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<http://informahealthcare.com/journal/jic>

doi: 10.3109/13561820.2013.807777

Please cite this article as:

Gum, L., Lloyd, A., Lawn, S., Richards, J., Lindemann, I., Sweet, L., et al. (2013). Developing an interprofessional capability framework for teaching healthcare students in a primary healthcare setting. *Journal of Interprofessional Care*, 27(6) pp. 454-460.

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Developing an interprofessional capability framework for teaching healthcare students in a primary healthcare setting

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Abstract

This article is based on a partnership between a primary health service and a university whose shared goal was to prepare students and graduates for interprofessional practice (IPP). This collaborative process led to the development of consensus on an interprofessional capability framework. An action research methodology was adopted to study the development and progress of the partnership between university and health service providers. The initial aim was to understand their perceptions of IPP. Following this, the findings and draft capabilities were presented back to the groups. Finalisation of the capabilities took place with shared discussion and debate on how to implement them in the primary care setting. Several ideas and strategies were generated as to how to prepare effective interprofessional learning experiences for students in both environments (university and primary health care setting). Extensive stakeholder consultation from healthcare providers and educators has produced a framework, which incorporates the shared views and understandings, and can therefore be widely used in both settings. Development of a framework of capabilities for IPP, through a collaborative process, is a useful strategy for achieving agreement. Such a framework can guide curriculum for use in university and health service settings to assist incorporation of interprofessional capabilities into students' learning and practice.

Keywords

Action research, collaboration, interprofessional education, interprofessional practice, partnership

Introduction

This article describes how a partnership between a primary health service and a university led to the development of an interprofessional capabilities framework. The shared goal of the partnership was to prepare students and graduates for interprofessional practice (IPP). This research builds on two episodes of previous work where faculty members were consulted about the potential to use interprofessional education (IPE) for improving educational and health outcomes (Bennett et al., 2010) and the exploration of strategies for implementing and sustaining interprofessional clinical learning for students placed in their work-based service delivery sites (Gum et al., 2012). The definition of IPP used to guide the project is from the Australian Interprofessional Practice and Education Network (AIPPEN, 2009) where, "all members of the health service delivery team participate in the team's activities and rely on one another to accomplish common goals and improve healthcare delivery".

Internationally, in particular the United Kingdom, United States, Canada and Sweden, there has been significant achievement towards the establishment of IPE and IPP due to healthcare reform. Currently, there is a national project underway in

Australia, which will build on international frameworks and locate them within the Australian context (Yassine, Manidis, Dunston, & Lee, 2011). Globally, there is a call for health professional education to build stronger partnerships with, and be more responsive to local health care (Frenk, 2010). Meanwhile, the project presented in this article was a continuation of work already underway in a partnership where the overall aim was to further embed IPE into curricula.

This project sought to identify the perceptions, definitions, and attitudes about IPP and IPE from academics and health service providers (HSPs) with the aim of initiating a shared discourse on IPP. Analysis of the views resulted in the development of an interprofessional capabilities framework, which reflected the shared understandings from both groups. This article presents the interprofessional capability framework and reports on the research process, which led to its development.

Background

Interprofessional competencies, as opposed to uni-professional competencies, are arguably more focused on addressing the complex needs of patients, describing the knowledge, skills, attitudes and behaviours, which are required for working in an interprofessional team (Yassine et al., 2011). The Canadian Interprofessional Health Collaborative (CIHC) (2010) has produced a competency framework as a guide for IPE and IPP in

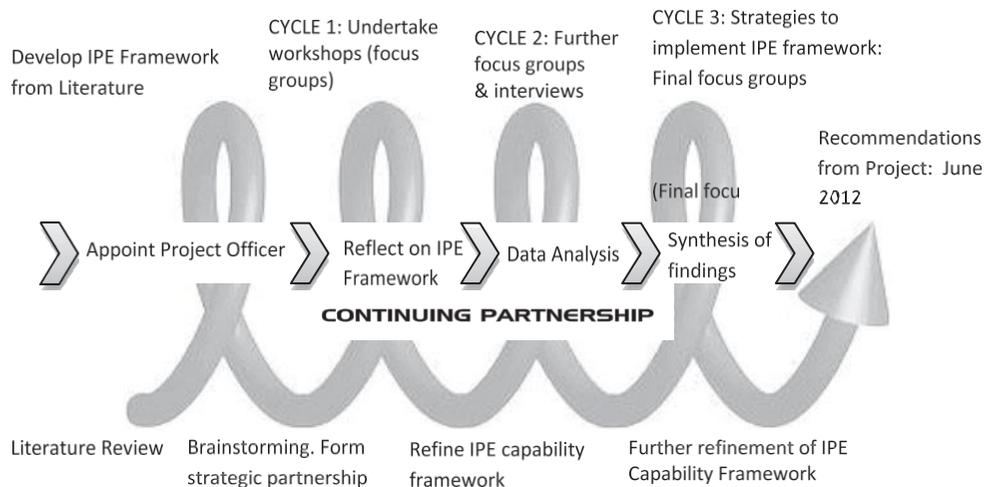


Figure 1. Action research cycle.

