

Interprofessional Education

The Genesis
of a
Global Movement

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Preface

Why so many interprofessional education (IPE) initiatives have been reported in so many countries since the 1960s defies easy explanation. Some were responding to needs locally to improve working relations in primary and community care teams; others to calls to integrate health and social care services, implement workforce strategies, or remedy lapses in collaboration between professions; yet others to the lead given by the World Health Organization (WHO) to transform professional education and practice. Small wonder if mounting expectations raised doubts whether IPE could deliver.

The interprofessional movement thrives where conditions are conducive; where openness and mutual support in the workplace characterise relations; where democratisation in universities liberalises learning; where the need for change to improve health and social care is addressed. Sustaining progress depends, as this review confirms, on the readiness of interprofessional exponents to set aside professional protectionism and academic rivalry as they support each other across borders and boundaries.

Pioneers in Australia, Europe and North America led the way. Experienced interprofessional teachers in some countries supported less experienced in others. Professional conferences invited interprofessional presentations as they opened their doors to other professions generating interprofessional special interest groups. Professional journals accepted interprofessional papers as interprofessional journals were established. The ground was prepared to convene interprofessional networks, many with their own websites, databases and learning resources, as the seeds were sown for the global movement recognisable today.

Encouraging though all that may be, the story would be less than complete without also acknowledging resistance and setback where the interprofessional message has been misrepresented or misunderstood. Determined efforts have been made in response to clarify and agree IPE principles, processes and outcomes undergirded by evidence.

We strive to capture the dynamic driving the interprofessional movement in a growing number of countries over half a century as we piece together the story from disparate sources augmenting and updating material first published in 2000 on the CAIPE² website - www.caipe.org.uk - before being revised as a chapter in Meads and Ashcroft (2005). Initiatives cited are indicative in time and place. Accessible sources are weighted towards university rather than employment, pre-qualifying rather than post-qualifying and explicit rather than tacit interprofessional learning. Omission should not be taken as implying absence.

We feature those countries:

- making distinctive interprofessional contributions;
- progressing beyond isolated 'initiatives' to build interprofessional networks;
- reaching out to forge relations with other countries;
- contributing documentary sources and personal accounts that tell their story.

We touch briefly on interprofessional developments in other countries. Some may well be ready to share their experience when this review is updated. We look forward with your help to learning about more interprofessional developments to weave into future revisions of this paper - barrhugh12@gmail.com.

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Readers in search of an overall understanding IPE worldwide may find the opening and concluding sections most pertinent. Others may prefer to dip into sections by country or continent although much of the interest lies in comparing similarities and differences.

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We employ the first person plural throughout this paper to include all who have contributed while the author as named accepts personal responsibility for errors and omissions. He has much appreciated help from those able to counter his bias and that in the interprofessional literature towards the Anglo-Saxon developed countries by introducing interprofessional perspectives beyond the English speaking world. Thanks go especially to Madeline Schmitt for critiquing successive drafts and contributing a wealth of sources which would otherwise have been missed.

Global Initiatives

The genesis of IPE is widely attributed to an Expert Group convened in Geneva by the World Health Organization (WHO, 1987). Its report inspired initiatives around the world reaffirming much that the WHO had said previously. Support for IPE had sprung from mounting concern over many years regarding the relevance of health professions' education, especially medical education, as Tope (1987) assiduously documented. In 1973, a WHO Expert Committee reviewing medical education had seen interprofessional and traditional programmes as complementary. Its members believed that IPE would improve job satisfaction, increase public appreciation of the health care team and encourage a holistic response to patients' needs. Their conviction was confirmed by examples of IPE cited in no fewer than fourteen countries - Algeria, Australia, Canada, Egypt, France, Israel, Mexico, Nepal, Pakistan, the Philippines, the Sudan, Sweden, the United Kingdom (UK) and the United States (US). Each member state in the WHO was charged with the task of providing interprofessional programmes, beginning with demonstration projects (WHO, 1973). By the time delegates met in Alma Ata (WHO, 1978), IPE was firmly included in the emerging WHO strategy to promote 'Health for All by the year 2000'.

Meanwhile, the Organisation for Economic Co-operation and Development (OECD) had convened a conference to foster exchange of experience between IPE programmes in different countries. It cited examples of core curricula which it commended to develop 'regional universities' to unite schools for the health professions in a common mission in response to the needs of the societies they served (OECD, 1977).

The World Federation of Medical Education first acknowledged IPE in 1988 (WFME, 1988) calling on all nations globally to provide training for their doctors in close association with that provided for the other health professions, a message that it reinforced later (WFME, 1994). The ethos of teamwork was established, said Lord Walton (then President of the WFME), through IPE. The outcome would be more cost-effective doctors, better equipped to work as members of health teams for the benefit of both patients and communities (Walton, 1995).

Reference to IPE was conspicuous by its absence from WHO publications for some 20 years until it agreed in 2006 to convene a study group in partnership with the International Association for Interprofessional Education and Collaborative Practice (InterEd) which had been recently launched. WHO officials urged the study group to engage with strategic policy makers nationally and internationally to address besetting problems and to demonstrate especially how IPE and collaborative practice could alleviate the global workforce crisis in health care (WHO, 2006). The study group did indeed respond to the WHO priorities but stopped short of making claims regarding the impact of IPE on the workforce crisis. The outcome was a frame of reference, neither blueprint nor roadmap; the objective to assist policy makers in positions of influence test the desirability and the feasibility of a package of interprofessional propositions in the context of national and international needs, priorities, resources and opportunities (WHO, 2010).

The WHO published the report without endorsing it. Its Health Professions Networks nevertheless followed up the report (www.who.int/hrh/professionals/en/). So did the newly created Health Professions Global Network (HPGN) which took IPE as one of a series of two-week web-based debates (www.hpgn.org). A thousand participants from a hundred countries signed up, of whom 293 contributed from 44 countries. Countries with the greatest number of participants were: Australia (102), Brazil (11), Canada (75), Egypt (45), Ethiopia (14), Hong Kong (10), India (58), Ireland (21), Kenya (22), the Netherlands (14), New Zealand (14), Nigeria (28), Portugal (13), Romania (11), South Africa (17), Switzerland (34), Uganda (12), the UK (70) and the US (219). While the majority of participants registered were from high income countries, the greatest number of contributions came from those in developing countries. Discussion focused on interprofessional collaboration in

education and practice with an emphasis on primary health care. Participants widely supported the integration of IPE into undergraduate programmes, providing early exposure to IPE linking theory and practice with positive interprofessional role models (Wistow, Usher-Patel, Fusco et al., 2010). Sadly, the opportunity to build on this remarkable initiative was lost.

Corroboration regarding the spread of IPE worldwide came from an online global scan conducted by WHO regional staff in 2008 in association with members of the Study Group. Educators and researchers were targeted in the 193 WHO member states. The 396 responses came from 41 of those states in the WHO's six regions. Nine out of every ten were from countries with high income economies, and two thirds from Canada, the UK and the US, predominantly reporting university based IPE during undergraduate studies (Rodger & Hoffman, 2010).

The 41 countries were (with the number of respondents in brackets): Armenia (1), Australia (26), Bahamas (2), Belgium (1), Canada (98), Cape Verde (1), the Central African Republic (1), China (3), Croatia (2), Denmark (7), Djibouti (1), Egypt (1), Germany (4), Ghana (1), Greece (2), Guinea (1), India (5), Iran (2), Iraq (1), Ireland (23), Japan (2), Jordan (2), Malaysia (1), Malta (2), Mexico (2), Moldova (1), Nepal (1), Norway (6), Pakistan (2), Papua New Guinea (1), Poland (2), Portugal (18), Saudi Arabia (1), Singapore (1), South Africa (1), Sweden (26), Thailand (2), the United Arab Emirates (1), the UK (72), Uruguay (1) and the US (66). IPE was more often reported from developed than developing countries.

IPE had already been reported in Algeria, the Cameroons and the Dominican Republic (Kuehn, 1989; Vinal, 1987), Colombia (Penuela, 1999), Fiji and India (Bajaj, 1994), the Lebanon (Makaram, 1995), the Philippines, South Africa (Lazarus et al. 1998), the Sudan (Hamad, 1982; Tope, 1996) and Thailand (WHO, 1987; Tope, 1996). While some of the initiatives reported in developing countries were similar in form and composition to those reported in developed countries, others extended the range of professions to include, for example, agriculturists, engineers and sanitarians engaged in public health and community development projects. Some were also designed to create a flexible workforce that the country could afford, unfettered by narrow definitions of professionalism and preconceived demarcations inherited from colonial powers.

A website (www.ecipen.org), Google Group (ipenetwork@peoplegroups.com) and Facebook group facilitated exchange between 165 participants interested in IPE and collaborative practice in the following African and Eastern countries: Afghanistan, Azerbaijan, Bangladesh, China, Egypt, India, Indonesia, Iran, Iraq, Kazakhstan, Kenya, Kuwait, Malaysia, Nigeria, Pakistan, Qatar, Russia, South Africa, Thailand, Turkey, Turkmenistan, the United Arab Emirates and Uzbekistan. Of these, six (Indonesia, Iran, Kenya, Malaysia, Pakistan and Qatar) reported ongoing IPE activities and two (Azerbaijan and Iraq) exploratory conferences or seminars.

The independent Lancet Commission (Frenk et al., 2010) reviewed health professions' education worldwide a hundred years after Flexner's groundbreaking report on medical education (Flexner, 1910). The Commission called for a comparable vision and a common strategy not only for medical but also nursing, midwifery and public health education transcending national borders and professional demarcations. Fragmented and static curricula needed to be updated to equip graduates for practice in the 21st century.

According to the Commission, all health professionals in all countries had to be educated to mobilise knowledge and to engage in critical reasoning and ethical conduct to participate competently in patient and population centred health systems. Learning was not only be formative and informative but also transformative to develop leadership for change. Interdependence in education was needed. Stand-alone institutions needed to form networks, alliances and consortia to promote interprofessional and trans-professional education to break down professional silos.

Alive to the resistance which its recommendations might encounter, the Commission called for support from academic, professional and political leaders locally and nationally to contribute to a global movement of stakeholders to promote joint education and health planning mechanisms in every country. Implementation would depend critically on the readiness of the UN and the WHO to pick up the baton.

Seldom had such an authoritative group championed the interprofessional cause with such cogency and conviction. Work nevertheless remained to be done to ground the Commission's arguments in past and present IPE experience and to marry up its framework with that of the WHO working group (WHO, 2010) to which it made no reference. Only then would the parties be ready to move ahead as one (Thistlethwaite, Barr & Gilbert, 2011).

The WHO made a start when it drew on arguments and evidence about IPE from the Lancet Commission and WHO frameworks in its first ever guidelines for health professions education and training (WHO, 2013a). The guidelines reaffirmed the essential tenets of IPE, but went no further than commending it with caution pending stronger evidence. IPE was nevertheless showcased subsequently on the WHO website launched to carry forward developments in transformative education (www.whoeducationguidelines.org/)

Europe

The WHO Regional Office for Europe convened a workshop in Copenhagen to complement the seminal report from its headquarters in Geneva (WHO, 1988). Participants believed that IPE would help health professions' students with complementary roles in teams appreciate the value of working together through defining and solving problems within a common frame of reference. Participatory learning methods would facilitate modification of reciprocal attitudes and foster team spirit, identifying and valuing respective roles, whilst effecting change in both practice and the professions. All that would support the development of integrated health care, based upon common attitudes, knowledge and skills. Programmes were to be mounted collaboratively at every educational level and evaluated systematically (d'Ivernois & Vodoratski, 1988).

