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## Case studies of five interprofessional education initiatives from seven international universities

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Review

## Case studies of five interprofessional education initiatives from seven international universities

### Abstract

#### Background

Although teamwork and interprofessional collaboration are critical to patient safety, healthcare graduates frequently report that they often feel ill-prepared to confidently communicate and collaborate with other team members. While interprofessional education has been advocated as a way of addressing this issue, there are multiple barriers to its systematic and sustained integration in undergraduate healthcare programs. Despite these challenges, examples of effective IPE initiatives have emerged.

#### Purpose

This paper profiles seven case studies of innovative interprofessional education activities that have been successfully implemented across five countries, for a variety of learners and using different delivery modalities. The evaluation results from these interprofessional education activities attest to their impact and positive outcomes.

#### Conclusion

These case studies demonstrate that the barriers to interprofessional education can be overcome when creative and targeted approaches are used. This paper provides a wealth of ideas for the successful design and implementation of interprofessional education initiatives and will be of benefit to educators wishing to expand their repertoire of teaching approaches.

#### Clinical Relevance:

A body of research attests to the relationship between interprofessional communication, teamwork and patient outcomes. Interprofessional education is imperative for facilitating the development of graduates' communication and teamwork skills, however, innovative

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3 approaches are needed to overcome the perceived and actual impediments to its  
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5 implementation.

### 7 **Key words**

9 Interprofessional education, nursing student, patient outcomes, collaborative practice,  
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11 communication, teamwork  
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### 16 **Introduction**

17  
18 A wide body of research attests to the relationship between interprofessional communication,  
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20 teamwork and patient outcomes (Levett-Jones, Oates & MacDonald-Wicks, 2014; Reeves,  
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22 Goldman, Burton & Sawatzky-Girling, 2010). Yet, too often healthcare graduates lack the  
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24 confidence and skills to communicate and collaborate effectively as members of  
25  
26 interprofessional teams (Wilson, Palmer, Levett-Jones, Gilligan & Outram, 2016).  
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28 Interprofessional Education (IPE) has been proposed as the most appropriate educational  
29  
30 strategy for facilitating the development of these skills (World Health Organization, 2011).  
31  
32 The key purpose of IPE is to prepare healthcare graduates with the capabilities required for  
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34 the collaborative practice skills required for the effective care of the complex health problems  
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36 that face individuals and communities into the future (Teodorczuk et al., 2016). However,  
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38 multiple barriers to the efficient, effective, sustained and systematic integration of IPE in  
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40 undergraduate education programs have been described in the literature (Lapkin, Levett-  
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42 Jones & Gilligan, 2012). Despite these challenges, examples of successful and innovative IPE  
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44 initiatives have emerged.  
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50 The aim of this paper is to profile a series of case studies of creative IPE activities that have  
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52 been successfully implemented across five countries, using online and face-to-face teaching  
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54 approaches, in classrooms, clinical and community settings, for both undergraduate and  
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3 postgraduate students, and that target a range of specific learning outcomes and practice  
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5 issues.  
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### 9 10 **Background**