most contexts. The United States (Washington, DC), informed by the work of the CIHC (Vancouver, BC, Canada) and other national and international institutions, has recently developed their own competencies for interprofessional collaborative practice (Interprofessional Education Collaborative Expert Panel (IPEC), 2011). The IPEC report (2011) describes four competency domains: values/ethics for IPP, roles/responsibilities, interprofessional communication, teams and teamwork with the expectation that each of these are practised in a patient-centred and community-orientated way. This differs from the CIHC framework (2010), in that the Canadian collaborative offers a “framework” as well as six competencies: interprofessional communication, patient/client/family/community-centred care, role clarification, team functioning, collaborative leadership and interprofessional conflict resolution.

According to Bartram (2012), a “genuine” framework consists of the following: an articulated set of relationships, defines the nature of the components of a model, specifies how those components relate to each other and how they relate to other constructs (performance, personality, etc.) that sit outside the framework and is evidence-based. The CIHC Framework (2010) meets the above criteria, and its developers explain how their Framework can be used in several contexts. However, the IPEC report (2011) demonstrates that competencies may need to be context-specific to be successful and explain that competencies may be dependent on the learning activities available and the types of pedagogies used, the level of the student and how they are assessed. IPEC (2011) emphasizes the value of bridging the gap between education and practice by building competencies as a collaborative. This project is an attempt to build competencies for IPP, which are both contextual and relevant to the classroom and the clinical setting, in this instance, a primary healthcare setting.

Methods

Action research, due to its collaborative nature, was chosen as the methodology so that all stakeholders would be involved (Cresswell, 2008). This aligns with some theories of change management, which stipulates that successful partnerships need shared values and leadership (Ginsburg & Tregunno, 2005). The aim was to build a sustainable project through action research cycles of planning, action, reflection and observation to build learning over time (Bradbury Huang, 2010; Cresswell, 2008). This approach allowed the findings to inform each stage of the project. Prior to commencement, ethics approval was sought and granted from the Social and Behavioural Research Ethics

Committee at the University and the Human Research Ethics Committee of the South Australia Department of Health. Broad negotiation and consultation was undertaken at commencement of the project to ensure all stakeholders were involved.

Among the cycles undertaken during the project was the formation of the partnership between three organisations (primary health, local health network and one university), which led to the appointment of a project officer. Initially, the project was managed by a research and evaluation group as well as a steering committee and eventually these two groups merged. The planning and action cycles included undertaking an environmental scan to determine a draft of capabilities ready for consultation with university and HSPs. Following this, there were three main cycles, each one determining, through regular research and evaluation meetings what would take place during the next cycle (see Figure 1). For example, the first focus group involved data collection with university and HSPs to understand their perceptions of IPP. Following this, the findings and draft capabilities were presented via separated university and health service groups/individual interviews/e-mails. This eventually led to the final focus groups where the capabilities were finalised within shared groups, with rich discussion on how to implement the capabilities. Each of these steps is now described in more detail.

Environmental scan

An environmental scan of the literature was performed by the IPE Interest Group to ascertain the current understanding and development of IPP skills, using the search terms of interprofessional capabilities and/or competency frameworks within the health and social care professions. This was not comprehensive; rather it was performed with the intention of locating the project within the broader discussion of IPE and IPP. The team viewed 13 papers and reports, which identified key skills for IPE and collaborative practice within the health professions (see Appendix 1). Twelve articles originated from universities in the United Kingdom, Canada, Australia and the United States that were developing their own internal IPE programs, with a 13th article written by the World Health Organisation, with reference to the “global healthcare workforce” (WHO, 2010).

There were 10 major interprofessional competencies or capability areas identified. These included: communication, collaboration, understanding of other professions, teamwork, quality safety, ethical practice, knowledge of practice, reflection, patient-centredness and professionalism. Less common areas included management, work satisfaction, leadership, conflict resolution, information and communication technology, public

health perspective and respect and trust. To consolidate the findings, the 10 major areas and their descriptors were merged into a table. Colour coding was used to place those competencies with similar concepts/notions, and this created a division into four major groupings: interprofessional communication; interprofessional teamwork; understanding own and other professions' scope and roles; and patient-centred practice. The 13 articles were further scrutinized to elicit the definitions and skills underpinning each of the four key domains. The research team assessed these skills to identify four or five essential behaviours or attributes a student would need to demonstrate in order to achieve each key competency. Being based on the criteria used by leading international universities to measure interprofessional capabilities, these four key domains were used as a reference point to assist with implementing discussions with participants in the project.