Two IPE reviews were conducted in Europe. The first informed discussions during the WHO workshop (d'Ivernois, Cornillot & Zomer, 1988) including reports on developments in Belgium (Piette, 1988), Finland (Isokoski, 1988), France (d'Ivernois, Cornillot & Zomer, 1988), Greece (Lanara, 1988), Portugal (Rendas, 1988), Sweden (Areskog, 1988a), the UK (Clarke, 1988; Thomson, 1988), the USSR (Shigan, 1988) and Yugoslavia (Kovacic, 1988). The second, commissioned later by the Council of Europe (European Health Committee, 1993), focused on IPE in universities rather than in the workplace, with little reflection regarding the context in which IPE had been instigated. It took the form of a questionnaire to all member states, with follow up visits to some. Information citing examples of IPE was received from Cyprus, Germany, Liechtenstein, Luxembourg, the Netherlands, Norway, Spain, Switzerland and Turkey. In addition, working party members reported developments in their home states, namely Austria, Belgium, Czechoslovakia, Denmark, Finland, France, Hungary, Portugal, Sweden and the UK.

Even so, the Council of Europe was disappointed by the findings. IPE had reportedly been implemented in only a few European centres. Postgraduate developments were spread thinly. In most countries they took the form of `on the job` short courses, joint learning leading to diplomas or degrees being the exception. Most developments were in response to local initiatives. None of the member states reportedly had national policies to encourage IPE. Save for the Netherlands, central government departments for health and education were, according to the report, unaware of what was taking place in their own countries.

The Council of Europe nevertheless endorsed the report and outlined a four-stage strategy to promote IPE in its member states: the dissemination of information through seminars; access to consultants to help in planning programmes; implementation of those programmes; and systematic evaluation (European Health Committee, 1993). The European Network for the Development of Multiprofessional Education in Health Sciences (EMPE) was established in 1987 (Goble, 1994a&b) and continued until 2000 when, relinquishing its distinctive European identity, it became the IPE special interest group in the Network for Community-based Medical Education (now the Network Towards Unity for Health).

The gap that EMPE left in Europe was filled by EIPEN - the European Interprofessional Practice and Education Network - funded twice over from the European Commission Erasmus programme and led by three Subject Centres of the UK Higher Education Academy, working with universities in Finland, Greece, Hungary, Poland, Sweden and the UK plus its Centre for the Advancement of Interprofessional Education (CAIPE). The first of two phases included transnational meetings and an international conference in Krakow. The second, funded for a further 12 months, expanded the network to include institutions in Belgium, Ireland and Slovenia. Conferences continued after the EU funding ended. Support was generated to establish EIPEN as a membership organisation to be based in Belgium running biennial conferences to be hosted by universities throughout Europe and links established with the European Forum for Primary Care launched in 2005 (<http://euprimarycare.org>).

Founded in 1987, CAIPE promotes IPE, primarily in the UK but with international outreach, as a means to improve collaboration between practitioners in health and social care. CAIPE works with and through its members to provide a network for information exchange and discussion by means of conferences, workshops, seminars, a bulletin, and occasional papers, surveys and reviews. It includes a lively student network which meet every six months, nominating representatives to attend overseas conferences and to serve on the CAIPE Board (www.caipe.org.uk).

Mutual support and stimulus between interprofessional activists in Denmark, Finland, Norway and Sweden is facilitated through the website and biennial conferences of the Nordic Network for Interprofessional Education (NIPNET) established in 2000 (www.nipnet.org).

Denmark

Interprofessional collaboration in Denmark dates back to the early 1960s enshrined in law in order to prevent the exclusion of people with social, physical or other disabilities and to improve the efficiency of service delivery. Interdisciplinary collaboration and teamwork is written into Danish regulations for medical, nursing, other health professions and social work education. For example, courses for nurses include an interdisciplinary teamwork module covering the different contributions of the health professions in promoting quality, continuity and cross-disciplinary collaboration in patient trajectories. West Jutland University College reportedly had the most longstanding broadly-based IPE provision (Nielson & Hamming, 2008).

Initiatives elsewhere in Denmark have been developed and evaluated including interprofessional clinical studies (Jensen, Nørgaard & Draborg et al. (2012) and an interprofessional training unit (Jacobsen, Fink, Marcussen et al., 2009) in Holstebro modeled on similar wards in Sweden. Evidence from its evaluations informed plans for IPE and collaborative practice designed to characterise its new 'super hospital'. Aalborg University Hospital and Kolding Hospital nearby designated interprofessional leads while Aarhus University with its neighbouring University College arranged joint day courses for medical and nursing students. Coverage in international journals and conferences informed plans for ITUs in Australia and the Netherlands. The introduction of interprofessional modules on the sociology of the professions for 1400 students with 50 teachers on four campuses of the VIA university college was a further indication of the development of IPE in one small country (Hulgaard, 2010). Launched in 2010, the Danish Society for Interprofessional Learning and Collaboration in Healthcare aimed to develop, assemble and visualize experiences of interprofessional education and practice in primary, secondary and tertiary health sectors involving patients and citizens. Emphases included patient and employee satisfaction. By January 2015 the Society had 99 individual and 13 organizational members (<http://ipls.dk/wordpress/>).

Finland

The first reported IPE programmes in Finland were in health administration at the universities of Tampere (Isokoski, 1988) and Kuopio (d'Ivernois, Cornillot & Zomer, 1988). They were followed by a number of programmes further north at the Oulu Polytechnic (now Oulu University of Applied Sciences) applying a model of holistic care throughout its curricula (Lamsa et al., 1994; Lamsa, 1999). Since 2003, the University of Applied Sciences has shared IPE programmes with the University of Oulu Faculty of Medicine where staff had already introduced an innovative post-experience programme in family systems education employing a bio-psycho-social model (Larivaara & Taanila, 2004).

Interprofessional collaboration evolved throughout the Oulu region led by the two universities. The model for a learning health centre, first created for dentistry, was adapted to include eight undergraduate programmes in medical and health education by introducing elements of common curricula combined with innovative and interactive learning methods. The model for a training ward was developed and applied in Oulu University Hospital before being introduced in other hospitals and several clinics. Innovative environments, such as that for interprofessional simulated learning, were developed with EU funding and interprofessional training in primary care piloted with medical and nursing students (Tervaskanto-Mäentausta et al., 2014). Training the trainers for IPE was built into the EU project. It complemented the interprofessional leadership which had been running for six years and the interprofessional and interdisciplinary master programme started in 2014.

The Oulu Social Welfare and Health Care Centre opened in 2015 to provide an interprofessional learning environment for all health and social care students. An Oulu Health Network was also established, working with welfare technology companies, to generate future innovations involving students and service users.

The Oulu model of IPE provided the starting point for developments in African countries - Kenya, Mozambique, Namibia and Zambia - where its faculty were engaged (see below). Projects included student and teacher exchange between countries and between professions as well as intensive and training in leadership and pedagogy.

Further south, 'academic health centres' were established in Pori in 2005 and in Turku in 2006 to implement plans for intensive health centre training for medical and nursing students arranged jointly by the Turku Faculty of Medicine (which had decentralised some of its education) and Universities of Applied Sciences in Satakunta and Turku (Isokoski, 1988). The programme included coordinated practice with facilitated learning. Building on that experience, the Vaasa municipality

invested in a purpose built interprofessional practice centre catering for students from a number of universities, including Turku, to improve training for primary care.

Lahti University of Applied Sciences reviewed its experience during a range of interprofessional cum intercultural initiatives including students and faculty from Germany and the republic of Ireland (Tarvainen, 2014). Similarly, the Jyväskylä University of Applied Sciences (JAMK) ran international cum interprofessional summer schools.

Interprofessional collaboration was written into national strategies for the organization and delivery of IPE and interprofessional networks established, for example for medical and health care simulation instructors. Social welfare and health care reforms emphasised collaboration in and between primary and secondary care regionally and locally whilst the Patient Safety Strategy included improving teamwork skills in its aims.

Norway

In 1972 a white paper on the structure of health and social care education in Norwegian university colleges proposed a common first year for allied health, nursing and social work students before their profession-specific studies. Faced with massive resistance from those professions, their education remained in 'silos'. As a compromise, an education council was established for each profession (combining occupational and physical therapist education) with a single secretariat. Curriculum development during the 1980s revealed that most of the content in those silos was identical. Each professional education system, by then in higher education, was striving to become more academic by focusing on the 'science' of nursing, physiotherapy etc.

Government reports during the 1980s and 1990s criticised the lack of collaboration in health and social care services, and of focus on collaborative skills, understanding of structures and foundations for teamwork in their education. By then, developments were being influenced by international trends, especially WHO recommendations.

In 1990 a combined council for health and social care education was established, but lasted only four years before it was overtaken in 1994 by the restructuring of higher education. Its main achievement was to formulate a common core curriculum with four elements agreed as a compromise between competing interests - science and research methods, ethics, communication and societal structures. As planned, the common core was to be multi- or interprofessional learning in order to foster collaborative practice. The university colleges would retain the freedom to choose teaching methods which each interpreted in the way it found most convenient. Some of the main institutions, like the university colleges of Bergen, Oslo, Tromsø, Trondheim and Østfold, put effort into creating multi- or interprofessional learning units. Except for Bergen and Østfold, most of them gave up. Some did not see the value of interprofessional learning. Others found combining students and curricula too difficult. Logistical problems may have been exacerbated by the geography of Norway with many small university colleges scattered around the country, sometimes only with nurse education and few possibilities for interprofessional learning.

Another white paper on welfare education (the term since then used by the Norwegian government to cover health and social care) followed in 2012, again underlining the need for interprofessional learning to acquire collaborative competences with recommendations that this take place during clerkships in practice. These proposals were part of the 'Coordination Reform' which required collaboration between specialist and general health services with more responsibility given to the municipalities.

Following the 2012 white paper, there was a sharper focus on interprofessional learning. A national planning group established by the Norwegian Association of Higher Education Institutions was asked to deliver a proposal on the common core of the welfare education to the government by June 2015. At the same time, mergers were underway between various universities and university colleges. New institutional structures promised to make organizing interprofessional learning more feasible. Some universities had already taken steps to establish interprofessional learning units across all their health and social care education programs (like Tromsø, where the university and college amalgamated in 2009) or by establishing a Centre for Interprofessional Learning (like Bergen), cooperating with municipalities and college educations. A network of six higher education institutions in western Norway had plans for interprofessional learning across professional and geographical boundaries, including an online learning unit.

