinder the use of evidence-based practice in the delivery of sexual healthcare. This included an examination of micro factors (e.g., patient relationship), meso factors (e.g., practice management), and macro factors (e.g., Division support). To understand whether and how STI Testing Tool was translated into practice, interviews were conducted twice – before the GPs were provided with the aide, and then approximately three to four months later, depending on GP availability. This timeframe was deemed adequate for perceived change. Interviews transpired for approximately thirty to sixty minutes and were digitally recorded; recordings were then transcribed verbatim for analysis. To ease data collection, both interviews were complemented with a closed-item survey. The survey included personal demographic items; organisational demographic items; items regarding professional development activities; clinical vignettes; and items regarding initiatives that would bolster the use of evidence-based practice.

Guided by the theories reviewed earlier, and using the individual as the unit of analysis, a lexical analysis was conducted of the interview transcripts. This involved conceptual and relational content analysis (Angus-Leppan, Benn, & Young, 2010). To optimise the likelihood of a systematic approach (Gephart, 2004), this process was aided by Leximancer – data-mining software that uses Bayesian reasoning to detect key concepts and reveal their relationships (Zuell, Weber, & Mohler, 1989). Using algorithms, Leximancer identifies frequently occurring and co-occurring words and

amalgamates these to form and visually map concepts that reflect themes within the text (Young & Denize, 2008). Clusters of concepts within a map suggest contextual similarity (Hepworth & Paxton, 2007). By default, three-sentence blocks of text are then assessed to identify evidence of conceptual relevance – however, given the concise nature of some responses, one-sentence blocks of text were assessed. For further detail on Leximancer and its validation relative to other coding practices, see Smith and Humphreys (2006).

Following Angus-Leppan and colleagues (2010), the transcripts from both phases of data collection were aggregated and the discovery mode was used to 'see what concepts were automatically generated by Leximancer without intervention' (p. 233). This helped to determine how the data might be refined and how relevant concepts were profiled. For instance, it was evident that interviewer comments dominated certain concepts. For this reason, all interviewer quotes were suppressed to give voice to the GPs. Although this potentially discounts the interviewer-interviewee exchange and context, this was addressed by sourcing the full transcript when analysing relevant concepts.

Theoretically-informed analysis was then conducted; this involved two steps. First, given the focus of this study on knowledge translation, the concepts automatically generated by Leximancer were suppressed and relevant concepts were created to represent clinical *knowledge* and clinical *practices*. This involved reviewing excerpts that represented seemingly relevant concepts and merging those that were conceptually similar. For instance, the concept, 'clinical knowledge', was created by merging, 'guidelines', 'placard', and 'protocol', among other concepts. Similarly, the concept, 'clinical practices', was created by merging, 'screening', 'test', and 'treatment', among other concepts. Following this, forty new user-defined concepts were profiled to examine the concept maps of 'clinical knowledge' and 'clinical practices' – this number was selected to avoid diluting the focus of the created concepts.

The second step involved tagging the interview transcripts. Guided by the three aforesaid theories, the transcripts were dichotomously tagged to categorise GPs (see Table 1). For instance, institutional theory suggests the more embedded an individual to their social context, the less likely their capacity to change (Zucker, 1987). As such, GPs were categorised according to years in general

practice (<10 years or >10 years), year of graduation (<1982 or >1982), and whether they are a Fellow of the Royal Australian College of General Practitioners (FRACGP = Yes or No). For comparative value, dichotomies were determined by ensuring approximately equal proportions of GPs where possible.

[Insert Table 1]

RESULTS

Participants

Twenty-one GPs participated in the study, including four registrars (male: 7; female: 14; mean age: 45 years; age range: 27-69 years) – however, for reasons unknown, one GP was not available to participate in the second phase of data collection. On average, the 21 GPs had been in practice for over 16 years. Although all but two GPs had graduated in English-speaking countries (the exceptions being Egypt and India), approximately half conducted a portion of their consultations in a language other than English (52.4%; 11). The GPs practiced in diverse settings. While one practiced part-time in a solo setting, another practiced in a group setting comprised of 15 fulltime GPs; five GPs practiced in an independent practice. Yet on average, there were 4.5 fulltime equivalent GPs at the practices represented in this study. Approximately half bulk-billed all patients (52.4%; 11); most of the remaining practices bulk-billed recipients of government-benefits and/or children under 16 years of age.

