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Exploring interprofessional education and collaborative practice in Australian rural health services

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Abstract

This paper explores how work-based interprofessional education (IPE) influences collaborative practice in rural health services in Australia. Using a qualitative case study design, three rural hospitals were the focal point of the project. Marginal participant observations (98 hours) and semi-structured interviews (n=59) were undertaken. Participants were medical practitioners, nursing and midwifery professionals, physiotherapists, paramedics, social workers and administrative staff, who provided services in relation to each hospital. Data in the form of audio recordings and field notes, including researcher reflections were recorded over a three-year period. Whilst this study comprised of three phases, this paper explores the extent to which collaborative practice was present or *not* before and after IPE. An inductive content analysis resulted in the following themes: Conceptualizing Collaborative Practice, Profession-Driven Education, and Professional Structures and Socialization. Community of practice theory is used to explore the barriers created through profession-based communities of practice.

Introduction

Rural health care contexts are recognized for their interprofessional nature, and promotion of positive environments in which to experience collaborative practice (Albert, Dalton, Spencer, Dunn, & Walker, 2004; Croker & Hudson, 2015; Dalton et al., 2003; Hays, 2008). This study explored how work-based interprofessional

education (IPE) might influence collaborative practice in rural health settings in Australia. Collaboration is a process where two entities work together (Green & Johnson, 2015). In health care, collaborative practice occurs when health workers deliver high quality care through collaborating in decision-making, trusting in self and others, and communicating openly and actively with respect (Kilgore & Langford, 2009; World Health Organisation, 2010). A barrier to collaborative practice is when professions work in silos and in isolation often due to each health professional having their own discrete area of knowledge and expertise (Maddocks, 2016). It is well documented that poor collaborative practice is most likely due to power differences and a lack of common interprofessional ground (Bajnok, Puddester, MacDonald, Archibald, & Kuhl, 2012; Lees & Meyer, 2011; Zhou & Nunes, 2012).

One approach shown to be beneficial to enhance collaborative practice is interprofessional education (IPE) (Reeves, Tassone, Parker, Wagner, & Simmons, 2012; World Health Organisation, 2010). However due to its very nature, IPE can be inconsistent for reasons such as conflict, historical hierarchies and different registration pathways (Green & Johnson, 2015). According to the Centre for Advancement in Interprofessional Education (CAIPE), IPE is when 'two or more professions learn with, from and about each other to improve collaboration and the quality of care' (1997 p. 19). Incorporating IPE into professional development can provide health professionals with the knowledge, skills and attitudes to enable collaborative practice in the workplace (Institute of Medicine (IOM), 2015). Reflecting on the use of language and getting to know one another through IPE can build team strength, as well as reduce interprofessional conflict (Bajnok et al., 2012; Jabbar, 2011; Nisbet & Thistlethwaite, 2007). IPE and interprofessional learning

(IPL) have assisted new ideas, partnerships and collaborations between health professionals (Curran, Sargeant, & Hollett, 2007; Heath et al., 2015; Mann et al., 1996; Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013; Watts, Lindqvist, Pearce, Drachler, & Richardson, 2007). New collaborations have been achieved by creating safe spaces in which to share norms and values (Ravet, 2012), finding commonality (Dunworth & Kirwan, 2012), or by working on new strategies together (Jones & Jones, 2011; Mann et al., 1996).

There is a continual need to understand more about IPE and its effects, and build more IPE evidence (Reeves, Palaganas, & Zierler, 2017). The uptake of IPE interventions is impacted by interprofessional hierarchies and divergent bodies of knowledge (Rice et al., 2010), and results vary, dependent upon differing IPE activities/programs and research methods (Reeves et al., 2017). However, the organisational support for IPE can be problematic with issues around human resources, finances and interest (Andrew & Taylor, 2012; Leppäkoski, Flinck, & Paavilainen, 2015; Miller, Combes, Brown, & Harwood, 2014).