Sweden

Developments in undergraduate IPE at Linköping University attracted most interest in Sweden and came to be regarded as a classic study worldwide. Capitalising upon the amalgamation of schools for medicine, nursing, occupational and physical therapy, biomedical laboratory scientists and social workers, Linköping introduced a common ten-week programme for all its undergraduate students at the start of their first year to cultivate collaboration. Common curricula employed problem-based learning methods (Areskog, 1988a, 1988b, 1992, 1994 and 1995; Davidson & Lucas, 1995). Over the years the IPE curricula have been developed into three-stages and remodeled recently to take into account the recommendations of the Lancet Commission (Frenk et al., 2010 by Dahlberg et al., 2014).

Other developments in Sweden were reported at: the University of Goteborg, which had postgraduate programmes in public health; Vanersborg University College, which had an undergraduate programme in European Health Sciences (Freden, 1997), and the Karolinska Institutet in Stockholm (Ponzer, Hylin, Kusoffsky et al., 2004).

Endorsement for IPE from the Swedish government and its agents was slower than in neighboring Denmark and Norway, but the Swedish Higher Education Authority took an increasing interest during its reviews of medical and health professions' programmes (www.uka.se).

Belgium

The Artevelde University College in Ghent was the pioneer in implementing IPE in Belgium, immediately following the WHO (1987) report. It started with interactive information sessions for final-year students from relevant study programmes exploring the competencies of different health care workers, later through workshops on the basis of clinical cases. Funded as an educational innovation project by the Flemish government in 2000, a learning trajectory was developed in which medical students from the University of Ghent also participated. The trajectory was competency-oriented and included collaborative and blended learning. Students work in interprofessional teams on clinical cases and thematic projects during several months, coached by team leaders and followed by an assessment based on behavioral criteria. Later, in 2006, the trajectory was implemented as a mandatory course unit for all health care students in Artevelde University College (see the description of the InterDis trajectory in Vyt, 2009). The concept inspired the Antwerp Association of University and University Colleges, where a common interactive course unit was implemented in all collaborating departments of health care and medicine (Tsakitzidis & Van Royen, 2008).

An international workshop on IPE was organized at Ghent University in 2008. Later, in 2012, the PXL University College in Hasselt developed a specific postgraduate programme on interprofessional care for the elderly. At Ghent University, teams of students from medicine, social pedagogy, sociology, and health promotion discuss interprofessional issues in health care, and collaborate in observing the characteristics of neighbourhoods and the composition of their population, collecting data about quality of life (De Maeseneer, 2013).

EIPEN relocated from London to Ghent when it became a membership network reliant on its own resources, after some years as an EU-funded project. A charter for IPE in Europe was presented at its 2011 Conference in Ghent and foundations laid for the official statutes signed at the 2013 Conference in Ljubljana. The charter is seen as an important document that can act as a mechanism to stimulate interprofessional education and collaborative practice throughout Europe (Vyt, 2015). Since 2015 EIPEN is a not-for-profit society according to Belgian law.

France

The Medical Faculty of the University Paris-Nord at Bobigny was a leading member of EMPE introducing a common core of studies in nursing, biology, health administration and clinical psychology for its first year undergraduates from 1984 onwards, followed by interprofessional masters courses (d'Ivernois, Comillot & Zomer, 1988). French interest in IPE seemed at that time to be confined to the one university and lapsed. A recent statement from the French-based World Health Professions Alliance in interprofessional collaborative practice inspires renewed optimism (www.whpa.org). Confirmation comes from Fournier, Frattini and Naiditch (2014) who evaluated professional dynamics in primary care teams with earmarked funds.

Germany

Interprofessional education and collaboration in Germany remained predominantly dependent on the initiatives of individuals or teams. Historically, there was a hierarchical divide between medicine and other health professions in both education and practice. Universities, in particular medical faculties, had not offered qualification for health professions other than medicine, dentistry and pharmacy. Interprofessional activity had, however, gained momentum in undergraduate and postgraduate studies, research and policy, and professional associations with plans for journals.

Since the 1990s non-medical undergraduate health professional education had shifted from vocational training to an academic education. The reforms introduced to the German higher education qualifications framework, as a result of the European Union Bologna Process (European Union, 1999), had accelerated the professionalising process for the non-medical health professions in Germany, e.g. nursing, midwifery and the therapies, and led to the establishment of academic degrees at the university level. These reforms opened possibilities for new educational initiatives and models enabling the introduction of IPE at the undergraduate level.

In Bochum, the Hochschule für Gesundheit is a state-funded university of applied sciences founded in 2010 and offering an undergraduate degree for five health professions (nursing, midwifery, speech therapy, physiotherapy and occupational therapy) integrating interprofessional learning each curriculum (<http://www.hs-gesundheit.de/en/theme/studies/>). An IPE project with the nearby medical faculty in Bochum was piloted.

At the medical faculty at the University of Heidelberg an interprofessional undergraduate degree was established in 2011. Students came from nine health professions (geriatric, general and paediatric nursing; physiotherapy; speech and language therapy; midwifery; orthoptics; medical technical laboratory assistants and medical technical radiography assistants). They fulfilled their initial vocational training requirements in a formal collaboration with the Academy for Health Professions in parallel completing a Bachelor of Science in Interprofessional Health Care (IPHC) (Mahler, Berger, Karstens et al., 2014). Medical students and IPHC-students at Heidelberg Medical Faculty learned together in seminars on topics such as team communication, patient safety, medical error and health care English courses with positive evaluations (Schultz, Berger, Suchy et al., 2013). Further quantitative and qualitative research explored undergraduate students' perceptions of IPE (Mahler, Karstens, Napiralla et al., 2013).

A continuing interprofessional education (CIPE) survey identified 49 institutions in Germany offering interprofessional seminars. Nineteen managers from these institutions participated in semi-structured interviews revealing factors such as missing incentives, hierarchy problems and limited quality assurance that impeded the implementation of CIPE (Altin, Tebest, Kautz-Freimuth et al., 2014). Progress in introducing higher qualification for the health professionals opened a new research perspective in health care. Rapid changes in traditional roles, task divisions in health care

and a new research based approach also led to an emphasis at the policy level on the need of interprofessional collaboration and education (German Council of Science and Humanities, 2012). A charitable foundation, the Robert Bosch Stiftung (www.bosch-stiftung.de) gave a strong lead in backing interprofessional initiatives. It funded eight Germany-wide IPE projects as part of a programme entitled “Operation Team” leading to cooperation between medical and other health professional students (<http://www.bosch-stiftung.de/content/language2/html/44080.asp>). A follow up programme addressed the need for CIPE projects for postgraduates. All these programmes included funds for evaluation. In addition, the Foundation funded conferences focusing on IPE bringing different health professionals together for network building and exchange. (<http://tagung.interprofessionelle-gesundheitsversorgung.de/>)

Another driving force for IPE was the German Association for Medical Education (www.gesellschaft-medizinische-ausbildung.org) mainly representing educators from medical faculties in the German speaking countries (including Austria and Switzerland), but more and more open to educators from other health professions (reflecting the shift to academic degrees). A working group, with members from a wide range of health professionals and all German speaking countries, was founded within the Association to promote IPE in undergraduate medical and health professional education. Its position statement recommended conceptual, curricular, didactic and organisational issues to promote implementation in undergraduate health professional education (Walkenhorst, Mahler & Aistleithner et al. 2015).

These developments paved the way for two new journals for a German speaking audience. The “International Journal of Health Professions” (<http://ijhp.info/joomla/>) published its first issue in December 2014 with open access in German and English with at least 50% of the manuscripts dealing with interdisciplinary or interprofessional topics. The other journal (in German) also started in 2014 addressing teaching in health professional education and aiming to improve interprofessional dialogue - “Pädagogik der Gesundheitsberufe – Die Zeitschrift für den interprofessionellen Dialog”. (<http://zeitschrift-gesundheitsberufe.info/>)

The Netherlands

In 2012 the European Forum for Primary Care (EFPC) with the Jan van Es Institute in the Netherlands published an IPE position paper in response to the need to formulate a clear vision on contemporary and future education of professionals. Their aim was to facilitate interprofessional collaboration in primary health care on a national, European and global scale (van Amsterdam & Bruijnzeels, 2012). Other IPE developments in the Netherlands included an interprofessional training unit in Utrecht developed from the Danish and Swedish models. The Radboud University Medical Center, the HAN University of Applied Sciences Arnhem and Nijmegen, the Zuyd University of Applied Sciences Heerlen and the Robuust, and Jan van Es Institute jointly hosted the 2015 EIPEN conference in Nijmegen (http://www.eipen.eu/conferences_4.html).

Poland

IPE in the Department of Hygiene and Dietetics at the Jagiellonian University in Krakow started in 2006 thanks to international collaboration between universities in the EIPEN project. The idea of IPE was quite new in Poland at that time. It was the EIPEN team that introduced Polish deans, teachers and students to a new dimension in teaching and learning. International conferences and workshops under the auspices of EIPEN convinced them that the challenge of introducing IPE in Poland was worth undertaking. That was why the Krakow Department organized a major national conference for the heads of all departments of hygiene and epidemiology in Poland to present the knowledge about IPE that they had received from their British partners and other European countries, and to share its experience, vision and expectations of IPE.

Since 2006, undergraduate students have been engaged in workshops organised by the Department in secondary schools focusing mainly on nutritional aspects and prevention of eating disorders common amongst young people. Medical students conduct examinations and general evaluations of health status, selecting laboratory tests performed by students from Medical Analytic Division. Nutrition students estimate the feeding patterns of examined children, assessed the frequency of incorrect nutritional behaviours, implemented individual dietetic models and increased the awareness of teachers and parents. Physical education students, in close collaboration with the medical students, estimate the amount and types of physical exercise needed to prevent overweight. Pedagogical students work with teachers and parents, and psychology students are given individual advice. Doctors, nurses, dieticians, biologists and pharmacists participating in the Department's postgraduate courses learn about and from one another as they exchange best experience about many medical and nutritional topics.

The Department hosted the first Europe-wide EIPEN conference and later organized workshops during the "Cohere Academy - Teaching for the Future" conference with partners from Belgium and Finland. It then convened a national conference concentrating on the prevention of diabetes, cardiovascular diseases and gastrointestinal tract diseases through the eyes of many specialists and including sociological aspects.

The University also introduced interfaculty studies in the humanities, mathematics, natural sciences, advanced materials and nanotechnology to provide students with versatile education and opportunities to shape their programmes of study. These were some of the many ways in which the Jagiellonian was implementing IPE within the Bologna Process towards establishing general principles of higher education throughout Europe.

Slovenia

IPE initiatives in Slovenia had so far come from 'below' led by academic and clinical teachers, and, in part, some professional associations. The main promoter of IPE had been the Faculty of Health Sciences at the University of Ljubljana where the first interprofessional online course was developed in collaboration with Umea University in Sweden with support from the Swedish Council of Higher Education in the years 2001/2002 (Pahor & Rasmussen, 2009).

The Faculty of Health Sciences at University of Ljubljana joined several Erasmus projects to develop IPE in Europe and has been a member of EIPEN since 2012. An important endorsement of the IPE development was given by the Nurse Association of Slovenia, which (together with the Slovenian Medical Association) supported a large, multi-method national research study about nurse-doctor collaboration. The findings from this study were incorporated in the further development of IPE (Pahor, 2008).