11 Healthcare professionals are required to work both autonomously and collaboratively in  
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13 complex and dynamic clinical environments. Stone (2009) defined interprofessional  
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15 collaboration as all members of the healthcare team participating, communicating, and  
16  
17 relying on each other to achieve common goals and patient outcomes. This concept is further  
18  
19 extended by D'Amour and Oandasan (2005, p. 9) as “the process by which professionals  
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21 reflect on and develop ways of practicing that provide an integrated and cohesive answer to  
22  
23 the needs of the client/family/population.” An effective interprofessional team requires  
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25 knowledge and understanding of each member’s roles and responsibilities as well as mutual  
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27 respect for and valuing of the unique contributions made by each professional group to  
28  
29 patient care (Wilson et al, 2016). When teams communicate and collaborate effectively,  
30  
31 knowledge and information is shared, joint decision-making is enabled and team members  
32  
33 feel more confident and empowered to assume leadership for patient care issues appropriate  
34  
35 to their expertise (World Health Organization, 2010). There is convincing evidence that well-  
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37 functioning interprofessional teams have a positive impact on patient outcomes (Zwarenstein,  
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39 Goldman & Reeves, 2009). However, too often deeply entrenched cultures, power  
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41 differentials and the hierarchical nature of healthcare environments, can present barriers to  
42  
43 interprofessional collaborative practice. Thus, many healthcare graduates enter clinical  
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45 environments where the rhetoric of teamwork contrasts markedly with workplace realities  
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47 (Rice et al, 2010).  
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54 Barr et al. (2005) suggests that opportunities for health professional students to learn together  
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56 will lead to them being better prepared for working within interprofessional teams, ultimately  
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3 leading to improved patient care. IPE occurs when learners from two or more professions  
4  
5 learn about, from and with each other to enable effective collaboration and improved health  
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7 outcomes (Centre for the Advancement of Interprofessional Education, 2002). However,  
8  
9 contemporary teaching and learning approaches in higher education do not always facilitate  
10  
11 the development of healthcare students' communication, collaboration and teamwork skills,  
12  
13 and formal education and assessment in these areas is often neglected (Leonard, Graham &  
14  
15 Bonacum, 2011). Additionally, when educational opportunities are offered, they tend to  
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17 focus mainly on communication with patients and much less attention is given to  
18  
19 communicating with other health professionals. As a result graduates and their employers  
20  
21 often report that they are not well equipped to communicate and contribute effectively as  
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23 members of healthcare teams (Wilson et al, 2016).  
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27 The IPE agenda emerged more than thirty years ago but its prominence came to the fore  
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29 following multiple international patient safety reports detailing adverse patient outcomes  
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31 resulting from poor interprofessional communication and collaborative practice.  
32  
33 Consequently, these concerns led to changing policy directions in regards to IPE (Carey  
34  
35 Madill & Manogue, 2010). For example, in Canada, there is a clear policy direction  
36  
37 supporting the incorporation of IPE into health professional education with the Health  
38  
39 Council of Canada recommending that each university health sciences program offer an IPE  
40  
41 subject (Bandali et al., 2010). Similarly, the Institute of Medicine (2010) in the United States  
42  
43 advocated that healthcare professionals should be educated to deliver person-centred care as  
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45 members of interprofessional teams. In the United Kingdom (UK) outrage at the findings of  
46  
47 the Bristol Royal Infirmary inquiry, which attributed a significant proportion of clinical errors  
48  
49 to poor interprofessional teamwork (Department of Health, 2002), led to IPE becoming a  
50  
51 mandatory inclusion in preregistration training in health and social care programs  
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53 (Department of Health & Quality Assurance Agency, 2006). In Australia, the importance of  
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3 IPE has been emphasised in reports such as Towards a National Primary Health Care  
4 Strategy (Department of Health and Ageing, 2008) and Garling's Special Commission of  
5 Inquiry into Acute Care Services in NSW Public Hospitals (2008). Both reports  
6 recommended that university education should be undertaken in a manner that supports  
7 interprofessional teamwork and collaboration. However, these recommendations have not yet  
8 translated into the implementation of systematic and sustainable IPE initiatives in all  
9 healthcare programs. It is evident that, despite the progress that has been made, strategies to  
10 overcome the barriers to IPE and examples of having done so are still needed.

11  
12 In the following section of this paper, seven diverse case studies of innovative but practical  
13 IPE activities are profiled. These examples have been drawn from five countries and illustrate  
14 the use of different IPE modalities, in different contexts and with different student cohorts.  
15 Each case study is supported with evaluation data that attest to the effectiveness of the IPE  
16 experience presented.