Participants

Academic participants from the Faculty of Health Sciences included the disciplines of Nursing, Midwifery, Optometry, Speech Therapy, Nutrition & Dietetics, Disability, Health Promotion and Medicine. Additionally, the Faculty of Social & Behavioural Sciences was represented by faculty from Psychology and Social Work. At the time of the project planning, the university did not have a Pharmacy or Physiotherapy course. HSP participants were represented by employees from Oral Health, Nursing (clinical, health promotion & management), Youth workers, Social Work, Health Service reception staff, Nutrition & Dietetics, Psychology, Podiatry, Paramedics and Health Promotion; all located within the primary healthcare setting.

Data collection

There were five initial focus groups; two with academics (total of 11 participants) and three with HSPs (total of 14 participants) during the period of August to September 2011. Each workshop was facilitated by the IPE project officer/researcher (A. L.) with support from one other member of the research team/authors (S. L., H. W. or I. L.). Purposive sampling was used via invitations to specific discipline areas from both the university and the primary health service during each cycle of the project to encourage broad representation. Participation was voluntary and informed consent was obtained from all participants.

Analysis

The focus groups were audio recorded and notes taken by the facilitators during the sessions. Audio recordings were transcribed by the IPE project officer/researcher [A. L.] for the key content and discussions. The transcripts and notes were reviewed following each cycle (as well as during cycles 2 and 3) and descriptively coded. In cycle 1, the data were thematically coded looking for patterns and commonalities between the descriptions of the participants' perceptions of IPP. Cycle 1 analysis involved independent manual coding by three of the project researchers/authors (A. L., L. G. and I. L.). The researchers found a high level of congruence in their coding. The data were then entered in NVivo Software (QSR International Pty Ltd., 2010) and used for coding and analysis throughout the project. In cycle 2, the project officer entered and coded the data to determine participants' understandings of interprofessional capabilities. These ideas were further discussed, examined and agreed on by the research team. The team reviewed the final cycle of the project in the same way as cycle 2. This time, the data were analysed thematically in order to describe how IPE could be embedded into practice using the capability framework.

Table I. Initial themes and coding from research data.

Interprofessional communication
Reflective listening
Communication skills (concise, clear, timely and confidential)
Willingness to share information regarding clients with other health professionals
Employs use of appropriate language
Non-judgemental communication
Interprofessional teamwork
Trust, reliability, respect and promote culture of safety (team building)
Negotiation, flexibility and appropriate assertiveness
Willingness/availability to reach out engage and collaborate
Equality and respect within team; flat hierarchy
Reflection with team
Understanding own and awareness of own and other professions' scope and roles
Exhibits individual professional awareness and accountability
Being respectful and understanding of other professionals
Willingness to learn and share knowledge with other professions
Knowledge of how own practice impacts on work of other professions
Client focused (values and respects each client as an individual)
Works in partnership with client in understanding client's journey
Professional and ethical – including non-judgemental attitude and confidentiality
Advocates for and negotiates with client
Understanding the benefits of client focused care

Cycle 1: perceptions of IPP

Participants were asked to discuss what they thought was meant by the term IPP and how it may differ from multi-disciplinary practice. This led to a discussion based on the following questions: What do you feel are the benefits of IPP? What skills/capabilities do you feel a health graduate requires for them to work interprofessionally? How are these skills identified, displayed or exhibited?

Depending on the number of participants in the group, discussions took place either collectively or within smaller groups of four to five people, to encourage open dialogue. Conversations were generally undirected and free-flowing, with occasional prompts by facilitators, such as "Can you explain more what you mean by that?", "What would that look like in a student?" or "Can you give an example?" All researchers were familiar with the earlier environmental scan for the project and with the development of the four most common interprofessional domains from that work. However, to reduce bias, an attempt was made to avoid influencing the discussion with this prior knowledge, in order to allow participants' own thoughts to emerge.

Following the development of Table I to display the common themes from the data, a pictorial model of the framework was developed. It became evident that many capabilities belonged in more than one category, and that "communication" as a domain belonged in all categories, as did qualities such as "values and respect". In fact, these domains were seen to "drive", or be fundamental, to the entire IPP process. The draft model was presented along with Table I information in cycle 2 to generate discussion and feedback. The further discussion assisted clarification of language used in the model.

Cycle 2: review of interprofessional capabilities

Follow-up consultations with the participants took place to reflect on, verify and consolidate the findings of the draft capabilities and present the pictorial model. Focus group and interview participants were sent a table of the capabilities themes and then, once it was developed, the pictorial model. It proved difficult to engage a number of people together as part of a group at one time, due to other commitments and work pressures. Consequently,

the follow-up review and reflection process was carried out by a variety of small focus groups, individual interviews and e-mail correspondence, in order to gather the views of as many people as possible. A total of seven participants (six academics and one HSP) were interviewed individually and five academics responded by e-mail. Five further workshops, three with HSP's (total of 20 participants) and two with academics (total of 11 participants) took place over a period of 2 months (October to November 2011). While workshops generally ran for between 90–120 minutes, individual interviews ran for 20–25 minutes. Adjustments were made; in particular, a review of the domain of “interprofessional teamwork” resulted in a name change to “collaborative skills” as many participants felt that teamwork meant that members of a team looked inside the team, as opposed to collaboration, which depicts consideration of those outside of the team. There were also other minor modifications required, and the review process was continued until no new comments were forthcoming.