An elective inter-faculty course for students of health and social care has been offered by the Faculty of Health Sciences since 2012, accompanied by a specially written textbook on interprofessional collaboration including presentations of ten health and social care professions, their roles and competencies (Pahor, 2014). During the course, medical, midwifery, nursing, occupational therapy, physiotherapy, psychology, radiography, sanitary engineering and social work students participate in lectures, practice collaborative skills in small groups and work in teams with patients to identify their problems and plan joint activities.

The students come to know the areas of work for different health professions within the Slovenian health care system and their specific competences. They learn also about different barriers to interprofessional collaboration, like the stereotyping of health professions, and their relation to the

effectiveness of work. Students gain knowledge about the meaning, characteristics and effects of interprofessional collaboration. They understand how different approaches are complementary as they become aware of the limitations of a single approach and the synergic effects of collaboration (Pahor, Zakšek & Vettorazzi, 2013).

There is also a student led initiative to learn about interprofessional collaboration in relation to different health problems. Medical, nursing, physiotherapy and pharmacy students jointly developed a three-day seminar called the *Health Care Team* introduced in 1998 held each year since then focusing on a different health topic, e.g. nephrology, Parkinson's disease and diabetes.

The seminars enable students from different health care professions to extend their knowledge of a certain health topic as well as to develop skills of interprofessional teamwork. They follow up-to-date clinical practice guidelines and promote collaborative practice among healthcare professionals in solving actual clinical cases, provide students with opportunities to get to know how work is organised at clinics and to practice their communication skills. The first part of each seminar is dedicated to the safety of patients and to communication in health care. The second part consists of lectures on the chosen topic provided by experts from different professions. The third part is teamwork in an actual clinical setting at the University Medical Centre in Ljubljana.

Up to the time of writing, no systematic support for IPE had come from the government, either Ministry of Health or Ministry of Education or their agencies. A strong barrier to IPE in Slovenia is associated with the hierarchical organisation of health care with medical doctors as the central providers, responsible also for the work of other professionals. The education for different health professionals has started to develop common grounds by becoming more theory based and patient centred. The longitudinal study of students who participated in IPE at the Faculty of Health Sciences at Ljubljana University will contribute evidence about changes that IPE can make and will inform the further planning of its development (Kavcic & Ferfila, 2013).

Spain

The School of Biomedical Sciences in the Universidad Europea de Madrid is pioneering prequalifying IPE, networking with other institutions in Spain and reaching out to include Spanish and Portuguese speaking countries in South America (see below). Concurrently, the University is forging interprofessional links worldwide with fellow institutions among the US-led Laureate International Universities.

Switzerland

The amended Medical Professions Act (MedPA) in Switzerland and the forthcoming Health Professions Act (HPA) emphasise the importance of an interprofessional approach to training. The MedPA stated that undergraduate and postgraduate training must equip future doctors with the skills and competencies needed to collaborate with members of other professions and to communicate effectively in view of the healthcare objectives to be achieved. Indeed, some of the "general objectives" contained in the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training (<http://sdo.smifk.ch/>) took these requirements into account. Moreover, the HPA defined generic competencies similar to the competencies defined for human medicine, which makes coordination easier, but their application was still not universal and they have not been systematically assessed.

In practice, many healthcare teams were already operating in an interprofessional way, particularly in hospital settings. However, in outpatient care this collaboration had tended historically to be organised in a more empirical way via a skill-sharing method rather than as a true interprofessional approach. In all cases, there was a lack of structured education and training in that field. In response,

the Swiss Association of Family Practitioners created a platform (www.interprofessionalitaet.ch) with other medical and healthcare organisations to coordinate and develop studies and projects in the field of interprofessional collaboration.

At the educational level, the interprofessional concept designed in Lausanne by the University of Applied Sciences of Western Switzerland (HES-SO), the Faculty of Biology and Medicine and the University Central Hospital (CHUV), and the project set up in Geneva between the University of applied sciences, the University Medical Centre (CMU) and the Faculty of Medicine, were innovative and promising both in terms of their scope and the intensive interprofessional work which prepared for the introduction of these programmes.

Most universities of applied sciences and vocational colleges had already launched in-house IPE programmes for the healthcare professions (mainly for nurses, physiotherapists, midwives, occupational therapists and dieticians). Unfortunately, involving medical faculties and enabling medical students to take part in this form of teaching appeared to be difficult.

Since 2011 major efforts have been made at national level to foster the development of IPE and collaboration. The Dialogue for national health policy mandated the Platform for the future of the medical postgraduate education (<http://www.bag.admin.ch/themen/berufe/11724/index.html>) to prepare a report on the introduction of IPE in the medical faculties, in coordination with the universities of applied sciences and the vocational colleges. This report (<http://www.bag.admin.ch/themen/berufe/11724/14204/?lang=de>) presented six care models requiring interprofessional collaboration, allowing medical and healthcare students to address, understand and carry out the typical elements of interprofessional work:

- IPC within a primary care structure for adults or children;
- IPC within an acute care team or emergency situation;
- 'Sequential' IPC meeting outpatient after-care needs;
- IPC within a primary care structure for elderly chronic multi-morbid patients;
- IPC in a regional network for patients receiving palliative care;
- Preventive IPC within a primary care structure or a medico-social establishment.

The concept also included a didactic toolbox allowing gradually more complex IPE modules to be developed adopting an early-to-late approach. This toolbox should give educational establishments enough freedom to design IPC modules adapted to the needs and resources of their region, and to create IPE modules in collaboration between faculties of medicine, universities of applied sciences and colleges of advanced vocational education for healthcare professions. The competency based and outcome oriented teaching, using similar CanMEDS roles in both medical and healthcare education (<http://www.royalcollege.ca/portal/page/portal/rc/canmeds>) makes designing common curricula easier.

During the same time, the Swiss Academy of Medical Sciences (SAMS) had developed a charter for the interprofessional collaboration between health and medical professionals to optimize the healthcare of patients, assure future healthcare on qualitative high standards and support the professional activities of healthcare workers. The charter issued in 2014 defined nine principles that should be empowered and developed by the professional organizations, the healthcare institutions and educational institutions (www.samw.ch/dms/de/Publikationen/Empfehlungen/d_Charta.pdf). The Academy planned to follow, assess and support every initiative made in this direction and report regularly on progress.

All these efforts have been made in collaboration with the professional associations, the institutions for medical and healthcare education and most of the national bodies involved in planning,

designing and assessing healthcare activities. Moreover, a proposal for a national IPC/IPE concept, presented during a national conference in December 2014, became a springboard for broader reflection on future evolution of healthcare practices.

Promising initiatives emerged from different sources in recent years, following the impulse and the mainstream of the action started by the Federal Office of Public Health and the SAMS. These may well create opportunity to debate and develop the professional profiles and the generic skills needed by the future health professionals that the educational institutions (undergraduate education) and the professional associations (postgraduate education) will have to transform into competencies, outcomes and learning objectives to be included in their programs.

The United Kingdom

Team-based interprofessional developments were first reported in primary and community care in the UK during the 1960s and 1970s. Most were brief and short-lived. Few were recorded. Reports of national conferences convened jointly by professional associations and regulatory bodies did, however, capture the essence of these pioneering developments (England, 1979; Loxley, 1997; Thwaites, 1993) complemented by publications from the Royal College of General Practitioners (e.g. Gregson, Cartlidge & Bond, 1991). Following sabbatical time in the UK, Baldwin (1982) compared teamwork in the UK and the US during one of the latter's teamwork conferences, citing UK sources as far back as the Dawson Report (1920) and foreshadowing a critique of UK teamwork by Reedy, Barton and Gregson (1983) presented during the same conference series in the following year (Reedy, 1980).

Credit for translating local initiatives in the UK into a nation-wide movement belonged to the Health Education Authority which engaged representatives of primary care teams in a rolling programme of workshops designed to implement health promotion strategies (Spratley 1990a&b). Meanwhile, a succession of high profile reports from inquiries into cases of abuse prompted 'joint training' in child protection.

IPE was taking root in universities. Exeter led the way when, in 1973, it launched continuing education programmes shared between health and social care professions complemented in 1986 by the first joint UK masters course (Pereira Gray et al., 1993) to be followed by other universities (Leathard, 1992; Storrie, 1992). Meanwhile, undergraduate initiatives were attracting passing mention (Mortimer, 1979). The first to be more fully reported was at Salford, where educators drew on experience from Adelaide (Australia) and Linköping (Sweden) to develop problem based learning (PBL) as a means to cultivate collaboration between professions (Davidson & Lucas, 1995).

The UK government of the day put its faith in the virtues of the market, which seemed at first to undermine much of the hard work to strengthen collaboration. It continued, however, to espouse collaboration to implement health and social care reforms, backed by calls for 'shared learning' without apparent sense of contradiction (Barr, 1994; Leathard, 1994; Loxley, 1997; Mackay et al. 1995). Commitment to collaboration was renewed and reinforced following the election of the Labour Government in 1997. Although competitive undercurrents remained, the emphasis at that time was on integration, partnership and joined up thinking from grassroots practice through to the corridors of power. Collaboration was to be between organisations, and with patients, carers and communities, as much as between practising professionals.

No longer on the margins, IPE in the UK was built into the mainstream of professional education across health and social care, to be managed in partnership between employers and universities. No longer mostly post-qualifying, elements of 'common learning' were required in all undergraduate programmes for all the health and social care professions. Earlier models of IPE were rendered less than adequate as, in the eyes of government, IPE became less a vehicle through which to improve understanding between professions and more an instrument to effect change (Secretary of State for Health, 1997).

CAIPE, which had been founded following the first flush of UK interprofessional developments, was now caught in a more competitive and less sympathetic environment, but held fast to the convictions of its founders about the efficacy of IPE in improving teamwork and thereby quality of care. Other central bodies also supported developments in IPE as it moved into the mainstream of higher and professional education, notably the three Learning and Teaching Support Networks for the health and social care professions (www.triple-itsn.kd.ac.uk) later included in the Higher Education Authority.

The first of three surveys by CAIPE located 695 examples of IPE in England, Scotland and Wales. Most examples were short and work-based continuing professional development (Shakespeare et al., 1989 summarised by Horder, 1995). The second survey, covering the whole of the UK, identified 455 initiatives, but based upon a much lower response rate that belied the increasing prevalence of IPE in the intervening years (Barr & Waterton, 1996). The most recent survey, focusing on pre-qualifying studies, was part of an independent review of IPE developments between 1997 and 2013 (Barr, Helme & D'Avray, 2011 & 2014). Findings crosschecked against other sources indicated that at least six out of every ten UK universities with qualifying courses in health and social care included IPE. Recommendations to professional and interprofessional education commissioners, regulators and providers addressed weaknesses in the organisation and delivery of IPE in need of remedy.

North America

The first IPE initiatives in Canada and the US were reported at much the same time in the 1960s with exchanges made between their leading pioneers. Organizational links between interprofessional developments in Canada and the US were formalised as recently as 2007 when the first biennial Collaborating Across Borders (CAB) conference was convened at the University of Minnesota to promote dialogue and exchange between the two countries. CAB conferences would thereafter alternate with the biennial international *All Together Better Health* (ATBH) conferences, the second of which had been held at the University of British Columbia in Vancouver in 2004. The Canadian Interprofessional Health Collaborative (CIHC) was established in 2006 and the American Interprofessional Health Collaborative (AIHC) in 2009. The two organizations developed close links, co-sponsoring the CAB conferences alternating between the two countries.