### 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 **1. Interprofessional Education for Quality Use of Medicines (Australia)**

36 In Australia, opportunities for healthcare students to engage in IPE experience are often  
37 limited by the constraints imposed by timetabling and large student cohorts. To overcome  
38 these issues academics from the University of Newcastle designed a set of e-learning IPE  
39 modules to enable nursing, medical and pharmacy students to learn *from* and *about* each  
40 other's roles in the medication team, even when they do not have the opportunity to learn  
41 *with* each other ([www.ipeforqum.com.au](http://www.ipeforqum.com.au)). Evidence suggests that online IPE experiences can  
42 contribute to an improved understanding of professional roles and responsibilities,  
43 enhancement of students' attitudes towards each other, and improved interprofessional  
44 communication and teamwork skills (McKee, Goodridge, Remillard, & D'Eon, 2010)

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3 We targeted medication safety in the IPE modules because: (a) prescribing, dispensing and  
4  
5 administering medications are interdependent processes that require collaboration between  
6  
7 all members of the medication team (Madegowda, Hill, & Anderson, 2007); (b) safe  
8  
9 medication practices are a focus of the global strategy to improve patient safety (Sears, Ross-  
10  
11 White, & Godfrey, 2012); and (c) the prevalence of adverse patient outcomes associated  
12  
13 with medication errors remains unacceptably high with the World Health Organization  
14  
15 (2012) estimating that more than 50% of all medications are prescribed, dispensed or  
16  
17 administered inappropriately.  
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20  
21 Each of the five e-learning modules includes a video recording of a patient journey that is  
22  
23 based on an authentic representation of an actual clinical situation. A number are re-  
24  
25 enactments or adaptations of publically available critical incident reports or coronial inquests.  
26  
27 They present patients and clinicians of different genders, age and ethnic backgrounds. The  
28  
29 IPE modules have been flexibly designed so that educators can select the most appropriate  
30  
31 resource to align with the particular learning objectives of their subject. Although these IPE  
32  
33 modules provide an ideal platform for students from two or more professions to learn  
34  
35 together, they are also effective when used for teaching single disciplines as they illustrate the  
36  
37 roles and contributions of all members of the medication team. The modules can be used  
38  
39 online for self-directed learning or as stimulus materials for lectures or tutorials. A facilitator  
40  
41 guide is provided to support educators in their integration of IPE into their teaching.  
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46 Qualitative feedback about the modules has been consistently positive. Students appreciated  
47  
48 that real patient scenarios were presented in the modules and that the e-learning modules  
49  
50 were easy to navigate:  
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53 *I liked that it was based on an actual case, proving that these things really do happen and*  
54  
55 *that clear and concise IP communication (including documentation) is essential to patient*  
56  
57 *care.*  
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3 *As a visual learner being able to see a roleplay of how to communicate effectively with*  
4 *patients and other staff makes a big difference to how I plan to be a future RN.*

5  
6  
7 *Vanessa's story humanised the problem of poor teamwork, communication and medication*  
8 *errors.*  
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12 Findings from a quasi-experimental study also attest to the effectiveness of the IPE modules. Three  
13 hundred and twenty nursing, pharmacy and medical students were allocated to either an experimental  
14 (n= 155) or control group (n= 165). Participants in the experimental group who completed the  
15 modules demonstrated significantly higher intentions to practice in a way that enhances collaborative  
16 practice and medication safety than those in the control group who did not have access to the modules  
17 (p < 0.001) (Lapkin, Levett-Jones & Gilligan, 2015).  
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## 27 **2. Learning with other healthcare students in population practice (United States)**