Cycle 3: exploring the framework

Following the development of the capability framework, and continuing the action research approach, a further two workshops were held with HSPs and academics together. The findings from cycle 2 steered the direction of the final cycle of the project. The aim of the final focus groups was to discuss what participants believed as needing to happen within the education and health service practice environments for the interprofessional capabilities to be met in student education programs. Questions posed to participants included the following: How can IPE, which develops these capabilities for IPP be embedded into teaching and/or practice? What resources are necessary for IPE, which develop these capabilities for IPP to be embedded into teaching and/or practice? Workshop one had 11 participants (which actually comprised of only HSP's on the day) and Workshop two, which had 14 participants (comprising 10 HSPs and four university academics).

Findings

In cycle 1, the research team agreed that all data could be coded into the four major capability themes previously determined, with no redundant data (Table I). However, a change was made from one of our original domains with a title change of “patient-centred” to “client focused”, which is further discussed in this article. In cycle 2, two levels of coding determined and helped to develop a clear picture of what IPP looked like from a primary health service and university perspective (Figure 2). In cycle 3, the data were categorised into the opportunities and barriers to the use of the capabilities. The findings have been separated into two major themes: “discourse and language” and “using the framework”.

Discourse and language

Attention was paid to the language employed in the framework, in order to be as inclusive as possible of all disciplines. In particular, there was debate in the focus groups about the use of the term “capability” in place of “competency”. On balance, after reflection by the research team and in keeping with the literature, it was decided that the term “capability” was the best fit with the broad skills and aptitudes required of IPP. It was also evident from participant comments that, although different in meaning, the term “capabilities” was accepted by more professions than was the term “competency”. The social worker quoted below, for example, clearly understood how a capability can be useful in the interprofessional context:

“...in terms of a capability, its being able to explain the basis for your professional decision-making. So you need to be

able to say to a psychologist, ‘This is why a social worker would focus on this issue, this is my knowledge base that says this is – but if we’re defining the needs of a client or a family, this is why I’d focus on this rather than this.’ So you’d need to be able to communicate that. If you can’t explain why you make choices, or your professional decision-making knowledge base, then you’re not going to be listened to in the first instance.” [Cycle 2, Workshop 12 November 2011].

In an interview, one participant was cognisant of the confusion around the use of the term “competencies” for educators:

“... unfortunately because a lot of the competency work also uses Bloom’s taxonomy, a lot of the people who work with competencies get weighed down in the teaching learning objectives, not the competency statements themselves. A real good competency statement is easy to contextualise and is at a very high level.” [Cycle 1, Interview 3, 2012].

There was also discussion around the levels of learning and whether the capabilities would need to reflect the level of the learner:

“I think the concept of what a reasonable expectation for a beginner versus an expert, and if you use your concept about being fluent and non-threatened and respectful of the expert that’s a sort of high level achievement. I think that a reasonable expectation of a beginning student is merely an awareness of the other person’s role and value to the patient and beyond that.” [Cycle 2, Workshop 7 November 2011].

It became evident that the academics were able to provide definitions that distinguished between the two terms provided (IPP and IPE), and that HSPs more often used the terms interchangeably. While both academics and HSP groups discussed the range of capabilities, there was a difference in the focus of the language; the lens through which different groups viewed the discussion was noted by all researchers. HSPs were very concerned about confidentiality and privacy in relation to shared client files, as well as the need to negotiate with clients about priorities when collaborating with other health professionals. Discussion with the academics focussed on IPP as being a more efficient way to provide care, based on what the client needs. There was also much debate about the use of the term “patient” versus “client”:

“If you take the patient-client debate as to what these people are called, it totally varies where you’re looking from and if you look at a bunch of junior practitioners they can feel it’s very important and it can become a barrier, whereas you look at a bunch of people who as you say are confident in their world, confident in their thing, they’ll say well I choose to call it a patient, I choose to call it a client, that’s fine and they’ll actually diffuse it with a little humour.” [Cycle, 2, Workshop 7 November 2011].

It became apparent in workshops that “patient” was an unacceptable term to some participants and that the term “client” was preferred:

“... there are people within an acute setting who don’t like to use the terminology ‘patient’ and some people work mainly with groups so it’s client/patient/community/families,