Canada

The first reported IPE initiative in Canada was in the mid 1960s at the University of British Columbia (UBC) driven by the belief that health and social care professions should be educated by the same teachers in the same classrooms. Only then would the professions be welded together into a true health team in which each contributor respected the others (McCreary, 1964). Szaz, who was appointed to implement McCreary's ideas, convened a cross-faculty group to compare members' understanding of interprofessional education and the health care team before trying one way and then another - seminars, field trips, clinical experiences and interviews - to involve the professions in combination (Szaz, 1969). Those activities seemed promising at the time. However, they ran into serious problems by the early 1970s resulting from changes in location and regulation for a number of the professional courses compounded by a lack of University support for the concepts developed by McCreary and Szaz. It was 30 years before UBC found itself again at the forefront of IPE in Canada when Gilbert, having made the case for IPE in his evidence to the Romanow Commission (2002) reviewing Canadian health care, won support to establish the College of Health Disciplines within the University structure as the vehicle to promote diverse interprofessional initiatives (Gilbert, 2014).

IPE took hold throughout Canada in response to Romanow's call for new models of training to implement new models of care. *Health Canada*, a department of the Canadian Federal Government, launched the *Inter-professional Education for Collaborative Patient Centred Practice* (IECPCCP) initiative to:

- promote and demonstrate the benefits of interprofessional education for collaborative practice;
- increase the number of health professionals trained for patient-centred interprofessional team practice at the level of entry to practice, graduate education and continuing education;
- stimulate networking and sharing of best educational practices for collaborative patient-centred practice.

Research was commissioned and background papers published in a special issue of the *Journal of Interprofessional Care*, including an overarching framework (D'Amour & Oandasan, 2005). *Health Canada* assigned \$22m over five years for developments in IPE and patient-centred primary care to be disbursed across the provinces and territories (Herbert, 2005). Universities nationwide presented submissions to *Health Canada* which made awards, taking into account advice from a panel of experienced teachers from the relevant professions. Evaluation was *sine qua non*, accounting later for a stream of end of project papers published in the *Journal of Interprofessional Care* and other outlets.

Health Canada also instigated the 'Contribution Agreement' held by UBC, funded the Canadian Interprofessional Health Collaborative (CIHC) (www.cihc.ca) from 2006-2012 and helped UBC to establish the National Health Sciences Students' Association (NaHSSA) (www.cihc.ca/nahssa). CIHC did much to facilitate openness, exchange and mutual support between developments in Canada and with the US, co-launching the CAB conferences and hosting them every fourth year. The International Association for Interprofessional Education and Collaborative Practice (InterEd) (discussed below) was incorporated in British Columbia. Its core members were central to the WHO work group of which Gilbert was co-chair (WHO, 2010). At the end of *Health Canada* funding, the CIHC was established as a not-for-profit federal organization with its national home at UBC.

Landmark developments followed, including the formulation of national interprofessional core competencies (Canadian Interprofessional Health Collaborative, 2010) and the Accreditation of Interprofessional Health Education (AIPHE) initiative (www.aiphe.ca). Funded by *Health Canada*, AIPHE comprised eight accrediting organizations responsible for pre-licensure education: the Accreditation Council of Canadian Physiotherapy Academic Programs; the Canadian Association of Occupational Therapists; the Canadian Council for Accreditation of Pharmacy Programs; the Canadian Association of Schools of Nursing; the Canadian Association of Social Work Education; the

College of Family Physicians of Canada; the Committee on Accreditation of Canadian Medical Schools; and the Royal College of Physicians and Surgeons of Canada.

Following extensive consultation, they formulated core principles covering language, context, criteria and evidence to be enshrined in the Interprofessional Health Education Accreditation Standards Guide (www.aihpe.ca) for each organization to implement. Neither prescriptive nor exhaustive, the guide suggests how the accreditation of IPE can be made more consistent in the context of health professions' education. AIPHE facilitates collaboration between member organizations to ensure a common approach to these IPE accreditation standards and to share lessons learned along the way. These and other developments in Canada have been reviewed by Gilbert in their historical (Gilbert, 2008) and international context (Gilbert 2010).

The United States

Interprofessional practice in the US was conceived as an antidote to specialization, professionalization and hospital-based care dating back to the turn of the 20th century; trends that prompted Richard Cabot at the Massachusetts General Hospital to implement ideas that he had first discussed in 1903 to form teams consisting of the physician, educator and new role of social worker in order to reconnect with patients and families in community settings (Schmitt, Baldwin & Reeves, 2011).

The Rockefeller Foundation Task Force on Higher Education called for changes in professional education to obviate “the stifling effects of rigid curricula that inhibited any movement towards interactive or creative endeavors” (Newman, 1971). The Carnegie Commission proposed a lessening of emphasis on professional boundaries, a holistic approach and building bridges to combat inherent parochialism of professional education (library.columbia.edu/indiv/rbml/units/carnegie/cche.html). The Institute of Medicine (1972), in the first of many related reports, addressed education for the health team.

Emphasis on educational activities in primary care teamwork peaked in the 1960s and 1970s (Beckard, 1974; Fry et al., 1974), leading in 1976 to the first of many annual, nationwide Interdisciplinary Health Team Conferences (Baldwin & Rowley, 1976). Each included teachers and trainers who employed IPE to promote teamwork in universities as well as hospitals and community settings. The conferences became influential bringing developments together nationally and later internationally.

Pioneering interprofessional programmes reported by Baldwin (1996) in North American universities included British Columbia, Nevada, Hawaii and Sherbrooke. During the 1970s, six medical schools – Nevada, Michigan State, North Carolina, Washington, Utah and California at San Francisco - devised a common model for team training. Developments differed in emphasis. Some like British Columbia and Minnesota had a more academic focus; others like Miami, Colorado and Indiana a more clinical focus; yet others, like Kentucky, had a community focus, whereas Nevada and Georgia sought to strike a balance. These university-based initiatives were complemented by work-based initiatives. In 1974, with State of Ohio funding, The Ohio State University established the innovative and broad ranging Commission on Interprofessional Education and Practice, which survived subsequent years of neglect of the topic nationally (Harsh, Fewell, & Casto, 2000).

Many of the early developments enjoyed federal support, much of which had been withdrawn by 1980, although some continued from the Bureau of Health Professions of the Health Resources and Services Administration. In the late 1970's and early 1980's support for “interdisciplinary training” was noteworthy from the Veterans Administration (VA) in the context of interdisciplinary care teams, which generated a cadre of trainers for the care of the elderly consolidated in twelve VA facilities

nationally between 1979-1983 (Heinemann & Zeiss, 2002). Efforts by the VA to promote interprofessional practice have expanded since that time.

The most powerful moves towards collaborative education to date, thought Kuehn (1998), had come in the US during the 1990s with the rush to control the economics of both health care and health professions education occasioned by the advent of health maintenance organisations and managed care. In an influential series of reports in the 1990's, the Pew Health Professions' Commission addressed the educational transformation needed to keep pace with the changes underway in US healthcare. Prominent among their educational recommendations was a requirement that all health professionals have interdisciplinary competence.

Concerns about patient safety reached their peak when the Institute of Medicine (IOM) published *To Err is Human* (Kohn, Corrigan & Donaldson, 1999) exposing the extent of avoidable deaths in US health care, and calling for interdisciplinary team training programs. A resurgence of interest in IPE emerged as the importance of better communication and collaboration amongst clinicians to improve care quality and outcomes was emphasized in what came to be known as the IOM's "Quality Chasm" series of publications. As part of that series, an IOM report identified working in interdisciplinary teams as one of five core areas of learning for all health professions students (IOM, 2003).

The Institute for Healthcare Improvement (IHI), an independent not-for-profit organization, has championed safety and quality improvements in health care. It has created dynamic opportunities for health care professionals to learn from, collaborate with, and be inspired by expert faculty and colleagues throughout the world. Through its conferences, seminars, and audio and web-based programs IHI has inspired institutions to implement and evaluate new models of care and ensure the broadest adoption of best practices and effective innovations in the US and worldwide.

For Berwick, IHI's former CEO, improving the US health care system required the simultaneous pursuit of three aims: improving the patient experience of care (including quality and satisfaction); improving the health of populations; and reducing per capita costs of health care (Berwick, Nolan & Whittington, 2008). The triple aim (as it has come to be known) has been enshrined in US strategies for collaborative practice, and now for IPE, unequivocally linking interprofessional healthcare teams and teamwork to the quality and outcomes of care.

Initially, the IHI carried forward its interprofessional educational work for patient safety and quality through the Interdisciplinary Professional Education Collaborative (Headrick, Knapp, Gelman et al., 1996; Baker, Gelmon, Headrick et al., 1998). Emphasis in the US on interdisciplinary continuing quality improvement impacted in the UK (Wilcock & Headrick, 2000). The Institute's work continues through the IHI Open School, with an international network of chapters and free online courses (<http://www.ihl.org/education/ihlopenschool/Pages/default.aspx>).

To encourage attention to and training for patient safety, starting in acute care hospitals, the US military, in collaboration with the Agency for Health Care Research and Quality, developed the TeamSTEPPS program (<http://teamstepps.ahrq.gov/>). Eight national training centers prepare TeamSTEPPS master trainers (<http://www.teamsteppsportal.org/teamstepps-master-training-course#regional>).

In 2010-2011, the Interprofessional Education Collaborative (IPEC), comprised of six US educational associations of schools for the health professions, worked with an expert panel to draft, agree and disseminate core competencies for interprofessional collaborative practice to guide curricular development in all health professions schools (Interprofessional Education Collaborative Expert Panel, 2011). Preparation of that framework was inspired by a vision of interprofessional collaborative practice as key to safe, high quality, accessible, patient-centred care. Through a series of short-term Institutes, IPEC promotes interprofessional faculty development for interprofessional learning experiences to help prepare future health professionals.

The American Interprofessional Health Collaborative (AIHC) complements its Canadian counterpart. Its mission is to “transcend boundaries to transform learning, policies, practices, and scholarship toward an improved system of health and wellness for individual patients, communities, and populations”. It is co-host to the biannual Collaborating Across Borders conference with CIHC and hosts a popular Webinar series.

Philanthropic foundations have played and continue to play a major role in promoting IPE in the US. In the 1990's, The Pew Charitable Trusts published a series of reports strongly advocating interdisciplinary training for future health professionals (e.g., O'Neil, 1993). With a general concern for the health of the public, the Josiah Macy Jr. Foundation has focused heavily on improving health professions education to that end, including interprofessional education (Tudico & Thibault, 2012). The Hartford Foundation supported the Geriatric Interdisciplinary Team Training Program (GITT) (Siegler et al., 1998). The Robert Wood Johnson Foundation, which had long supported interprofessional developments, funded the Partnerships for Quality Education initiative consisting of four distinct Interprofessional programs in primary care, teamwork training, chronic illness management and CQI. (<http://content.healthaffairs.org/content/10/3/251.full.pdf>)

The W.K. Kellogg Foundation (www.wkcf.org) funded and established university-community partnerships “fostering cooperation between local communities and medical, nursing and public health educational programs” (Greenberg, 1991). It also supported the Community/Campus Partnerships for Health (CCPH) movement that gathered momentum in the US before extending into other countries to cultivate collaboration between universities and neighbourhoods to provide health services and develop practice-based community-oriented curricula (Seifer & Maurana, 1998; Foley & Feletti, 1993). CCPH adopted a community development model and involved as wide a range of academic disciplines and practice professions as possible in response to needs identified in consultation with local communities. These developments were closely linked with the service learning movement associated with the Health Professions Schools in Service to the Nation Program (HPSISNP), which examined the impact of such learning on students, faculty and communities (Gelmon et al, 1998).