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29 Many IPE initiatives focus on co-learning in the classroom; however, the School of Nursing  
30 at Oregon Health and Science University developed the Interprofessional Care Access  
31 Network (I-CAN), an authentic interprofessional clinical experience. Students are allocated  
32 to a neighbourhood with vulnerable and underserved populations and a high prevalence of  
33 poverty and/or complex health needs. There are three neighbourhoods where students serve:  
34 (1) an inner city neighbourhood with many people who are homeless and live in single room  
35 occupancy (SRO) hotels; (2) a rural community, served by a large Spanish-speaking clinic;  
36 and (3) an urban neighbourhood with large numbers of recent immigrants and refugees,  
37 primarily Bhutanese, Congolese, and Syrian.  
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50 Throughout the term, nursing students carry a caseload of 2-4 clients who require care  
51 coordination services, and are referred by partner agencies within these neighbourhoods.  
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53 Nursing students work side-by-side with medical, dental and/or pharmacy students visiting  
54 clients in their homes or a common meeting place. Typical examples of these services include  
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3 a pharmacy and nursing student working together to provide education and support to a  
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5 homeless client with mental health issues who has difficulty obtaining and using prescribed  
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7 medications; and nursing, dental and medical students addressing issues associated with poor  
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9 nutrition and dentition in neighbourhoods where unstable housing and food scarcity are  
10  
11 common (Wros, Mathews, Voss & Bookman et al., 2015).  
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14 Students are supported by nursing faculty-in-residence (FIRs) who provide continuity for  
15  
16 clients and the project as a whole (Wros et al., 2015). The FIRs also facilitate ongoing  
17  
18 population health projects in which nursing students participate and serve as resources in the  
19  
20 neighbourhoods with interprofessional teams. Feedback about the I-CAN IPE experiences  
21  
22 has been consistently positive, for example:  
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24  
25 *I really enjoyed working amongst teams of nursing, dental, physician assistant and medical*  
26  
27 *students to share ideas, learn from each other, and develop plans to best serve the needs of the*  
28  
29 *clients [pharmacy student].*  
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31  
32 *Over the 10 week I-CAN program it was rewarding to see how clients were able to accomplish*  
33  
34 *or make strides towards many of their healthcare goals with the help of their I-CAN team*  
35  
36 *[physician assistant student].*  
37

38  
39 *We had the opportunity to work with medical students to provide care to patients in the*  
40  
41 *community. This collaborative education gave us practice working as a member of an*  
42  
43 *interprofessional team. Our group came up with the analogy of a football team; the most*  
44  
45 *effective offense is one where each teammate knows each other's role. Likewise, in order to*  
46  
47 *provide best patient care, physicians, nurses, and other members of the healthcare team should*  
48  
49 *have an understanding of each other's roles and responsibilities [nursing student].*  
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51  
52 *By working with students from different professional backgrounds we are able to apply our*  
53  
54 *own knowledge towards a common goal and also learn from each other [pharmacy student].*  
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3 Like many IPE initiatives the major challenge of the I-CAN project was scheduling and  
4  
5 provision of appropriate opportunities for students to learn together in the same place at the  
6  
7 same time (Gordon, Lasater, Brunett & Dieckmann et al., 2015).  
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### 10 11 **3. Interprofessional education in a ward setting (Sweden)** 12