Gaps remain in the area of leadership in collaborative practice, to explore how it is conceptualised and distributed (Brewer, Flavell, Trede, & Smith, 2016). More evidence is needed to demonstrate how IPL can improve mutual trust (Barr, Koppel, Reeves, Hammick, & Freeth, 2005) which is an important element of collaborative practice. According to Tremblay et al. (2010), little is known about how health professionals translate recommendations of working better together and sharing of clinical knowledge. Therefore, a gap remains about how IPE and subsequent IPL will effectively promote, support and translate into capable collaborative practice. In rural

and remote Australia, health professionals have more generalist roles than in urban environments and they may find themselves unprepared as to how to work together with a limited understanding of the skills of other members of the primary care team (McNair, 2005). With this knowledge, the rural setting was chosen for the purpose of incorporating IPE into health professional development in order to encourage collaborative practice. This study explored how work-based interprofessional education (IPE) might influence collaborative practice in rural settings in Australia.

Methods

A case study design was used to gain a deep understanding of how rural health professionals work together, and whether IPE could have any impact on collaborative practice in the rural context. Case study is a method useful for exploring phenomena such as human behaviour and health professional interactions within a real-life context (Yin, 2009). Health professionals in this study are defined as any professional who practises and applies the principles and procedures of evidence-based practice and caring (World Health Organisation (WHO), 2013), and therefore is inclusive of medical practitioners, nurses, midwives, physiotherapists, paramedics and social workers. Qualitative methods provided the detail that was needed to focus on the phenomenon of collaboration and the opportunity to explore the experiences of those bound within it. The case study design aimed to build on existing IPE knowledge and theories (Runeson & Höst, 2009), including contact-theory and social learning theories (Allport, 1954; Carpenter & Dickinson, 2008; Dickinson & Carpenter, 2005; Hewstone & Brown, 1986; Wenger, 1998).

Setting

The rural hospital setting was regarded a useful central point for the study, as it is a place where health professionals potentially engage in collaborative practice. In rural communities, a hospital is the hub of work-based activities between health professionals (Charney, 2006). Three small rural hospitals in South Australia were chosen, due to having a similar variety of generalist health care services in place, such as medical, surgical, and 24-hour accident and emergency services. All three hospitals operated under a general practice service model where the general practitioners (GPs) were the visiting medical officers, as opposed to being salaried by the public health sector. In Australia, in small rural centres there are usually very few resident specialists, with only the GPs having admitting rights to these hospitals.

Using the Remoteness Area (RA) Classification system (Australian Bureau of Statistics, 2010) two of the hospitals (H1 and H2) were classified as inner regional (RA2) and located in adjacent towns with a combined population of 10,500 people, both just over one hour from the city, and in the same health network. There were three medical centres in the region, only a short distance away, which together provided a 24 on-call medical service with admitting rights to H1 and H2. A fully operational ambulance station provided paramedic and transport services to H1 and H2, as well as other hospitals in the region. H1 offered medical, surgical and emergency services. H2 offered the same services as well as obstetrics and regular operating theatre days. The third hospital (H3) was classified as remote (RA4) and was located just over two hours from the city in a town with a small population of around 600 people. On the hospital premises there was a stand-alone low-level aged care facility. The ambulance station was across the road and was operated by volunteer staff. H3 was serviced by two part-time GPs who were job sharing at the

local medical centre, and also assisted other nearby towns with patient consultations.

All three hospitals were supported with community-based services. A community health centre located within the grounds of H2 provided services of a social worker, occupational therapist and physiotherapist to the region. Additionally, in H2 there was an inpatient physiotherapist employed part-time to care for the patients in both H1 and H2. In Australia, allied health services are essential for primary, sub-acute and tertiary health care, however the type of care delivered is dependent on the funding allocation. For example, how activity-based funding or block funding is allocated to low volume country hospitals (SA Health, 2015), affects the number of allied health professionals who are able to be employed in these areas. Current allied health workforce issues can be partly attributed to limited access to Medicare rebates in rural areas, short-term funding cycles, and working under different funding streams for the same employer (Parliament of Australia, 2012). The H3 facilities also included a regional community health centre which provided access to a social worker and physiotherapist who visited the region on a regular basis. Core services of both community health centres in the study included clinical nursing services, providing nursing services in the home as well as in in the centre. H3 employed personal care attendants (known as PCAs) who are non-professionals, to assist with activities of daily living in the hospital and community setting. In H3, due to its small population, other services such as diabetes education, podiatry, mental health, psychologists were provided by visiting health professionals who made regular visits to the towns.