A pressing need was to foster high quality research on teamwork in healthcare, not only in the US but also around the world (Goldman, Zwarenstein, Bhattacharyya, & Reeves, 2009; Thistlethwaite, 2012; Zwarenstein, Goldman, & Reeves, 2009; Institute of Medicine, 2015). In 2012, the United States Health Resources and Services Administration (HRSA) awarded several million dollars to the University of Minnesota over five years to develop the National Center for Interprofessional Practice and Education. The Josiah Macy Jr. Foundation, the Robert Wood Johnson Foundation and the Gordon and Betty Moore Foundation each made major financial gifts to the Center for its work.

Brandt (2014) emphasised the Center's role in linking IPE to the transformation of the US health care delivery system through its 'Nexus' model that stressed the urgency of realigning higher education and healthcare (<https://nexusipe.org/>), focusing on the triple aim. The Center links IPE and collaborative practice conceptually, operationally and interprofessionally in its model. Evidence of

co-occurrence between the three aims was, however, elusive as Brandt, May, King and Chioreso (2014) found in their review of the literature.

Brandt and Schmitt summarised how major debates and reforms in health care in the US impacted on the popularity of IPE and collaborative practice over the years (Brandt & Schmitt, 2011; Brandt, 2014). Re-examination of the US health care system had contributed to a new sense of urgency to reconsider team-based care and collaborative practice focusing heavily on the frequency and cost of adverse events resulting from medical errors, and the subsequent call for strategic quality improvement in the US acute care system. The Patient Protection and Affordable Care Act 2010 lent new urgency to access, cost and quality of health services, and has spurred the design of new delivery models, as well as greater emphasis on primary prevention, integration of mental health, and community-based health and care initiatives. No one profession could address the issues independently nor could these goals be accomplished without active engagement of patients, families, and communities as partners (Fulmer & Gaines, 2014).

South America

Having invested generously in community based professional education in the US, the W.K. Kellogg Foundation backed 23 projects comprising the WHO Unity for Health program in eleven developing countries in Latin America and the Caribbean to integrate the university, the health services and the community and foster interprofessional collaboration: Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, Mexico, Nicaragua, Peru, Uruguay and Venezuela. A total of 103 undergraduate courses were included although difficulties were encountered in including all the relevant health professions (Richards, 1993; UNI, 1999; Goble, 2003; Boelen, 2000). Instrumental though the program may have been in creating the climate for IPE later, it stopped short of doing so at the time.

Brazil

Based on the search in different databases and on the knowledge about some Brazilian experiences, IPE in the country is a theme that needs to be further explored. Some universities have an impressive history related to innovation in the educational process of health providers. However, they are not sufficiently close to the theoretical and methodological framework of IPE yet. With the beginning of the world debate, several institutions have been making efforts to strengthen the existing experiences, as they are a fertile environment for IPE.

Similarly, the national policies that guide the education of health providers have acknowledged, in recent years, the need to adopt IPE as a robust strategy, able to overcome the present, shattered logic of health work. PET-Saúde and Pró-Saúde, as well as the national curricular guidelines already highlight the relevance of efforts for the implementation of experiences based on IPE both at undergraduate and post-graduate level, as well as during the continuing education of health workers.

From the Brazilian perspective, IPE acquires strength when it shows that is clearly aligned with the principles of the Brazilian Unified Health System - SUS. Training professionals who are more capable to develop collaborative work is essential to make the present logic of work advance towards comprehensive care, equity in health actions and problem-solving, mainly because it brings the users of the services and their needs back to the centre of the health actions and policies. Thus, it is clear that the Brazilian background is fruitful for the IPE because the approach is able to retrieve important principles of the Brazilian sanitary reform movement, with major contributions in the process of strengthening and consolidation of the Brazilian health system and its foundational principles.

We focus accordingly on those interprofessional developments in Brazil where there was a robust theoretical framework for teamwork to strengthen healthcare networks including primary care. Understanding interdisciplinarity and multiprofessional work was the foundation for a new logic to think about, and to work in, the health field. Debate was restricted to practice rather than education. IPE attracted attention later as a means to trigger change processes in health professionals' education enabling them to work in a collaborative way in tune with the need to improve the quality of care within the Brazilian National Health System.

A search for relevant Brazilian papers published during ten years in one database (PubMed) found some where initiatives were described as multiprofessional or interdisciplinary, but lacking, with exceptions cited, confirmation that their theoretical and methodological foundations were interprofessional.

Peduzzi, Norman and Germani et al. (2013) reviewed initiatives in Brazil towards changing healthcare professionals' training. The Pan-American Health Organization (1960) had pointed to the need for changes in the standards of healthcare human resource training in the Americas in the 1960s. Its first agreement with Brazil in 1973 envisaged greater integration between the training system for healthcare professionals and the healthcare system to be used as a pedagogical resource, stimulus for interprofessional integration and means of developing teacher-care integration.

By the 1980s, the experiences that had accumulated, particularly in medical and nursing education, had given rise to a proposal for changes in training for healthcare professionals. The UNI program was sponsored in Brazil by the W.K. Kellogg Foundation and involved six projects, in the cities of Londrina, Marília, Botucatu, Brasília, Salvador and Natal. The program targeted population health problems, stimulation of interdisciplinary teaching and problem-based learning. It highlighted a critical-reflective educational process in order to stimulate democratization of knowledge through posing problems about real situations, with active participation from students. Thus, the debate around the pedagogical model for the curricula was redirected based on interdisciplinarity, the concept of multiprofessional work and the specific features of practices within each profession, in order to overcome fragmentation of knowledge; changes that came close to the concept of IPE.

Brazilian studies had stressed the importance of integration between disciplines within the scope of healthcare courses, through knowledge that is lived and experienced, as a possibility for training professionals who would be more committed and better prepared to meet the population's healthcare needs. The National Education Forum for Healthcare Professions was created in 2004 to change undergraduate healthcare courses in Brazil through discussions about multiprofessional and interprofessional education between the 14 healthcare professions by exchanging experience between the various undergraduate courses.

Our enquiries confirmed that there had been a good number of IPE initiatives running in Brazil since the 1970s, especially involving community health care workers. More recently, they included the following.

The IPE program in Porto Alegre started in 2009 in an inner city area where health and social problems abounded, including low incomes, poor housing, water and sanitation problems and drug abuse (WHO, 2013b). The program was part of a federal government initiative under the auspices of the Ministries of Health and Education to enhance the relationship between academia, the community, and primary health care services in the Family Health Program through tutorial learning in multidisciplinary groups. The care model was based on the integration of health knowledge across the university, to promote an open attitude towards developing competencies for working in multidisciplinary teams towards primary health care. Students and their preceptors developed activities in the health unit based on the concept of 'embrace' which encouraged openness when listening to patients' expressions of needs at every point of contact. Interdisciplinary actions included the use of a postural school through physiotherapy, in which patients could participate in

walking or other outdoor activities, the referral of family issues to the psychology department, and the inclusion of home services in the care provided. Incentives for educational institutions were put in place by the government to change the existing curricula and to ensure that students gained early exposure to interprofessional practice in accordance with the goal of integrating CP into the national health system. In addition, the programme stipulated that a research project be developed by all its members.

The “Family Health League” project in Ceará State integrated teaching for undergraduate students with health service and community care from the perspective of a communicative and participative management in the National Health System (Cuhna et al., 2012). Some of the challenges that this project was trying to answer were: the cultural gap between health care workers and the population attended; the shift from individual to collective collaboration; and overcoming authoritarian styles of management. One of the tools proposed was the development of pedagogic programs integrating local popular culture with technical health contents, through interprofessional and multiprofessional teams made up of students, professionals and lecturers with activities bringing together theory and practice. The professions involved were doctors, nurses, dentists, social workers, educators, nursing assistants, health agents and community leaders. The goal of the programme was to adapt health care to the social reality and local necessities of the population.

The postgraduate Multiprofessional Residence in Family Health Care had run at the Ceará School of Public Health (Escola de Saúde Pública do Ceará) since 2013, where students from six professions (medicine, nursing, dentistry, psychology, physiotherapy and social work) were organized into interprofessional teams under the supervision of a field mentor. The program lasted two years.

The Multiprofessional Residents Program started in 2004 in the Grupo Hospitalar Conceição in Rio Grande do Sul, being adopted later in other cities and states. As conceived, it is a two-year program where 210 residents from eleven health care professions undergo postgraduate training in an interprofessional environment in seven areas of expertise.

An Integrated Health Care Center opened in 2011 at Anhembi Morumbi University in Sao Paulo offering free interprofessional student group care to around 700 patients per day, together with home interprofessional care. At least eight health professions were involved. Interprofessional simulation activities were offered beforehand to all students on a voluntary basis. Approximately a thousand students went through one or more of these programmes every year.

Costa et al. (2014) reported emerging findings from a research on the adoption of IPE as a strategy to reform the health professional education in one State and one Federal university in the Northeast of Brazil. The State University of Rio Grande do Norte does not present any systematized experience allowing the students from different health professions to gather. The Federal University of Rio Grande do Norte provides a curricular component entitled Health and Society, aimed at all students from the health courses and developed in the primary health care centres in the neighbourhoods of Natal, the capital of the state. Costa (2014) also reports that both universities present experiences that may be used to strengthen the IPE approach, as both institutions have a long history of insertion in the national policies of reorientation of the professional education. It was shown in the research that students and teachers acknowledge the importance of improving the education of future health providers for the team work. However, in relation to the achievement of IPE and its principles, it is necessary to promote changes in several aspects: to train teachers to encourage and to increase the potential of IPE actions; to overcome several conceptual mistakes; and to adopt the IPE guiding principles with more clarity in the present and future actions adopted by the teaching institutions that were researched.

Since 2009 the Rio de Janeiro State University has integrated medical and multiprofessional residence programs at the Pedro Ernesto University Hospital (HUPE). The theoretical and practical program was organized in interprofessional activities, comprising gerontology content common to all courses and specific activities related to each course. For the interprofessional theoretical activities, the themes followed the same gerontological lines during the two-year training. They included activities to develop competencies like *YouHUPE* (a thematic debate by means of cinema), and *Telegero* (discussion of themes with teams from other universities by videoconference) (Pacheco & da Motta, 2014).