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14 Students from Lund University participate in mandatory-ward based IPE activities during the  
15  
16 latter part of their educational programs, with learning outcomes focusing on teamwork,  
17  
18 professional collaboration and preparation for future professional roles. Previous experience  
19  
20 indicated that opportunities for students to learn about interprofessional collaboration and  
21  
22 cooperation varied considerably between clinical settings. Therefore, this ward-based  
23  
24 educational activity was specifically designed to facilitate quality IPE experiences for all  
25  
26 students.  
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29  
30 IPE teams consisting of a nursing, medical and physiotherapy student (see Figure 1)  
31  
32 undertake eight-day clinical placements. During this time students are encouraged to learn  
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34 with, from and about each other to develop knowledge and skills beyond their own  
35  
36 professional role. Supervisors are on hand at all times; nursing supervisors work day and  
37  
38 night shifts seven days a week, and the medical and physiotherapy supervisors work  
39  
40 weekdays.  
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44 The IPE activity takes place in a 14-bed hospital ward that specialises in the care of older  
45  
46 people with conditions such as heart failure, pneumonia, and diabetes. Patients and their  
47  
48 families are informed on admission that undergraduate students will be caring for them  
49  
50 during their hospital stay and their verbal consent is obtained. Each IPE team has the  
51  
52 responsibility for providing care for 3-6 patients. Provision of routine personal care, for  
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54 example, provides opportunities for the students to gain to gain a deeper understanding of  
55  
56 each other's roles, responsibilities, knowledge and skills.  
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3 This IPE activity has been running, in its current form, since 2013 and the ward has been  
4 hosting approximately 60 students per semester. Although patient feedback is not routinely  
5 sought, several patients specifically ask to return to the student ward on re-admission.  
6  
7 Following this IPE experience students meet with their supervisor and a lecturer from the  
8 university to reflect on issues associated with their own profession and the transition between  
9 their role as students and their professional roles. They are also required to submit a written  
10 reflection about their IPE experiences focusing specifically on team collaboration, their role  
11 in the professional team, what they learned and how they will make use of their IPE  
12 experiences in their future practice. The reflections are graded on both content and quality.  
13  
14 Students evaluate the IPE experiences using a 10-item questionnaire that uses a 6-point scale.  
15  
16 Feedback has been highly positive with regards to the three domains of teamwork,  
17 communication and supervision, with the exception of physiotherapy students who do not  
18 always feel that the IPE experience allows them to *develop their professional competence*  
19 (see Figure 1).  
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#### 36 **4. An IPE activity to enhance understanding of compassionate care, ethical practice,** 37 **team work and professional roles (United Kingdom)**

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39 At Keele University first year nursing, midwifery, medicine, physiotherapy, pharmacy and  
40 biomedical science students participate in an IPE initiative designed to enhance  
41 understanding of different health care roles, and the importance of collaboration and team  
42 work. Situating the IPE initiative in first year aims to address students' pre-conceived  
43 stereotypes about the roles of other team members (Derbyshire & Machin, 2010; Lewitt,  
44 Ehrenborg, Scheja & Brauner, 2010; Mandy, Milton & Mandy, 2004). This approach also  
45 helps to develop a sense of professional identity, empathy towards other members of the  
46 team, and understanding of the importance of effective teamwork and communication  
47 (Anderson & Lennox 2009; Baker, Egan-Lee, Martimianakis & Reeves, 2011).  
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3 Students attend an introductory plenary session which outlines the structure, concepts and  
4 content of the IPE activity. They then divide into smaller interprofessional groups of no more  
5 than 15 students to discuss the concepts of compassionate care, ethical practice, team work  
6 and professional healthcare roles. The stimuli for this activity are cases from the Mid  
7 Staffordshire NHS Foundation Trust Public Enquiry into patient neglect, safety and death  
8 (Francis, 2013). To support the discussion and to help facilitate students' understanding of  
9 relevant concepts, the 6Cs (care, compassion, competence, communication, courage and  
10 commitment) (Cummings, 2013) and ethical principles of care (Beauchamp & Childress,  
11 2009) are provided electronically as pre-reading. This activity takes place over two  
12 afternoons with online discussions in between. At the end of this IPE activity each group  
13 develops of a poster depicting key issues associated with their case. The poster is then  
14 presented by the group to other students, academic staff and service users.  
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30 The interprofessional nature of the learning experience facilitated interesting discussions  
31 about the content and professional training requirements of the different health care  
32 disciplines. Students (n=562) welcomed the opportunity to learn alongside healthcare  
33 students who they would not otherwise interact with during their courses. Feedback from  
34 staff was also positive; they valued the unique opportunity to work with colleagues from  
35 other schools and the sharing of ideas about learning and teaching practices.  
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44 Students expressed a marked increase in their understanding of how poor team work,  
45 ineffective communication and lack of compassionate care resulted in the poor outcomes  
46 described in the Francis Report (2003). The IPE experience dispelled many preconceived  
47 ideas that students had previously held and they had an enhanced appreciation of the roles of  
48 other healthcare professionals. Biomedical science and pharmacy students shared insightful  
49 comments acknowledging that, although they would not be at the forefront of care, they  
50 nevertheless made a valuable contribution to the work of the team. They also recognised the  
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3 relevance of the 6Cs and ethical principles to their roles, that patient dignity and respect were  
4  
5 integral to managing prescriptions and samples, and that effective communication was  
6  
7 essential to prevention of errors. Following the IPE activity students expressed a  
8  
9 determination to apply their learning to their future practice, particularly in regards to  
10  
11 effective communication, teamwork, respecting other healthcare professionals, and ensuring  
12  
13 that patients and family members remain at the centre of care provision.  
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16  
17 This IPE activity has been conducted for two consecutive years. Enabling first year  
18  
19 healthcare students to analyse actual cases from the Francis Report together has proven to be  
20  
21 a powerful influence on their educational and professional development. Feedback from  
22  
23 students who completed the activity in previous years has demonstrated how their learning  
24  
25 from this activity has influenced their clinical placements with patient safety and  
26  
27 compassionate remaining top priorities.  
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### 30 31 **5. Building connection between researchers from different disciplines (Australia)**