Data Collection

Three qualitative data collection methods were combined for the purposes of the study: marginal participant observation, semi-structured interviews and researcher reflections. The data collection took place over three years, consisting of three phases. The iterative nature of the research meant that the findings from each phase informed each subsequent phase. Phase One gathered baseline data in order to explore perceptions of IPE and IPL and sought evidence of collaborative practice; findings having been reported in a previous paper (Gum, Prideaux, Sweet & Greenhill, 2012). Phase Two involved liaising with senior health professionals to design, plan and implement IPE activities relevant to their needs. Phase Three followed up perceptions three to six months after the completion of Phase Two to determine the whether there were any influences of IPE on collaborative practice.

This study investigated the impact of IPE on collaborative practice by using different IPE approaches, dependent on local need. One of the interview questions in Phase One prompted participants to consider what type of topics they would like IPE-based education to include (see Appendix 1 – Interview Questions). IPE activities were then therefore discussed and negotiated at face-to-face meetings between the researcher and the hospital managers with added input/ideas from the GPs, allied health services and paramedic managers/educators. In the planning of the IPE sessions, organisers emphasised the IPE interventions were to be deemed useful to both the organisation as well as their staff. Each session was carefully planned (see Table 1), using educational theories which promoted active engagement of the learners and activities or actions which focused on the ‘interprofessional relationship’, such as

adult learning theory (Knowles, 1980) and constructivist learning theory (Vygotsky, 1978).

Marginal participant observations (see Appendix 2) of both hospital practices and the IPE sessions were recorded by hand as field notes. Semi-structured interviews—individual and group—were audio-recorded and transcribed verbatim. Researcher reflections were either audio recorded or written with the field notes.

Ethical Considerations

The project was approved by the SA Health and Flinders University research ethics committees. Informed consent was obtained for all research-related activities such as interviews and observation periods. Participants consented to be observed and volunteered for interviews which were completed during their lunch breaks or a nominated time, and in a private place. With data that were either handwritten or voice recorded, all participants were only identified by their profession to enhance anonymity. Each hospital wished to remain anonymous. For reporting of data, the collective term “allied health professional” is used for non-nursing and/or non-medical workers to provide anonymity due to the low number of individual disciplines presented.

IPE Interventions

An “Introduction to TeamSTEPPs” (Team strategies and tools to enhance performance and patient safety) was chosen by the hospital managers in Case A and B, as they had previously attempted to engage medical staff in the program

without success. Sessions were widely advertised throughout the region either through flyers and/or emails.

The “Understanding Suicide” workshop consisted of two evening sessions of three hours each over a two-week period, which was initiated and implemented by the Division of General Practice. The sessions were available to a variety of local health professionals, including nursing staff from H1 and H2. A planning team was set up to focus on ways to promote interaction and learning between the different professions during the sessions.

An “Appreciative Inquiry” intervention was chosen by the physiotherapy department who partnered with senior nurses, in attempt to promote dialogue between local health professionals. Those who participated in the planning of the two-part session were enthusiastic about enabling those who attended to find ways to promote collaborative practice in the workplace.

A “Working with paramedics” workshop was suggested, created and implemented by a local paramedic who wanted to be able to assist other professions to better understand the role of the paramedic

The final intervention was undertaken in H3 and consisted of an 8-hour funded workshop which aimed to address “post-fall care management” through teamwork and communication activities.