Agency Theory

Agency theory emphasises the role of incentives and self-interest and draws attention to the strong professional identity within medicine. Accordingly, a lexical analysis was conducted by developing two concept maps. Within the first, the 21 GPs were categorised according to whether or not they would increase STI testing if subsidised by the government; within the second, the GPs were categorised according to whether or not they would increase STI testing if an incentive payment was offered. With the exception of two GPs, the two approaches to categorise the GPs were highly comparable – for this reason, only results pertaining to the second concept map are reported (see Figure 1).

[Insert Figure 1]

The map suggests that 'clinical knowledge' is approximately equidistant from each category label, or folder tag. As Hewett and colleagues (2009) explain, 'The points on the map indicate emergent concepts, clustered with other concepts appearing in similar contexts. The size of the point indicates its connectedness or centrality; darkness of the label indicates frequency' (p. 1735). This would suggest the GPs spoke about clinical guidelines and resources in similar ways, regardless of their interest in an incentive payment. Conversely, the map also suggests that those who expressed interest in an incentive payment spoke slightly more about screening, testing, and treating. However, as the following excerpt suggest, these practices may not always relate to sexual healthcare:

> I think it's harder to practice preventative medicine in a private practice when people are paying to see you and paying you to be on time. The time pressure is more significant and the bill does come into play, unfortunately. There's also an expectation that you'll do exactly what their agenda is and that you won't raise any extra agendas unless it's either going to definitely affect their health immediately, like have an immediate effect on their current health problem, or it's going to have a really big long-term impact. Now, it's harder to convince someone to do STI tests with that regard.

The concept, 'training', is closer to those who indicated that an incentive payment would not increase STI testing. This suggests that training (in its varied forms) was more apparent in their discourse relative to those with an expressed interest in the incentive. This included training received as well as training delivered to registrars. As one GP noted:

> In my university training, I think that sexual history and sexual health would probably have had a very small part in the whole scheme of my medical student curriculum, whereas in my GP training curriculum, I think that's been far more obvious and they've addressed it a lot more.

The concept, 'medicine' is situated relatively closer to those who did not express an interest in the incentive. This may represent a perceived need to maintain a *general* practice, rather than focus on particular health issues, regardless of the incentives offered. One GP stated:

> general practice is a jack-of-all-trades.

Findings from the lexical analyses connect with agency theory in two key ways. First, the findings allude to the influential role of self-interest – be it the GPs' (e.g., the need to manage time or fulfil training responsibilities) or the patients' (e.g., the need to address the patient agenda). Second, identity as a *general* practitioner may reduce the attention awarded to health issues that are considered infrequent, like STIs. General practice may be dominated by perceived healthcare priorities such as diabetes and obesity and as such, GPs may require additional guidance on the conditions they have limited exposure to.

Institutional Theory

Institutional theory directs attention to the extent to which an individual is embedded within their social context (Reay et al., 2006). Although embeddedness can constrain change, it can also help individuals to understand how the context functions and identify ways to introduce change. Accordingly, a lexical analysis was conducted by developing three concept maps. Within the first, the 21 GPs were categorised according to the number of years in practice; within the second, the GPs were categorised according to their year of graduation; and within the third, the GPs were categorised according to whether or not they held FRACGP status.

The first map suggests the concept, 'clinical knowledge' is in closer proximity to GPs with less than ten years of experience, while the concept, 'clinical practice' is in closer proximity to GPs with more than ten years of experience (see Figure 2). This indicates those with less clinical experience spoke more often about clinical guidelines and resources, while those with more experience spoke more often about screening, testing, and treating. The latter finding may reflect a stronger familiarity with, and connection to professional practices. Within this map, the concepts, 'access', 'available', 'website', 'internet', and 'book' (among others) are in closer proximity to those with less than ten years of GP experience. Conversely, those with more than ten years of experience are in closer proximity to 'symptoms', blood', and 'urine' (among others), affirming greater connection to professional practices.

[Insert Figure 2]

The second map suggests the concepts, 'clinical knowledge' and 'clinical practices' are approximately equidistant between the two folder tags (see Figure 3). This suggests that GPs spoke

about clinical resources and their practices in similar ways, regardless of when they graduated. As such, tenure as a GP did not appear to influence this discourse. However, those who graduated after 1982 spoke relatively more about 'access' and the 'internet' – this is juxtaposed by reference to 'medicine' among those who graduated before 1982, which included examples of how primary care is negotiated and delivered:

> if there's anything that I need… I'll speak to the STD [sexually transmissible disease] clinic.