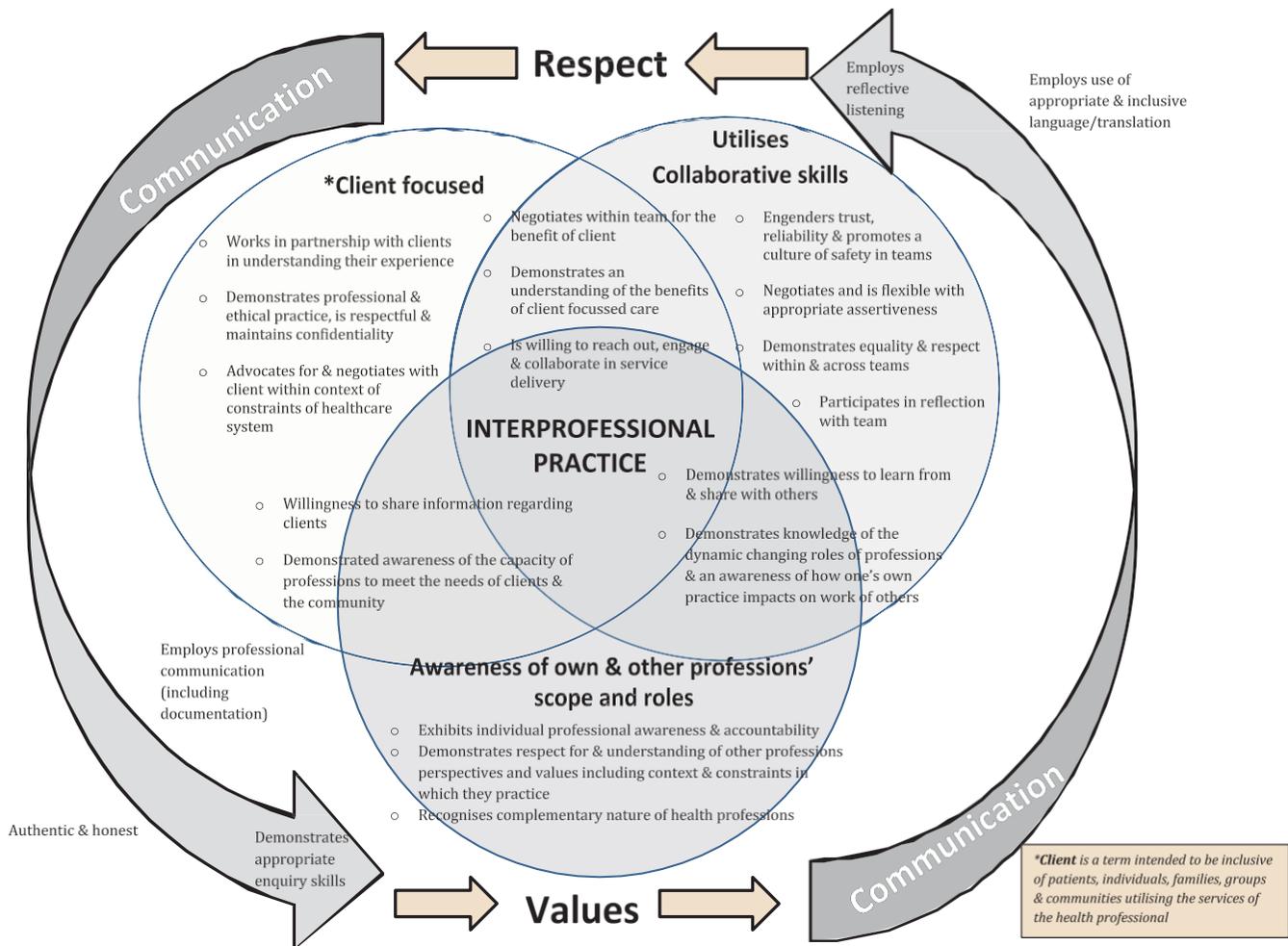


Figure 2. Framework of interprofessional capabilities for interprofessional practice.

it's hard to find an all-encompassing term.” [Cycle 2, Workshop 7 November 2011].

However, some participants also took issue with the term “client” as they did not feel it adequately encompassed families, groups and communities who were also the intended recipients of services. The term “client” was adopted, as an all-encompassing term remained elusive to the participants. An explanatory addendum was placed on the framework to explain the terminology chosen.

The overlaps in the core principles of the competency domains led to the creation of a two-dimensional schematic model (see Figure 2). In the final edit of the IPP Capability Framework, the capabilities were worded to reflect what could be “observed” of a student by the HSPs during a clinical placement; therefore, verbs such as “demonstrates” or “exhibits” were used in the construction of the capabilities.

Using the framework

A number of goals for encouraging the implementation of IPP/IPE within the health services and the university were proposed by participants during final focus groups. Participants felt both organisations needed to formally declare their ongoing commitment and support for IPP/IPE through policy, resources and support, recognition for IPE in professional roles and professional development in IPE. There were calls for further collaboration between the organisations with suggestions for joint appointments and shared student preparation for IPP, including more

individualised placement preparation for students. Participants felt that the health service, if appropriately resourced, could become an IPE hub, housing a program of interprofessional student placements, linking with local services and community and ensuring authentic interprofessional learning experiences. Some examples included:

“[a hub] where students do outreach work in an IPP approach (schools, child care centres, residential care, independent living for the elderly, community)” as well as “dedicated space for students including desks and information technology but integrated within teams” [Cycle 3, Workshop 16 April 2012].