Data Analysis

Using the case study methodology, we categorised each hospital as a separate unit of analysis in order to interpret each case systematically and in its own context (Mills, Durepos, & Wiebe, 2010). Pattern-matching logic (Yin, 2009) aided in exploring patterns the research team found in the data, by attempting to explain or describe them using the evidence in each of the data types. We used inductive content analysis to code data at three levels using NVivo software (QSR International Pty Ltd, 2012). Naturalistic generalisations or categories developed for each case, and discussions with the research team, assisted us to build explanations and the relationships between them. The team reviewed and discussed the evidence which provided a chain of evidence to demonstrate research trustworthiness. Our data analysis was also informed by relevant conceptual literature to develop rival explanations. The research team used an inductive method to produce the final themes which helped make further sense of the data in relation to rural health settings and the IPE-collaborative practice nexus.

Findings

Findings for Phase One and Three are now presented. For reporting purposes each hospital: H1, H2 and H3 will be referred to as Case 1, 2 and 3 as these are inclusive of all the professionals, health workers and organisational structures encompassing the hospital and community services involved in each case. During Phase two, ten IPE events occurred which involved approximately100 participants in total. Table 1 presents the IPE activities that took place. Because the hospitals in Case 1 and 2 were in adjacent towns, it became evident in Phase 1 that many health professionals worked across both sites. Therefore, although the aim of the IPE was to be site-

specific, the sessions were held at each site and health professionals were invited from both areas. The number of hours of observation, and the numbers of interviewed participants is shown in table 2. This reflects both individual and group interviews that occurred.

Table 1 here

Table 2 here

The findings presented focus on the collaborative aspects of rural practice and whether the IPE interventions may have had impact on collaborative practice. The major finding was that profession-based communities of practice were a barrier to collaboration in rural practice, and these findings are now presented under the following headings: Conceptualizing Collaborative Practice, Profession-Driven Education and Professional Structures and Socialization.

Conceptualizing Collaborative Practice

There was little collaborative practice evident in this study. The main reasons discussed here are geographical and systemic-related factors. For example, each of the professions represented in this study portrayed that they were restricted by their own organisational structure and location of work. The rural health professionals in all three settings were each working for different organisations and many of them were not co-located geographically, thus revealing a disconnect between them. They believed they worked in silos, and time constraints in the workplace became a barrier for different professions to spend time talking with one another:

> "We stayed again in those cliquey [sic] little groups and silos instead of coming together. There is no time to chat and ask about how someone's grandma is doing. It just gets lost. We are tunnel visioned, focused on the work that we have to do and making those connections is less of a priority." *(Phase 1, Case 1, Nurse)*

The nurse provided insight to the reasons for limited communication which is an important domain of collaborative practice (World Health Organisation, 2010), is difficult in rural practice. One example of a systemic-related factor was the health professions each operated within different service-provision models. Operating under a fee-for-service model limited GPs' time to be able to attend hospital meetings or IPE sessions. For example, GPs saw their role as private practitioners providing service in a public organisation. GPs perceived the medical centre as their fundamental team, with one GP describing their general practice being his 'second family'. It became evident that GPs struggled with the requirement to be major contributors to the hospital teams where they admitted their patients.

> "[We] are part of a team but also part of another team outside and you have got to really balance it, and a lot of the staff really don't understand that the hospital is not the centre of the world." *(Phase 1, Case 1 and 2, GP)*

Multiple teams were found to operate within each case. Team membership was commonly perceived by participants to be significant in determining the effectiveness of collaborative practice. Visiting health professionals such as physiotherapists, social workers, GPs, specialists and community health workers, were transient team members as well as part of other external teams. Very few participants perceived they were all part of one and the same team. Administrative staff noticed that team

membership altered, depending on which health professionals were visiting on a given day, with some teams working together better together than others *(Phase 1, Case 1)*. However, health professionals believed the constraints to collaborative practice in the rural context to be multidimensional.

Those who worked within the community health sector were perceived as separate from the hospital (acute) staff in all three cases. Community health teams worked under a different organisational structure in the health care system and therefore under different management systems to the hospitals. Consequently, hospital-based nurses and community health nurses were found to misunderstand each other's roles and scope of practice. Technology-based systems, such as various online referral pathways for inpatients, were also perceived to increase the barriers between the hospital and community-based staff.