[Insert Figure 3]

Within the third map, the concepts, 'clinical knowledge' and 'clinical practices' appear slightly closer to those who held FRACGP status (see Figure 4). This might be due to greater familiarity with resources to enhance clinical practices. This is affirmed by an examination of surrounding concepts, which (for College Fellows) include 'online', 'access', and 'using', all of which refer to accessing clinical information:

> to have things online can be very helpful in that sense, because at least you can do ongoing education.

[Insert Figure 4]

The lexical analyses reveal the relevance of institutional theory by highlighting the ways in which embeddeness within a profession can shape clinical practices. The maps reveal relatively strong connections between professional ties and the ways in which clinical knowledge and practices are deliberated.

Situated Change Theory

The situated change theory suggests that change that is gradual and subtle is no less significant than large-scale, deliberate, orchestrated change (Orlikowski, 1996). To examine change over time, a lexical analysis was conducted by developing a concept map, in which the research material was categorised according to the phase of data collection (see Figure 5). The map suggests that the concept, 'clinical knowledge' is in closer proximity to the first phase of data collection, while the concept, 'clinical practices' is closer to the second phase. This suggests greater focus on screening, testing, and treating during the second round of interviews; this is affirmed by the surrounding concepts, which

include ‘blood’, ‘urine’, and ‘medicine’. For instance, reflecting on a consultation with a young patient that led to a formal complaint, one GP reflected:

> it sets you back a little bit inside your heart and it makes you just that much more hesitant to take that first step and break the ice.

This may represent ‘ongoing improvisations’ (Orlikowski, 1996, p. 65) towards changed clinical practices. Change may not be a linear process, but rather a series of mini defeats and victories. Conversely, discussion during phase one of this study focused relatively more on the ‘use’ or non-use of resources. Two GPs stated:

> I certainly use the sexual health clinics quite a bit… even just ringing them and asking them for advice.
>
> I don’t really use the tools because I’m so *au fait* with the information.

[Insert Figure 5]

As such, this lexical analysis helped to readily identify time points and opportunities for change.

DISCUSSION

Following calls to examine the translation of generic guidelines into *bona fide* patient care, and to draw from critical management studies (Greenhalgh & Wieringa, 2011), this paper extends current understandings of knowledge translation in two key ways. First, it applied a tri-focal theoretical lens comprised of agency (Eisenhardt, 1989), institutional (Reay et al., 2006), and situated change theories (Orlikowski, 1996). Second, it involved a lexical analysis. To the authors’ knowledge, no previous study has used this theoretical lens or research method to bring together knowledge translation and organisational theory.

Theoretically, the findings suggest that agency (Eisenhardt, 1989), institutional (Reay et al., 2006), and situated change theories (Orlikowski, 1996) each help to reveal different aspects of knowledge translation. Agency theory drew attention to the interests and priorities that influenced GP capacity to deliver evidence-based care; institutional theory highlighted the connections between professional embeddedness and professional practices; while situated change theory revealed the importance of incrementalism.

Methodologically, the findings from this study demonstrate the value of lexical analysis. Relatively devoid of the researchers' values and assumptions (when compared to conventional thematic coding; Saldaña, 2009), it helped to avert ill-informed conclusions. This is particularly because the analysis focused on what GPs said, rather than the researchers' (hopeful) interpretations. Similarly, the lexical analysis enabled greater focus on concept groups (or themes being collections of concepts) around particular GP characteristics (such as the length of time being a GP, graduation, opinions on government subsidy, and professional memberships). This was achieved through the ability of the software-generated concept maps to isolate areas of conceptual importance to these groupings. This software-driven mapping was important in terms of quantifying areas of conceptual interest relatively free from human bias.

Despite the value of the findings presented in this paper, two limitations deserve mention. First, because GPs were self-selected, there is no claim they constitute a representative sample of primary care clinicians. Second, the reliance on interview transcripts limits the lifespan of the identified findings, particularly because of the potential for social desirability bias.

This study is important for theoretical, methodological, and practical reasons. Theoretically, this study is the first to examine knowledge translation using a framework premised on agency, institutional, and situated change theories. Methodologically, the study highlights the value of the researcher-guided lexical analysis of qualitative research material. Practically, this study unveils opportunities to facilitate knowledge translation – this is particularly timely given the pressing need for healthcare that is both effective and efficient.