At the São Paulo Federal University - Baixada Santista undergraduate courses for nutrition, occupational therapy, physical education, physiotherapy, psychology, and social work students were based on an interprofessional curriculum designed to educate health professionals for interprofessional teamwork. Emphasis was put on comprehensive care for the patient, technical-scientific and human education of excellence in a specific area of work, and understanding research as a propeller for teaching and learning. A core aspect of this experience was the intentional composition of the groups, mixing students from the six different backgrounds where the main question was "What should a health provider know, no matter his/her professional specificity?" The undergraduate interprofessional experience stimulated the creation of both *lato* and *stricto sensu* post-graduation, as well as a focus on IPE. Following these principles, the Multiprofessional Residence Program was created, involving nursing, nutrition, occupational therapy, pharmacy, physiotherapy, psychology and social work, as well as the Masters in Health Sciences (Batista, 2012).

The Medical and Health Sciences School of Juiz de Fora adopted IPE to help integrate education for the health professions and improve the local healthcare system. The program involved dentistry, medicine, nursing, pharmacy and physiotherapy during the initial six months of their courses interweaving teaching, research and outreach; theoretical-practical articulation; interprofessional activities; and participation at the different levels in the local healthcare system (Aguilar-da-Silva et al., 2011).

In 2003 the Botucatu Medical School of the São Paulo State University (FMB/UNESP) implemented a course entitled 'University, Service, and Community Interaction' for medicine, nursing and nutrition. Teaching-learning was interprofessional based on the experience of the students beyond the school environment in primary health care centers and the Family Health Strategy of the Botucatu municipal public health network. This made it possible to improve the seeing, the listening, and the knowledge about the city, the neighbourhood and the territory (Cyrino et al., 2012).

The Medical School of Marília was historically important in overcoming the traditional model of university teaching by adopting an integrated curriculum for its medical and nursing courses; integration of subjects, courses, the university and the health services, and theory and practice using problem-based learning. The curricular framework contained Professional Practice Units (UPP) and Systematized Educational Units (UES). During the UPP, the students were immersed in the reality of the health services, stimulating a reflection of the necessary changes to improve the quality of care. The UES allowed the students to create the cognitive processes related to the problems experienced in the different learning scenarios (Silva, 2014; Aguilar-da-Silva, 2011).

Information received regarding IPE developments in other South American countries has so far been limited. García-Huidobro et al. (2013) reported an IPE course in Santiago, Chile where groups of final year medical, nursing, and psychology students formed four groups and conducted weekly home visits or behavioural health counselling sessions followed by reflection with their preceptors.

Interprofessional clinical community practice was reportedly widespread in the Argentinean Public Health System, especially involving medicine, nursing and physiotherapy. No specific IPE initiative

was brought to our attention, but the Universidad Nacional del Nordeste at Corrientes was organising a workshop in June 2015 for invited international interprofessional specialists to develop a University Health Interprofessional program to be started in 2016, taking advantage of the modern simulation facilities recently inaugurated.

Asia and the Pacific

Japan

Rising interest in IPE in Japan was attributed to growing concern about the quality of health professionals' practice resulting from rapid expansion in numbers without adequate quality assurance (Watanabe & Koizumi, 2010). Maintaining 'quality of life' had come to the fore in Japanese health care as life expectancy had extended. A shortage of medical doctors had resulted in disparities between regions in the promotion and maintenance of health care services. No one profession, it was clear, could meet the diverse demands from the growing numbers of older people for *iryō* (medical and health care) and *fukushi* (social care). Critical incidents brought matters to a head: medical errors in hospitals, reports of child abuse, and especially the suicide of a celebrity singer exhausted by providing long-term care for her mother.

Interprofessional collaboration had taken hold long before in preventive work, exemplified by the Sawauchi Village, where medical care for infants and older people had been made free. The villagers had challenged themselves to achieve a zero infant mortality rate. Nationwide developments had followed as a 'Comprehensive Regional Health and Social Care' initiative relocated services from hospital to community. Team-led medical/health care and social care networks were established in local communities and education networks at various levels in each region (Endoh, Magara & Nagai, 2012).

IPE initiatives in universities were incorporated into professional education as approved by the Japanese government, to be funded by it in a rolling programme. Saitama Prefectural University was the first to receive such funding and hosted the first international IPE conference in Japan in 2005 - a three day event attended by teachers from some 38 Japanese universities and including some 100 practitioners. It was followed by others, including presentations from CAIPE and UK universities complemented by exchange visits involving Japanese students and teachers to UK and Canadian universities. Chiba University was designated by government as the lead interprofessional research institution and Gunma University as a WHO interprofessional centre (Makino, Shinozaki, Hayashi et al., 2012)

Ten IPE initiatives formed the Japan Interprofessional Working and Education Network (JIPWEN) in 2008. This group cooperated with the WHO to formulate broadly applicable IPE models for each university adaptable to its academic and social setting. The Japan Association for Interprofessional Education (JAPE) was also launched in 2008 to provide a forum for exchange between university faculty and practising professionals focusing on diabetes mellitus, prevention of falls and locomotive syndrome, senile dementia, abuse of children and the elderly, and dealing with disasters (Takahashi & Kinoshita, 2015).

By 2008, approximately half the Japanese medical schools were reported to be implementing IPE. Two commissions on nursing studies called for a team approach to care from the service user perspective, an expanded social role for nursing, and the development of collaborative competencies to be incorporated into nursing curricula in newly established universities. IPE was being emphasised in courses for dieticians and made compulsory for students in twelve pharmacy universities, but only in a few universities did it include physiotherapy, occupational therapy and social work courses. Implementation of IPE was uneven between professions and between universities.

The Consortium for Interprofessional Education comprised five institutions – Niigata, Saitama, Sapporo and Tokyo Metropolitan universities with the Japan College of Social Work. It won central government funding for the co-development of 30 IPE modules covering child abuse, the ageing society and models of interprofessional teamwork. Each module (based on virtual patients) built in issues for interprofessional teams to problem-solve calling on the specialist skills of their members. The CAIPE principles (Barr & Low, 2012) were taken as the starting point from which to plan introductory and facilitation courses for Japanese teachers.

Japan's entry into the international interprofessional family was endorsed in 2012 when the Kobe Gakuin University hosted the sixth 'All Together Better Health VI' conference. Other Pacific countries amongst delegates from around the world (with numbers in brackets) were: Bangladesh (1), Brunei (1), Indonesia (7), Malaysia (2), Singapore, (3) and the Philippines (5).

IPE developments in Japan encouraged those in other Asian and Pacific countries. In collaboration with the WHO, Lee, Celletti, Makino et al. (2012) surveyed the attitudes of deans of medical school in Malaysia, the Philippines, South Korea and Japan towards IPE recorded on scales adopted from Canada (Curran, Deacon & Fleet, 2007). The response rate was low. Thirty five deans (22%) replied from the 146 school in the four countries. Fourteen of their schools had nursing programmes and 13 nursing and other health related programmes. IPE was reported in one programme each in Malaysia and the Philippines and four in Japan. Barriers encountered in introducing IPE were said to be rigid curricula, lack of financial resources, problems with scheduling and lack of administrative support.

In Thailand, the School of Nursing at Chiang Mai University hosted an international conference in September 2012 to raise awareness of the importance of interprofessional partnerships and to facilitate building multidisciplinary coalitions to create synergies for overcoming current and future issues in global health (without explicit reference to IPE). More than 700 participants attended from around the world. (<http://www.nurse.cmu.ac.th/inter2012/>)

Students in the Philippines held an interprofessional conference in 2011. Further developments have yet to be reported. Acknowledging that there was limited IPE experience in the Philippines, Opina-Tan (2013) reported student participation in interprofessional teams providing health services to families with complex health needs in the community. An IPE initiative entitled 'Family Case Management' was implemented by the University of the Philippines Community Health and Development Program in partnership with the Municipality of San Juan, Batangas. Paterno, Louricha and Opina-Tan (2014) described how this 'student community immersion program' was developed from the community-campus model.

The Indonesian Health Professions' Student Network had convened its first 'summit' in Jakarta in 2010 where students from seven professions voiced their aspirations for their education calling for participation in its governance and for IPE. In their own words, they were no longer the object of their education but agents for its change (Health Professional Education Quality Project, 2011 & 2012). After qualifying, the students reconstituted the Network as the "Indonesian Young Health Professionals Society" through which to promote interprofessional issues and run interprofessional courses for junior health professionals.

Prequalifying IPE has been required by government in Indonesia since 2011 to improve the quality of healthcare in accordance with competency based outcomes set by professional bodies. For example, the Universitas Muhammadiyah Yogyakarta includes dental, medical, nursing and pharmacy students in case based scenarios and week-long clinical placements focusing on selected medical conditions (Kusumawati & Orbayinah, 2015). Interested individuals at the Faculty of Medicine at the

Universitas Indonesia, funded by ASEAN³, were exploring a model of IPE for Asian countries taking into account different cultures, values and social norms.

The Institute of Medical and Health Sciences Education at the University of Hong Kong was developing interprofessional team based learning for health professional students to include twelve programmes from 2016 (Lam et al., 2013).

The National University of Singapore designed 'a platform' to sustain IPE within an Asian context. Existing curricular components were examined and revised to ensure that teaching reflected perspectives from all involved professions. Core optional interprofessional activities involved students from two or more academic units and related to one or more of the following six IPE competencies to ensure that students were 'collaborative practice-ready': teamwork; roles and responsibilities; communication, learning/reflection; patient focus; and ethics (Jacobs et al., 2013).

In India, Manipal University, in collaboration with the Foundation for Advancement of Interprofessional Medical Education and Research, has established the International Institute for Leadership in Interprofessional Education. (mu-faimerfri.org) Bansal and colleagues have described how IPE developed in the Maharashtra University of Health Sciences through its 300 affiliated colleges led by its Department of Medical Education (Bansal & Jamkar, 2014; Bansal et al., 2015). The University was one of thirteen in India established to spearhead improvement and reform in health professions' education.

The National University of Malaysia is striving to promote IPE through conferences and workshops (<http://www.iium.edu.my/kulliyah-pharmacy/events/inter-professional-education-ipe-moving-interprofessional-collaborative-pr>). The International Medical University hosted the International Medical Education Conference in Kuala Lumpur in 2014 taking "optimising interprofessional education for healthcare" as the theme. (www.imu.edu.my/imec)

Australasia

Australia

Piggott (1975) reported one of the first IPE programmes in Australia during the 1970s at the Royal Prince Alfred Hospital in Sydney where students formed multiprofessional teams to plan the health care management of members of the community. Plans were being made at that time for IPE initiatives in ten medical schools. Only one got off the ground. That was at the University of Adelaide in collaboration with the South Australia Institute of Technology where federal funding made it possible to mount joint programmes for 600 undergraduates on community health and practice. The funding was withdrawn towards the end of the 1980s. The programme was nevertheless continued and extended to include other institutions bringing in students from a wider range of professions. Shared undergraduate studies ceased in 1992 for lack of resources although shared postgraduate studies continued as did practice workshops (Davidson & Lucas, 1995; Graham & Wealthall, 1999; Piggot, 1980; Tope 1996; Vanclay, 1995).

³ The Association of Southeast Asian Nations established in 1967 to promote economic and cultural development in its member states: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam

Similar developments were reportedly getting underway at the University of Newcastle during the early nineties where the focus became the development of flexible, needs oriented, 'knowledge-able' health and social care professionals (McMillan 2003). In addition, a WHO Regional Training Centre in the College of Medicine at the University of New South Wales had been running advanced and postgraduate courses for some years for a range of health personnel from Asian and Pacific countries (Vanclay, 1995).