> "No-one is aware of it [community health service] and what goes on. It is a part of us but there is a tendency to ignore it, like a blind spot. You can't just call them up and say, 'could we have a dietician to come over and see someone'. You have to do a referral through Health Links, so there's just another middleman or barrier that is in there." *(Phase 1, Case 2, Administrative Staff)*

Being located in different buildings added to the perceptions of community health and hospital staff of their separateness. Further to this, allied health team members claimed that the level of collaboration between themselves and other health professionals was consistent with the number of patient-related referrals received.

Paramedics perceived their role as misunderstood and undervalued by most health professions. Paramedics were frustrated with misconceptions about the primary

focus of their role being only about patient transfers. The paramedics revealed they did not mix very often with other health professionals and therefore could see the value of IPE, but only if it were feasible in the rural context.

> "We don't hear of any training sessions that the hospital do, they're not advertised to us at all even though we're 'Health', so if they were to have a session on ... patient care analgesia or whatever, we don't hear of any of that training. And obviously we don't advertise our training either. So I think there is that delineation between them and us, which is unfortunate because in a small community I think it would work well." *(Phase 3, Case 2, Paramedic)*

In summary, collaborative practice was constrained by the presence of multiple teams operating within different organisational structures. Many of the health professionals worked in silos due to systemic, geographical and technical influences which impacted on how they understood and interacted with each other. Teams were arguably mostly profession-based and resulted in the existence of multiple sub-groups with each of the rural health settings.

Profession-Driven Education

Findings showed strong profession-based education practices which limited collaborative practice. This was evident through uncertainty of the feasibility of IPE as well as hesitation to embrace it. Whilst the participants in the study perceived that incorporating IPE into joint professional development would be beneficial, they were cautious of its implementation success. During the study there were concerns about sharing knowledge with other professions *(Case 3, Phase 1, Community Health Manager)*, GPs having no time to attend *(Case 1 and 3, Phase 1, Nurses)*, and

professions having different agendas *(Case 2, Phase 1 and 3, GPs)*. Not all participants understood the meaning and purpose of IPE.

> "If IPE is another tool for advancing an academic nursing course, then I don't want to do it. On a practical level I will do it, but if it is associated with another agenda, well then, I would be wary." (Phase 1, Case 2, GP)

IPE interventions were designed to provide interprofessional learning experiences for the rural health professionals. However, findings revealed continued uncertainty about the feasibility of health professionals to be physically able to get together for education purposes. For example, a paramedic indicated that transforming approaches to ongoing professional education would require countless commitment and a change of culture.

> "That's what has to be changed, it's changing [the] culture and the ability for hospitals to say: "Now, we will write off the books, we won't have any appointments this afternoon". You know what I mean? "Just go skeleton staff in the wards and the rest can go and do two hours of education." But it doesn't happen because there is no staff, which is quite sad in a way." *(Phase 3, Case 2, Paramedic)*

An allied health professional in Case 2 indicated that having been active in the region for around three years, she found that not all of the GPs referred clients to the service. The allied health professional worked limited hours in the hospital and believed this contributed to not being viewed as part of the team *(Phase 3, Case 2).* For example, the nurse managers had not considered inviting non-nursing staff to any of their hospital-based education. Nurse managers admitted that not looking outside of their own patch was somewhat due to separate budgets and siloed thinking. Moreover, GPs' attendance at IPE activities in Phase Two were infrequent,

and partly attributed to being time poor. GPs indicated that joint education was not a high priority for them. One GP inferred that the medical profession was reluctant to be inclusive of all health professions in their GP-driven education sessions due to the potential for differing agenda.

> "…You end up with people that are either pushing their own wheelbarrow or, you know, into Norwegian fish slapping or something like that, it's very hard to know exactly what's going on. Certainly, on the number of social workers and things ..." *(Phase 3, Case 2, GP)*

This GP implied that there can be vast differences between the perception of medical profession and that of other professions. The GP's reference to 'fish slapping', originates from a well-known Monty Python skit where two people are 'joyfully slapping each other with a fish until one falls into the canal' and is undertaken as a complementary health practice (Cogan & Massey, 2014 p. 280). The use of the phrase 'fish slapping' suggests that medical professionals may be reluctant to be inclusive of other health professions, especially of those that they do not approve of.