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TABLES

Table 1: Theoretically-Informed Document Tags

Theory	Tag	Rationale	Dichotomies	Participants
Agency theory	GP would increase STI testing if subsidised by the government as a Medicare service	Recompense for clinical practices is likely to further the GP's self-interest	Probably / Definitely	8
			Probably not / Definitely not / Unsure	13
	GP would increase STI testing if there was an incentive payment to GPs for each STI test performed	Recompense for clinical practices is likely to further the GP's self-interest	Probably / Definitely	8
			Probably not / Definitely not / Unsure	13
Institutional theory	Years in general practice	The longer a GP has been in general practice, the more embedded they are likely to be to their profession and/or organisation	<10 years	9
			>10 years	12
	Year of graduation	The longer a GP has been in general practice, the more embedded they are likely to be to their profession and/or organisation	<1982	7
			>1982	14
	FRACGP	Affiliation with the professional body is likely to suggest greater embeddedness to the profession and/or organisation	Yes	10
			No	11
Situated change theory	Data collection phase	Transformation is more likely to be identified longitudinally	Phase 1	21
			Phase 2	20

FIGURES

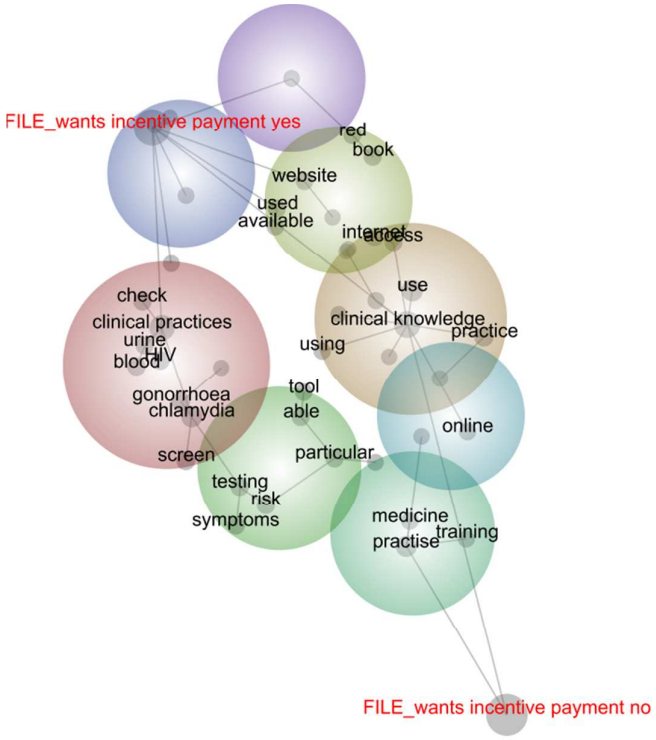

Figure 1: Concept Map of GPs categorised by Interest in an Incentive Payment to Increase STI Testing