These suggestions were optimistic and forward-thinking despite some of the challenges faced and issues aired during the project as barriers to IPE and IPP (to be published elsewhere). It was clear participants from both organisations wanted IPE to feature in preparing students for future interprofessional health care delivery.

Discussion

Debate about the term “capabilities” as opposed to the term “competency”, along with the finding that most professions preferred the term capabilities, may indicate a lack of understanding of these definitions by the participants. Fraser & Greenhalgh (2001) suggest that capability is more than competence, extending the focus of learning to encompass the

processes to build individuals' ability to adapt and generate new ideas to improve their performance. Performing capabilities addresses the complexity of being a health professional and takes into account real-life workforce contexts (Walsh, Gordon Frances, Marshall, Wilson, & Hunt, 2005). Competencies, which measure performance of a task, are restrictive for students who want to learn about interprofessional working (Walsh et al., 2005).

It has been suggested that interprofessional capabilities can be separated into three levels, in order to incorporate entry level to professional level (Curtin University of Technology (CUT), 2011; University of Toronto, 2012; Walsh et al., 2005). However, this research team adopted the view that, whilst the capabilities in the final framework represent the endpoint of health professional education, they can be shaped for learning. Fraser and Greenhalgh (2001) argue that education for capability is the way in which we assist learners to learn, by using process-oriented techniques such as informal, self-directed and non-linear learning. The CIHC (2010) have taken a slightly different approach, determining that capabilities limit assessment to outcomes only, without acknowledging the resources, knowledge, skills and attitudes acquired along the way. Instead, they have used an integrated competency approach where competencies are the foundation on which to build and apply to different contexts (CIHC, 2010). Although the term "capabilities" was preferred by our participants, this work illustrates the multiple understandings of these terms in practice for both practitioners and academic staff.

An important finding was that academics and HSPs had differing perceptions and values surrounding terminology and around relationships and interactions with clients. Academics may not have a full understanding of the nuances of day-to-day delivery of service and service staff may not be aware of the more theoretical concepts underpinning their day-to-day practice. This finding was echoed in a Canadian study where language was interpreted in various ways by different professions and appeared to be reflective of underlying professional value and belief systems (Curran et al., 2011).

The IPP Capability Framework builds on the current IPE frameworks from the literature, as well as the local and current experiences of IPP and IPE. This provides a sound foundation for ongoing IPE work. The framework appears to be highly applicable locally due to the process used to develop it. Having gained agreement from academics and HSPs across a variety of professions, the framework is reflective of how health services and academic staff view contemporary IPP. Furthermore, these capability statements have been developed as a result of engaging with a variety of professional groups and may be adaptable and useful by a range of professions. Whether this framework is applicable across settings needs to be tested further.

The framework confirms emerging work supporting the all-encompassing role of communication and values in IPP (Appendix 1). Local health service practitioners and academic staff emphasised the need for communication to be integrated as a core component across all capabilities (see Figure 2). This notion is supported by studies, such as D'Amour, Ferrada-Videla, San Martin Rodriguez, and Beaulieu (2005), who found that one of two key and constant concepts of collaboration included the construction of a team where team members have respect and trust for each other. Suter et al. (2009) agreed that communication builds the foundation for successful collaboration. The Canadian Interprofessional Competency Framework states, "interprofessional communication with other health professionals will be relevant in all situations" (p. 10).

The IPP framework described in this study is represented by a model, which captures the linkages and cross-overs between the shared domains. There is now a shared view in the partnership

that the framework adequately represents the outcomes of an attempt to combine what could have been undertaken as a one-dimensional exercise (by academic researchers), to a two-dimensional one, which has been shaped by both health service professionals and education providers. As the IPEC report (2011) suggests, core competencies are desired to intersect educationally identified core competencies for interprofessional collaborative practice and practice needs/demands, which will need to be further defined and tested. D'Amour and Oandasan (2005) were the first to create a model, which explored the interdependencies between health professional education and interprofessional collaborative practice, in the service of patients' needs and community-oriented care. The IPP Framework discussed in this study is the result of collaboration between the health and education sector.

This project suggests that educators and practitioners can and do agree on fundamental capabilities needed for the delivery of interprofessional health care. They have also identified some key directions for building on existing partnerships for further enhancing IPE. Both groups recognised the importance of organisational support and commitment, both within and between their respective organisations, in order to achieve IPE outcomes. Leadership at an organisational level is vital for IPE to be achievable (Buring et al., 2009). Both groups have also identified that they value IPE and IPP. This identification of shared values can assist in the process of decision making for change (Paarlberg & Perry, 2007), which will no doubt be needed as these two organisations work together in the future. Grace, Coventry & Batterham (2012) discuss a continuum of relationships between organisations working together to provide services, which includes communication, cooperation, coordination, collaboration, convergence and consolidation. This may be a useful concept for defining the future relationship between the health service and the university in delivering IPE, as there are likely to be pragmatic and contextual barriers to embedding IPE, especially initially when the relationship is developing. Relationships take time to establish, and the goal of effective service provision to students and clients needs to be foremost (Grace et al., 2012).