In summary, it was revealed that there was no current, regular and ongoing joint professional development in any of the three cases. Whilst most participants indicated that it was a good idea, not all them perceived any need or priority for interprofessional education. Each profession group or department was responsible for driving their own education needs. Profession-driven education meant that health professionals tended to stay within their own traditional boundaries or groups, thus limiting their sessions to more local and 'in-house' professional issues.

Professional Structures and Socialization

Support structures for rural professions and services, such as reporting and funding lines and physical locations, were found to influence both personal and professional socialization, subsequently limiting collaborative practice. The way in which rural health professionals practised were governed by the model of care they worked in. For example, depending on whether they operated as part of private or public organisations had an impact on their daily work and practices and interactions.

> "I can see that getting the doctors involved may be difficult. You see, they are here not as employees but as private physicians, so their time is their money, not our money. Sometimes you can reluctantly get them there, dragging their feet, but we have a hard enough time just to get them to a meeting once a month to discuss generic clinical issues let alone other things." *(Phase 1, Case 3, Nurse Manager)*

Additionally, how rural health practice was governed was dependent on which health services were available and accessible in each town. These professional structures limited the capacity for collaborative practice. Barriers to collaborative practice were shown to be geographical. Furthermore, in each case, finding an agreeable venue and time for IPE and collaborative practice was problematic given the dispersion of professions. Case 3 demonstrated that the smaller the service the more difficult it becomes to deliver IPE as only one session was held. This was due to the projected high cost of replacing hospital staff so that they could attend, and the need for a sufficient critical mass of attendees to legitimise local education delivery which was problematic.

The professional structures associated with continuous professional development (CPD) points influenced their willingness to participate in IPE. One of the issues

raised emphasized that health professionals may have competing interests in relation to gaining CPD points as part of their professional responsibility.

> "They [the doctors] have a responsibility to their own clinical improvement and performance, I suppose. Nurses … it is easy enough to get points and the way the new structure works we can allocate as we see fit. I don't know how the doctors work to get points. I'm not sure how it works." *(Phase 1, Case 3, Clinical Nurse Manager)*

A nurse revealed that regarding CPD points, they had to consider whether attending IPE education sessions in their own time might compete with individual or organisational priorities (*Phase 3, Case 3)*. Nevertheless, nurses and paramedics in Cases 1 and 2 believed that having more opportunities to develop shared understandings could add to understanding each other's roles and strengthen their partnerships. They perceived that by socializing more they would develop a common sense of identity.

> "I think sometimes if we get to know someone socially, then they might broaden things a bit. I think we're very used to our professional relationships and there's a fine line between the doctor and the nurses, I think. And so if we have a few social things, then probably get to know someone as a person rather than a professional, it might make things easier." *(Phase 3, Case 2, Clinical Nurse Manager)*

When health professionals were familiar with each other, there was a tendency to utilise this opportunity if they happened to pass one another in the corridor. These conversations were often used to clarify or hand over information. Observations of how and where health professionals' conversations took place in the hospitals, revealed frustrations with finding out who was looking after the patient in order to discuss their care. Having a lack of opportunities for effective communication

between health professionals highlighted the need for interprofessional spaces and processes in healthcare settings.

This study found that opportunities for regular interaction between health professionals were limited by the structure, socialisation and lack of educational opportunities. These findings highlight the challenges of interprofessional relationships whereby health professionals were restricted by the structures of the organisations that continuously reinforce distinct professional boundaries. CPD points were not focused so much on IPE, but rather on benefiting the organisation and or the profession itself. This places less value on IPE. Professional structures were found to hinder professional socialization, for example the type of health service: public, private and rural, and what type of health care service was present in each town. The benefits of professional socialization were perceived to be very positive such as strengthening relationships and developing a common identity.