32  
33 When students study in silos they can gain a limited appreciation of the diverse research  
34  
35 agendas, approaches and world views of different disciplines. However, exposure to  
36  
37 different philosophies, ontologies, epistemologies and methods can open up new and  
38  
39 illuminative ways of thinking about social phenomenon, global issues, and disciplinary  
40  
41 perspectives. Learners can also gain an understanding of the critical thinking skills that tend  
42  
43 to be emphasised and developed in different research traditions (Tesch, 1990).  
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46  
47 In this example of IPE the aim was to enhance communication, collegiality and  
48  
49 interdisciplinary understandings between research students. The POEM (Philosophy,  
50  
51 Ontology, Epistemology and Methods activity) was a creative way to facilitate conversations  
52  
53 between students about their similarities and differences. It has been used at Central  
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3 Queensland University as a critical thinking activity with nursing, education and creative  
4 writing research students participating as part of a research training activity.  
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8 The rationale for, and background to this activity was explained to students and they were  
9 given two examples of POEMS previously constructed by a social worker and an  
10 occupational therapist (McAllister et al., 2012). Pairs of students from the same discipline  
11 were asked to reflect on their research approach and philosophy and develop a POEM that  
12 represents their world views. The POEMS were then shared with the entire group and  
13 interdisciplinary similarities and differences were discussed. The ensuing discussions were  
14 illuminative and engaging.  
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18 Students began to recognise the diversity of approaches used in different disciplines, and that  
19 research questions and designs are shaped by underpinning knowledge traditions, and  
20 methods of data collection and analysis. Students said that the activity expanded their  
21 understanding of methodologies and how different approaches emerged from a discipline's  
22 particular interest and world view. For example, ethnography emerged from the sociology  
23 and anthropology disciplines to take a broad and unobtrusive examination of culture; but is  
24 now being utilised by many other disciplines such as nursing and creative writing students.  
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27  
28 Students stated that this IPE activity assisted them to match their research question with an  
29 appropriate methodology. For example, one student discussed a practice-led research project  
30 where a non-fiction writer was researching the use of changing voice in her creative works.  
31 She was able to better articulate and link the methods (that is, the practice of writing in a  
32 different voice) and the ontological stance (shifting standpoints helped to evoke the sense of a  
33 new character who held a different view of the world); with the philosophy and set of  
34 knowledges underpinning the discipline of creative writing. Another student discussed the  
35 historical inquiry approach taken to tell the story of a group of First World War nurses. She  
36 argued that historical research has its own conventions and traditions (philosophy), and  
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3 requires researchers to be impartial but also curious (ontology), take a rigorous approach to  
4 discerning fact from here-say to identify truths (epistemology), but that the retelling of  
5 history is always partial, incomplete and dependant on the researcher's interpretation of  
6 events (methods).  
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10 Evaluation results (n=17) demonstrated that following the IPE POEM activity students felt  
11 they had an enhanced understanding of the research process (71%) and confidence in  
12 themselves as researchers (76%). Importantly, they also reported that a key highlight of the  
13 activity was the opportunities to communicate with and learn from students from other  
14 disciplines.  
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#### 24 25 **6. IPE patient safety workshops (Singapore)** 26