The implementation of interprofessional competency/frameworks is a work in progress. There are limited examples around the application of the frameworks thus far. Nevertheless, one well known application of an interprofessional competency framework is the ongoing work at the University of Toronto, which used a competency-based framework to build and grow their IPE curriculum. The IPE curriculum spans across 10 health science programs at all year levels and has evidence of strong engagement with clinical institutions (Reeves, Tassone, Parker, Wagner, & Simmons, 2012). The interprofessional capability framework, presented in this study, for teaching healthcare students in a primary healthcare setting is, however, limited to the views and perceptions of one university and one primary health care service in an urban context. The field of IPP is a constantly evolving area, and is still limited by the challenges of the need for champions to drive it, and for further dialogue.

Acknowledgements

Special thanks to Kathryn Anderson who assisted and encouraged the IPE team.

Declaration of interest

The authors report no conflicts of interest, and only the named authors were responsible for the content and the writing of this article.

The authors would like to acknowledge the financial support of Flinders University and the Southern Knowledge Transfer Partnerships (a jointly funded initiative by the Australian Department of Education, Employment and Workplace Relations and Flinders University).

References

- AIPPEN. (2009). Australasian Interprofessional Practice and Education Network, 2012. Retrieved February 2, 2012, from <http://www.aippen.net/what-is-ipe-ipl-ipp>
- Bartram, D. (2012). The SHL Universal Competency Framework. SHL White Paper. Retrieved January 2, 2013, from www.shl.com/assets/resources/White-Paper-SHL-Universal-Competency-Framework.pdf
- Bennett, P., Gum, L., Lindemann, I., Lawn, S., McAllister, S., Richards, J., Kelton, M., Ward, H. (2010). Faculty perceptions of interprofessional education. *Nurse Education Today*, 31, 571–576.
- Bradbury Huang, H. (2010). What is good action research?: Why the resurgent interest? *Action Research*, 8, 93–109.
- Buring, S.M., Bhushan, A., Broeseker, A., Conway, S., Duncan-Hewitt, W., Hansen, L., & Westberg, S. (2009). Interprofessional education: Definitions, student competencies, and guidelines for implementation. *American Journal of Pharmaceutical Education*, 73, 1–8.
- CIHC. (2010). A National Interprofessional Competency Framework. Retrieved December 12, 2011, from http://www.cihc.ca/files/CIHC_IPCompetencies_Feb1210r.pdf
- Cresswell, J.W. (2008). Educational research: Planning, conduction and evaluating quantitative and qualitative research (3rd ed.). New Jersey: Pearson Education.
- Curran, V., Hollett, A., Casmiro, L.M., McCarthy, P., Banfield, V., Hall, P., Lackie K, et al. (2011). Development and validation of the interprofessional collaborator assessment rubric (ICAR). *Journal of Interprofessional Care*, 25, 339–344.
- Curtin University of Technology (CUT). (2011). Interprofessional Capability Framework. Retrieved January 2, 2013, from www.healthsciences.curtin.edu.au/local/docs/IP_Capability_Framework_booklet.pdf
- D'Amour, D., Ferrada-Videla, M., San Martin Rodriguez, L., & Beaulieu, M.D. (2005). The conceptual basis for interprofessional collaboration: Core concepts and theoretical frameworks. *Journal of Interprofessional Care*, 19(S1), 116–131.
- D'Amour, D., & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. *Journal of Interprofessional Care*, 19(Suppl 1)(Special Issue: Interprofessional Education for Collaboration-Patient-Centred Care Canada as a Case Study), 8–20.
- Fraser, S., & Greenhalgh, T. (2001). Coping with complexity: Educating for capability. *BMJ*, 323, 799–803.
- Frenk, J. (2010). The global health system: Strengthening national health systems as the next step for global progress. *PLoS Medicine*, 7(1), e1000089. Retrieved April 18, 2013, from <http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000089>
- Ginsburg, L., & Tregunno, D. (2005). New approaches to interprofessional education and collaborative practice: Lessons from the organizational change literature. *Journal of Interprofessional Care*, 19(S1), 177–187.
- Grace, M., Coventry, L., & Batterham, D. (2012). The role of interagency collaboration in “joined-up” case management. *Journal of Interprofessional Care*, 26, 141–149.
- Gum, L., Richards, J., Bradley, S., Lindemann, I., Ward, H., & Bennett, P. (2012). Preparing interprofessional clinical learning sites: What the literature tells us. *Focus on Health Professional Education: A Multidisciplinary Journal*, 13, 55–70.
- Interprofessional Education Collaborative Expert Panel (IPEC). (2011). Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, DC: Interprofessional Education Collaborative.
- Paarberg, L., & Perry, J. (2007). Values management: Aligning employee values and organisation goals. *The American Review of Public Administration*, 37, 387–408.
- QSR International Pty Ltd. (2010). NVivo qualitative data analysis software, Version 9. Doncaster, Australia.
- Reeves, S., Tassone, M., Parker, K., Wagner, S., & Simmons, B. (2012). Interprofessional education: An overview of key developments in the past three decades. *Journal of Interprofessional Care*, 41, 233–245.
- Suter, E., Arndt, J., Arthur, N., Parboosingh, J., Taylor, E., & Deutschlander, S. (2009). Role understanding and effective communication as core competencies for collaborative practice. *Journal of Interprofessional Care*, 23, 41–51. doi: 10.1080/13561820802338579.
- University of Toronto. (2012). Core Competency framework. Retrieved July 23, 2012, from <http://ipe.utoronto.ca/std/docs/CoreCompetenciesDiagram2012.pdf>
- Walsh, C.L., Gordon Frances, M., Marshall, M., Wilson, F., & Hunt, T. (2005). Interprofessional capability: A developing framework for interprofessional education. *Nurse Education in Practice*, 5, 230–237.
- WHO. (2010). Framework for action on interprofessional education & collaborative practice. Switzerland: World Health Organization, Department of Human Resources for Health.
- Yassine, T., Manidis, M., Dunston, R., & Lee, A. (2011). Introducing Curriculum Renewal and Interprofessional Health Education: Establishing capabilities, outcomes and standards. Sydney: Centre for Research in Learning and Change, University of Technology.