Discussion

The IPE activities were successful in generating some mixing of professions, however, not all sessions were truly interprofessional (i.e. representation from more than one profession) which reduced opportunities for IPL. This study found that IPE was not effective in generating collective learning, and therefore had no influence on collaborative practice in the rural setting. Nevertheless, collaborative practice was also constrained by transient teams operating within a multi-layered health system. Health professionals perceived they worked in silos and did not always understand each other's roles. This study revealed a dominance of profession-based communities of practice in the rural health care setting. These profession-based

communities or sub-groups were found to contribute to misunderstandings about health professional roles and capabilities. Community of practice theory (Wenger, McDermott, & Snyder, 2002) is used in the next section to explore why it may be difficult for rural health professionals to come together or collaborate.

Communities of Practice and Collaborative Practice

Communities of practice are a process whereby groups of people share a concern or a passion for something they do, and as a consequence learn how to do it better through regular group interaction (Wenger, 2006). This study found there were limited opportunities for regular face-to-face interactions between health professionals because they were operating within their own profession-based communities of practice. One downside of communities of practice is that members will be less likely to operate collaboratively outside of their own community of practice (Brown & Duguid, 1991). Belonging to a profession-based community of practice where there are established norms and identities can add to the challenges of being able to communicate across different communities of practice (Wenger, 1998).

For health professionals in this study, it was common practice to undertake education-based activities within their own professional groups or communities. This is linked with the assumption that within a community of practice there is only one single knowledge system (Fischer, 2001). Further to this, most health professionals are also more comfortable in their own groups (Hollnagel, Braithwaite, & Wears, 2013). Work-based IPE therefore, requires a strong link between communities or communities of practice which are directed towards interprofessional membership.

McLoughlin, Patel, O'Callaghan and Reeves (2018) suggest that virtual communities of practice have the potential to promote engagement between health professionals, especially those who are limited by geographal isolation and time.

Professional structures were found to be a barrier for rural professions and organisations to promote collaborative practice. These structures included models of care, reporting and funding lines, physical location, CPD practices, and the types of health services available in each town. Organisations have influence on whether or not collaborative practice takes place (World Health Organisation, 2010). Therefore, how receptive an organisation is to IPE will depend on its compatibility with organisational funding, goals and vision. Collaborative practice would need to be a part of the organisational philosophy (Mian, Koren, & Rukholm, 2012). However, the problem is even more complex, as funding arrangements and resource issues between health organisations have been reported as significant IPE barriers (Pullon, McKinlay, & Dew, 2009). Shared governance is required to work across service boundaries (Ravet, 2012).

Profession-driven education, exclusive of other professions, is attributed to how differently each profession envisages knowledge-in-practice (D'Cruz, Jacobs, & Schoo, 2009). For example, canonical or well-established groups tend to emerge in communities of practice, because their members are situated in practice and acquire each other's subjective views and language (Brown, Collins, & Duguid, 1989; Brown & Duguid, 1991). Whereas, in non-canonical practice, where less established groups of health professionals are expected to work together, members have more flexible views (Brown & Duguid, 1991). Those learning in canonical groups are usually more

focused on *being* a practitioner as opposed to being *about* practice (Brown & Duguid, 1991). Therefore, it becomes problematic in a setting where health professionals may not work in well-established teams. Furthermore, CPD points in Australia are currently profession-specific, and learning is context-driven rather than aimed at exchange between learners. Organisations may not be attuned to the fact that non-canonical communities of practice are more fluid and can include people from the outside (Brown & Duguid, 1991), such as the visiting or part-time health professionals in this study.