27 In recognition of the relationship between patient safety and effective interprofessional  
28 communication and collaboration (World Health Organization, 2011), the Yong Loo Lin  
29 School of Medicine at the National University of Singapore, implemented a one-day IPE  
30 patient-safety workshop focusing on the six International Patient Safety Goals identified by  
31 the Joint Commission (2011). These included: correct patient identification, effective  
32 communication, medication safety (high-alert medications), correct patient, site, and  
33 procedure for surgery, reduced healthcare associated infections, and reduced falls. By  
34 focusing on these issues as an interprofessional group it was hoped that together the students  
35 would identify teamwork strategies that could influence their future professional practice.  
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47 Each workshop was facilitated by trained academic staff and practitioners from different  
48 disciplines. In order to encourage interactivity a variety of teaching and learning strategies  
49 were employed, for example, brief lectures, videos, root-cause analyses from real case  
50 scenarios, role plays and posters. To date 554 medical, nursing and pharmacy students have  
51 participated in the workshops. As with many IPE initiatives there have been challenges.  
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3 Foremost among these were the logistical and scheduling issues associated with coordinating  
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5 a large number of students from three different schools and the resource intensive nature of  
6  
7 the workshops.  
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9  
10 Students' (n = 527, response rate 95%,) evaluations of the workshops have been positive and  
11  
12 an average of 86% of the participants found the six IPE sessions to be 'good' or 'very good'.  
13  
14 Suggestions for improvement included the use of teamwork games and refined in-house  
15  
16 videos.  
17

### 20 21 **7. An IPE activity to achieve integrated care (United Kingdom)** 22

23 The integration of health and social care is at the heart of health policy in England  
24  
25 (Department of Health 2014). It involves care that it is individualised and person-centred  
26  
27 (National Voices 2013) with effective communication and coordination between members of  
28  
29 the interprofessional team. Importantly, integrated care aims to ensure that the level of  
30  
31 control over the planning of care is determined by the patient or service user and that systems  
32  
33 are in place to support the individual and avoid a crisis. When implemented effectively  
34  
35 integrated care helps reduce confusion, repetition, duplication and delays (Department of  
36  
37 Health, 2014)  
38  
39

40  
41 Workforce preparation for integrated care requires the bridging of gaps within and between  
42  
43 health and social care services through the promotion of positive attitudes that overcome  
44  
45 boundaries between professions and organisations. The core competencies of integrated care  
46  
47 include interprofessional working, understanding whole systems networking, patient-centred  
48  
49 care, approaches to shared decision-making and care pathways (Shaw, Rosen & Rumbold,  
50  
51 2011).  
52  
53

54  
55 Bournemouth University provides IPE focused on integrated care for all undergraduate  
56  
57 cohorts from nursing, occupational therapy, paramedic science, midwifery, physiotherapy  
58  
59  
60



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2  
3 and operating department practice. Approximately two hundred students attend each IPE  
4  
5 integration event during which they collaboratively examine case examples such as a 'missed  
6  
7 communication' that impacted negatively on the patient and their family. They then identify  
8  
9 strategies to alleviate or prevent this type of error occurring in the future with the support of  
10  
11 expert practitioners. They then present their emergent ideas to the wider group.  
12

13  
14 Students work in small and large groups that form, reform, splinter and enlarge on an  
15  
16 ongoing basis so they work with a range of disciplines on a number of occasions over the  
17  
18 course of the event. This inter-working and cross-disciplinary engagement enhances patient  
19  
20 safety by providing opportunities for students work together towards a patient-centred  
21  
22 outcome (Ndoro, 2014, World Health Organization, 2010 and Frenk et al., 2010).  
23  
24