Appendix 1

- (1) Baker, C., Pulling, C., McGraw, R., Dagnone, J., Hopkins-Rossee, D., & Medves, J. (2008). Simulation in interprofessional education for patient-centre collaborative care. *Journal of Advanced Nursing*, 64, 372–379. doi: 10.1111/j.1365-2648.2008.04798.x.
- (2) Buring, S., Bhushan, A., Broeseker, A., Conway, S., Duncan-Hewitt, W., Hansen, L., & Westberg, S. (2009). Interprofessional education: Definitions, student competencies, and guidelines for implementation. *American Journal of Pharmaceutical Education*, 73, 1–8.
- (3) CAIPE. (2007). Creating an interprofessional workforce: An education and training framework for health and social care in England. [Report]. Retrieved March 8, 2011, from www.dh.gov.uk; www.caipe.org.uk; www.eipen.org
- (4) Learning and Teaching for Interprofessional Practice, Australia, L-TIPP Australia. (2008). Interprofessional health education in Australia: A proposal for future research and development. Sydney: University of Technology. p. 33.
- (5) MacDonald, M.B., Bally, J.M., Ferguson, L.M., Lee Murray, B., Fowler-Kerry, S.E., Anonson, J.M.S. (2010). Knowledge of the professional role of others: A key interprofessional competency. *Nurse Education in Practice*, 10, 238–242.
- (6) Oandasan, I., & Reeves, S. (2005). Key elements for interprofessional education. Part 1: The learner, the educator and the learning context. *Journal of Interprofessional Care*, 19(Suppl 1), 21–38. doi: 10.1080/13561820500083550.
- (7) Pruitt, S., & Epping-Jordan, J. (2005). Preparing the 21st century global healthcare workforce. *BMJ*, 330, 637–639.
- (8) Suter, E., Arndt, J., Arthur, N., Parboosingh, J., Taylor, E., & Deutschlander, S. (2009). Role understanding and effective communication as core competencies for collaborative practice. *Journal of Interprofessional Care*, 23, 41–51. doi: 10.1080/13561820802338579.
- (9) University of Sydney. (2008). A curriculum framework for the integration of interprofessional learning (IPL) into health and social care curricula (IPL Research & Development Unit, Trans.). Sydney: University of Sydney. Retrieved March 8, 2011, from http://sydney.edu.au/education_social_work/learning_teaching/resources/FrameworkDocumentMarch08.pdf
- (10) University of Toronto. (2008). Stepping up for collaboration – Curriculum overview report: University of Toronto – Office of Interprofessional Education. University of Toronto. Retrieved March 8, 2011, from <http://ipe.utoronto.ca/std/docs/IPE%20Curriculum%20Overview%20FINAL%20oct%2028.pdf>
- (11) Verma, S., Paterson, M., Medves, J.M. (2006). Core competencies for health care professionals: What we share in Medicine, Nursing and Rehabilitation Therapy. *Journal of Allied Health*, 35, 109–115.
- (12) Verma, S., Broers, T., Paterson, M., Schroder, C., Medves, J.M., & Morrison, C. (2009). Core competencies: The next generation comparison of a common framework for multiple professions. *Journal of Allied Health*, 38, 47–53.
- (13) Walsh, C., Gordon, M., Marshall, M., Wilson, F., & Hunt, T. (2005). Interprofessional capability: A developing framework for interprofessional education. *Nurse Education in Practice*, 5, 230–237. doi: 10.1016/j.nepr.2004.12.004.