In communities of practice, learning is context-driven and based on organisational needs as opposed to socially-constructed and promoting exchange between learners (Barr, 2013). The social-constructivist/cognitivist view of learning which underpins IPE is derived through the process of active learner engagement which connects new knowledge with wider practice (Lawn, 2016). The benefits of socialization between professions, in the form of workplace IPE, enhances the relevance and application of learning (Nisbet, Lincoln, & Dunn, 2013). However, this requires health professionals to cross boundaries. Socialization opportunities would enhance collaborative practice. More regular interactions between health professionals, such as regular team meetings, debriefings, discussion and review of cases should be considered as part of routine practice to enhance collaboration (Nisbet et al., 2013). In relation to rural practice, particular attention is needed to be paid to infrastructure and social relationships, as each town is unique and has its own local needs (Fitzpatrick, Perkins, Luland, Brown, & Corvan, 2017). Most importantly, there must be a conceptual reorganisation of our health systems to consider how communities of practice can be linked together. Brown and Duguid (1991, p. p.55), suggest in

order to promote collaborative practice, organisations must acknowledge they are situated as a “community-of-communities”, thus creating a focus for seeking innovative ways to bring health professionals together for the purposes of learning-in-working opportunities.

Alternative strategies are needed to consider how to increase interprofessional learning opportunities in rural services. Consideration for the structural workings of a community of practice; legitimation, peripherality and participation (Lave & Wenger, 1991) can assist to build interprofessional communities of practice. For example, legitimation of members involves getting to know each other better; and organisations could explore ways to do this, either formally or informally. The environment plays a large role in how and where IPL can take place (Brown & Duguid, 1991). This study found that those health professionals who knew each other well were more likely to engage in ad hoc, or spontaneous corridor conversations. The opportunity for informal encounters can lead to knowledge sharing and problem-solving discussions (Hildreth, Kimble, & Wright, 2000; Long, Iedema, & Lee, 2007; Miller et al., 2008; Waring & Bishop, 2010), thus providing opportunities for informal IPL to take place.

Increasing technology means that there is less need for face-to-face encounters. To connect communities of practice there should be more emphasis on the need to situate learning and move away from traditional CPD. Organisations and policy makers must consider the role of strengthening relationships and developing a common identity in order to promote collaborative practice.

Innovative ways are needed in order to tackle the ongoing issue of GPs not having time to engage in education with other health professionals. Fletcher, Whiting, Boaz & Reeves (2017) noted the significance of professional isolation and how collaborative interaction may at least bring hierarchical issues to the forefront, in order to be able to tackle them. The downside of a profession-based community of practice is that they operate within their own boundaries and can explain why their education sessions were mostly based on local and 'in-house' professional issues. In order to provide better access and support for joint CPD, policy makers, registration boards, institutions and professional colleges must consider funding models which can better support health professionals to be able to spend more time together.

Limitations

The limitations of the study included that there was limited participation by the allied health professionals and specialist doctors, due to the research being focused within the hospital context. Therefore, future researchers should consider observations of health professionals in other rural contexts such as medical centres, ambulance stations and community and allied health departments. There was some crossover of workers between Case 1 and 2 which may have boosted the number of attendees at some IPE sessions. However, the ability to explore site-specific IPE may be viewed as a limiting factor due to the fact that there were health professionals who worked in both H1 and H2.

Concluding comments

This paper reported on a PhD research study where the association between IPE and collaborative practice was explored. Qualitative methods were used to reveal the barriers to collaborative practice, deliver and analyse IPE in the rural practice context, and determine whether these activities could enable changes in practice or collaborative behaviour. Community of practice theory, which attempts to further understand social learning systems (Wenger, 1998; Wenger, 2000; Wenger et al., 2002) and aligns itself well with IPE, was used to further explore the barriers created through profession-based communities of practice.

This study viewed three different cases in a rural setting, which identified the types of barriers that impacted how health professionals engaged in collaborative practice but also on their potential to meet for the purposes of IPE. Profession-based communities of practice were found to dominate in the rural setting, reducing opportunities for interactions between the health professions. This study's findings indicate that collaborative practice is socially constructed, placing high importance on social interactions and learning. Therefore, IPE may be a useful medium to promote collaborative practice if the barriers relating to profession-specific communities of practice are addressed. Policy directives should further consider how both formal and informal CPD activities could be funded and supported.

Future research should focus on innovative strategies to deliver IPE within communities of practice, how to create interprofessional communities of practice or how organisations can be supported to do so. Future work-based IPE research is needed to explore innovative ways to encourage more face-to-face interactions and engagement of the professions across boundaries in everyday practice.

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