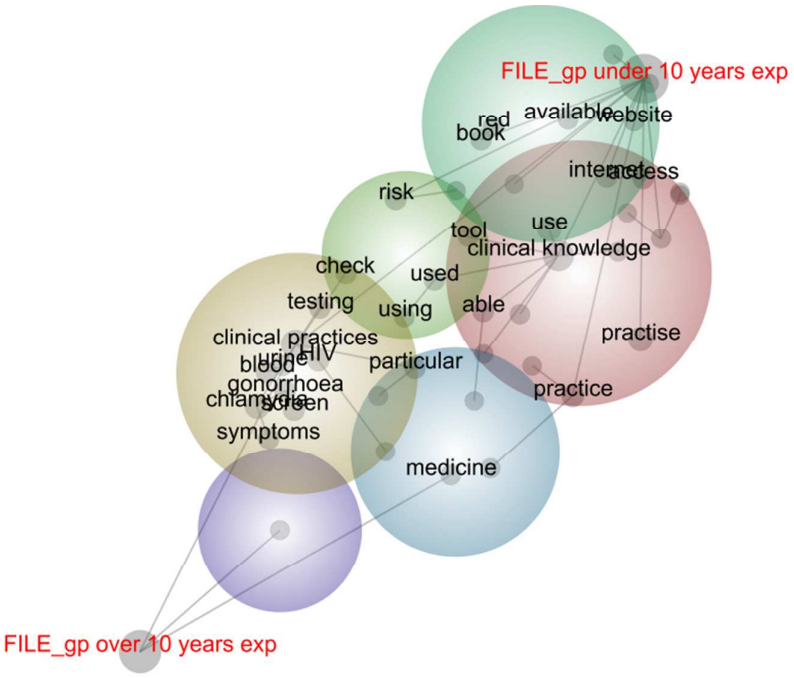

Figure 2: Concept Map of GPs categorised by Years of Experience

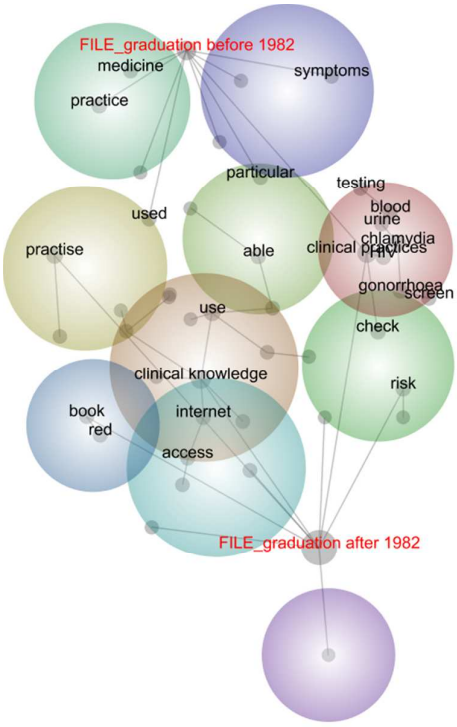

Figure 3: Concept Map of GPs categorised by Year of Graduation

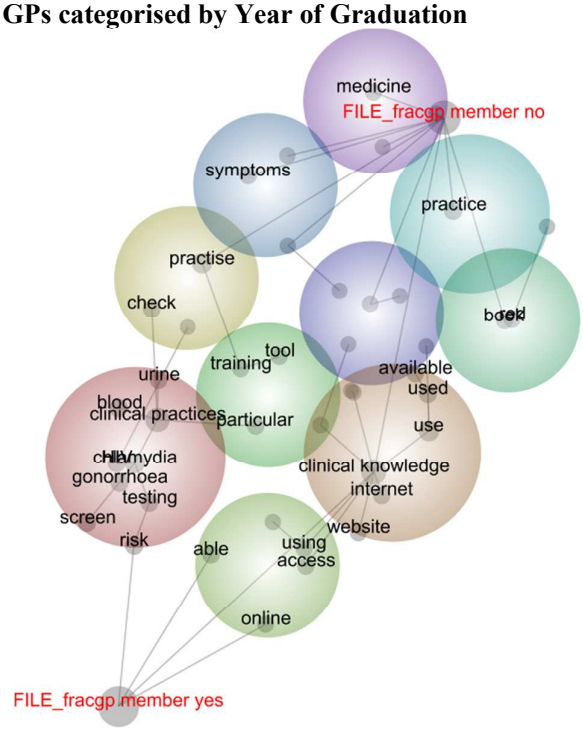

Figure 4: Concept Map of GPs categorised by FRACGP

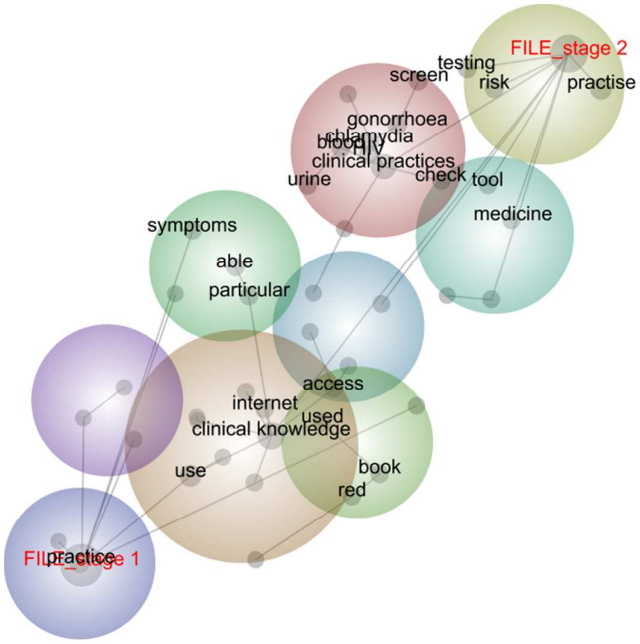

Figure 5: Concept Map categorised by Data Collection Phase