25  
26 Evaluation of the integrated care IPE activity has been consistently positive with examples of  
27  
28 students' comments including:  
29

30  
31 *I have benefited from attending this course... excellent*  
32

33  
34 *It will change the way I practice*  
35

36  
37 *We were all actively involved, which was really good*  
38

39  
40 The integration event is just one of a series of IPE activities that occur throughout the three  
41  
42 year undergraduate programmes at Bournemouth University. Others look at issues such as  
43  
44 safeguarding, dementia and learning disabilities. The IPE events run either as stand-alone  
45  
46 units of learning, that include information useful to all students irrespective of discipline, and  
47  
48 others that are linked with discipline-specific units of learning that other disciplines can  
49  
50 attend. The learning outcomes for the IPE events include an increased knowledge about the  
51  
52 subject itself, an increased capacity to work together, enhanced creativity and a broadening  
53  
54 understanding of each other's roles.  
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## Discussion and Conclusion

Internationally there is a requirement for universities to prepare healthcare graduates with the professional attributes and skills needed to work within increasingly complex and dynamic clinical environments. Their ability to communicate and collaborate with other team members is critical, both to patient safety and to work satisfaction (Zwarenstein et al., 2009). Graduates therefore require a sound understanding of the roles and responsibilities of other team members, which in turn helps to facilitate trust, mutual respect, and shared decision-making (Wilson et al, 2016). IPE is a key strategy for supporting the development of these skills (World Health Organization, 2011).

Although IPE has been identified as integral to the preparation of future health professionals there are many pragmatic constraints that can impede implementation. Despite the acknowledged challenges, this paper has demonstrated that integration of IPE is not only possible, but in many environments has already been successfully achieved through shared commitment and the use of creative educational approaches. The IPE activities profiled illustrate the impact of online and face-to-face teaching approaches, conducted in classrooms, clinical and community settings, for both undergraduate and postgraduate students, from across five countries. It is hoped that the seven examples provided will motivate educators to re-create, adapt and implement innovative and practical IPE activities within their own educational context.

## Clinical Resources

Interprofessional Education for Quality Use of Medicines:

<http://www.ipeforqum.com.au/modules/>

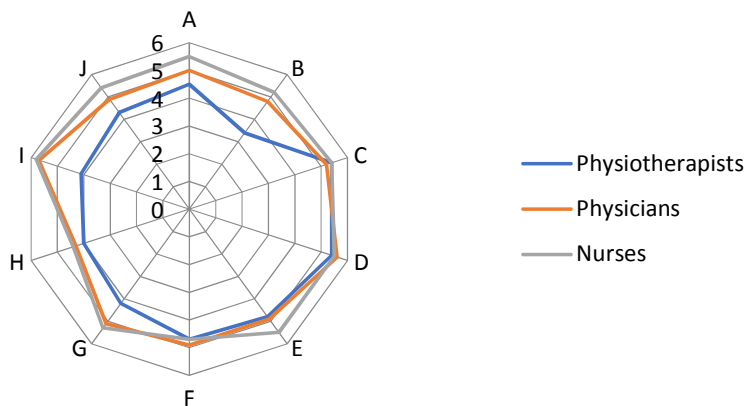
This website provides five e-learning modules designed to help students learn about medication safety and prepare for interprofessional clinical practice.

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*A: I developed a new perspective on my role in the team*

*B: I have developed my professional competence*

*C: I have developed my understanding of other professional competence*

*D: I have developed my understanding of the importance of team communication*

*E: I have developed my ability to communicate as a team member*

*F: The overall supervision was good*

*G: The specific professional supervision was good*

*H: I felt informed after the joint introduction*

*I: The team simulation task was considered meaningful*

*J: This placement was an essential element of my education so far*

**Figure 1:** 2015 evaluation results from the ward-based IPE activity (n=58).