Graham and Wealthall (1999) reported that a number of other Australian universities, including Curtin, La Trobe, South Australia, Sydney and Queensland, had each adopted some form of common curricula. They nevertheless observed that "the exigencies of university life" in Australia inhibited the flexibility required to foster such developments although stakes were less high for continuing professional development. Plans were afoot to promote interprofessional learning experiences for all professional groups throughout Australia.

Overseas links have been strengthened, notably between Australia and the UK. The pre-qualifying model for IPE at Curtin University was an example adapted in context from Canadian and UK outcome frameworks (Brewer & Jones, 2013).

The focus in Australia shifted around 2000 to rural care. The Rural Interprofessional Education (RIPE) project was the most sustained (McNair, et al., 2001, 2005; Stone, 2006). Reports of IPE developments in metropolitan areas became less frequent. Nisbet et al. (2008) described one in an acute care hospital in Sydney curriculum, but organisational barriers prevented its expansion.

Successive studies were published from 2009 (L-Tipp, 2009) reviewing interprofessional developments in Australia in their policy and practice context. Dunston (2012) summarised three focusing on the development and delivery of IPE in pre-qualifying education. The first of these studies, *The Interprofessional Education National Audit* (Interprofessional Curriculum Consortium, Australia, 2013) (<http://www.ipehealth.edu.au>) surveyed all Australian universities during 2011/12 providing health professional education consulting key stakeholders from higher education, health, health consumers, the professions and government. Eighty-two discrete units of IPE were analysed. Findings confirmed that the development of IPE in Australia had been localised, opportunistic, adaptive and creative on the margins of existing curricula. Resources invested had been minimal and developments, as a consequence, frequently unsustainable. There was, however, reason to think that that was changing. While many questions remained, there was strong support in higher education, health and government.

The second study, (Nicol, 2012) (<http://www.ipehealth.edu.au>), was an in-depth ethnographic inquiry in to IPE curricula development in four Western Australian universities. The third study, *Curriculum Renewal for Interprofessional Education in Health* (The interprofessional Curriculum Consortium, Australia, 2014) (<http://www.ipehealth.edu.au>) focused on what was identified as necessary from the above studies for IPE to progress as a coherent and well-coordinated national project. This final report provided a wide range of conceptual and practical resources for shaping, delivering, assessing and evaluating IPE. Of particular importance was the development of a 'four dimensional curriculum development framework' (Lee et al., 2013). The direction and national focus of this work was complemented by other national projects focused on the development of health professional education in general, and IPE/IPP in particular. Two important projects were Learning and Teaching for Academic Standards (O'Keefe et al., 2011) and the Harmonisation Project (O'Keefe et al., 2014). Funding and considerable support for the five projects noted above was provided by the national peak body for higher education development, the Office for Learning and Teaching, and the Council of Australian Government's peak health workforce development body, Health Workforce Australia. As a result of the collaboration between the various project teams, IPE/IPP became an explicit focus of government policy.

Following the completion of the above projects, further funding was obtained for the development of a 'national IPE work plan' to maintain and expand the momentum of the above projects (Dunston et al., 2015). The work was progressed during two forums in 2014 – a national forum in Sydney and a state-based forum in Western Australia.

The proposed national work plan will be ready for national (and international) distribution and discussion late in 2015. The plan proposes a shift from a project-based to a system-wide approach to further IPE development in Australia. This work plan requires the specification of development activities,, responsibilities, time-frames, deliverables and the conditions required to bring individuals from different professions, from government, from health providers and elsewhere together to discuss and determine how IPE and collaborative practice in Australia could be evolved and improved. The aim is to develop a national approach to aligning:

- National leadership with structures and processes;
- Curriculum and standards development;
- Knowledge development, management, utilisation and dissemination;
- Capacity structured to provide maximum support.

The work plan proposes a National Leadership Council that would promote the principles, values, development and visibility of IPE at the most senior level in higher education, health service provision, the professions, educational standards, health professions' regulation, safety and quality, and continuing professional development.

The work plan also proposes the establishment of two working groups. Firstly, to:

- Articulate and agree on relevant and meaningful IPP competencies across all areas of health professional practice;
- Articulate and agree on the scope and degree of interprofessional practice attainment as a result of participation in IPE;
- Develop new conceptual and practice understandings about interprofessional pedagogy, educational methods and the educational and organisational conditions that will support the achievement of IPP competencies and outcomes;
- Develop new conceptual and practice understandings about the assessment of student learning and competencies as part of their participation in IPE activities;
- Develop new conceptual and practice understandings about the evaluation of IPE activity.

The second working group would address national and global issues critical to the ability to inform and improve education and health practice from research with particular reference to patient satisfaction and to health, student learning, team performance, sustainability and staff retention outcomes.

It is suggested that the Australasian Interprofessional Practice and Education Network (AIPPEN) has a key role in the national development process and infrastructure, organising and disseminating information and knowledge. AIPPEN would exist as an interface and conduit for knowledge dissemination at a global level.

It had been conceived to share information and experience within and between Australia and New Zealand (Nisbet, Thistlethwaite & Moran et al., 2007) (<http://www.aippen.net>). Around the same time, the Australian and New Zealand Association for Health Professional Education (ANZAHPE) (www.anzahpe.org/) widened its membership beyond medicine to include all health professions in both countries with *Focus on Health Professional Education* as its peer reviewed journal. Formal

discussions were envisaged with ANZAPHE regarding a possible leadership role in the further development of IPE and collaborative practice in Australia and in New Zealand to which we now turn.

New Zealand

IPE has been developing within the university sector in New Zealand for some time. What has been required is a national coordinated group to provide the opportunity for sharing of expertise and resources. The National Centre for Interprofessional Education and Collaborative Practice (NCIPECP) was established in the Faculty of Health and Environmental Sciences at the Auckland University of Technology (AUT) in 2009 as a vehicle for developing education, practice and research including the Maori Pathways. The common semester of study for all health professionals at AUT has laid the foundation for interprofessional learning. The Centre has brought collaborative practice to the forefront for students, practicing health professionals and the community. It provides national forums and networking opportunities which require further development. It is committed to advancing IPE and collaborative practice to improve the quality of healthcare. This development is moving forward to more effectively include a national voice.

AUT also enabled a number of other practice-based initiatives to develop the skills needed by healthcare students and practitioners to provide care in an interprofessional collaborative manner. These initiatives included facilitating workshops for district hospital staff, developing an annual interprofessional healthcare team challenge for students and clinicians, and managing a campus based student-led interprofessional health clinic. (<http://www.aih.aut.ac.nz>) Staff undertook related research ranging from an exploration of the theoretical underpinning of interprofessional practice in the clinical setting (O'Brien, Swann & Heap, 2015) to the value placed on IPE and collaborative practice by practitioners, educators, students and patients in a clinical setting. The critical factor of team development and leadership has been further developed and published in collaborative international books (Forman, Jones and Thistlethwaite, 2014 & 2015).

The Division of Health Sciences within the University of Otago fostered IPE in a strategic framework for ten health professions' degree programmes guided by a governance group. Two or more professions from separate pre-registration health programmes interactively shared learning and clinical experience in areas such as Haurora Māori, managing long term conditions, quality and safety, and physical activity for health. Longer established IPE post-graduate programmes on the Christchurch, Dunedin and Wellington campuses had enrolled practitioners from primary, secondary, and tertiary health care.

A long standing shortage of suitably trained and experienced health professionals wanting to work in many of New Zealand's rural communities prompted a strategy to help redress that shortage by developing rural training hubs. Health Workforce New Zealand supported two of these as multidisciplinary rural immersion health training centres. One was run by the University of Auckland (Faculty of Medical and Health Sciences) and the other by the University of Otago (Division of Health Sciences) in conjunction with Auckland University of Technology (AUT) and Eastern Institute of Technology. Both provided interprofessional residential immersion in groups for dental, dietetic, medical, nursing, pharmacy, physiotherapy, occupational therapy and other students.

Living together, students learned informally about each other's professions as they gained clinical experience including opportunities to work in Māori communities and with Māori health providers during an unparalleled opportunity to engage in a comprehensive IPE programme. Learning from a wide range of activities at multiple sites, they saw patients together in clinics and during home visits as they made joint decisions. They worked with clinicians not only in their own profession, but also

across the professional spectrum, as they co-reflected on their learning in the context of the community, the literature and the evidence. (<http://www.rhiip.ac.nz/about>)

Africa

IPE initiatives have been reported throughout the length of Africa from Algiers in the north to Cape Town in the south. Students from the Faculty of Medicine at the Suez Canal University encountered patients and began to work within interprofessional health teams during clinical practice in community-based primary care, although interactive learning on-site was lacking (Hosny et al., 2013). Medical, dentistry, nursing, physical therapy and medical psychology students at the College of Health Science at Moi University in Kenya participated in interprofessional, interactive, problem-based and multifaceted learning in health centres and during outreach activities (Mining, 2014).

Senior faculty from Copperbelt (Zambia), Lurio (Mozambique), Moi and Masinde Muliro (Kenya) and Namibia universities participated in the three-year 'Next-Step' project funded by the Finnish Government and led by faculty from the two Oulu universities to "enhance interprofessional skills, develop innovative curricula and participative leadership skills" (CIMO, 2015). Support built up during the project to launch an African IPE network discussed with like-minded interprofessional activists in South Africa.

South Africa

Health systems and health professions education in post-apartheid South Africa are challenged by health inequity, which is further exaggerated by the burden of disease caused by HIV, AIDS and TB. In addition to these pandemics, the overwhelming impact of social determinants of health highlighted the shortcomings of a reactive, biomedical approach to healthcare, which centred on non-sustainable uniprofessional or hierarchical multiprofessional paradigms of care (Bradshaw, 2008; Lazarus, Meservey, Joubert et al., 1998).

These challenges led the new democratic government to embark on a process of re-engineering primary healthcare (PHC), focusing on community-orientation, community participation and community-based education (Republic of South Africa, 2015; Kinkel, Marcus & Memon et al., 2013; Lazarus et al., 1998). In the *White Paper for the Transformation of the Health System in South Africa* the role of health professions' training institutions was stipulated as ensuring the delivery of "appropriate, multidisciplinary community-problem and outcome-based education programmes . . . to support and enhance the PHC approach" (Republic of South Africa, 1997).

The refocus on PHC and community engagement served as catalyst for offering new training programmes, adding a new dimension to traditional health care teams. The emergence of community health workers – one million are needed in sub-Saharan Africa (Singh & Sachs, 2013) – clinical associates and assistants in pharmacy, physiotherapy, occupational therapy, counseling and nursing, necessitated a relook at professional identities, interprofessional collaboration (IPC), task shifting and task sharing. The recognition of traditional healers added another interesting discourse to the meaning of interprofessional collaboration (Republic of South Africa, 2007).

In an effort to address these challenges, numerous changes took effect in traditional curricula (e.g. for medicine, nursing, pharmacy and rehabilitation professions). These included the introduction of problem-based learning with students from various professions learning together, especially in the first year of study. More traditional courses also introduced opportunities for IPE, e.g. by teaching generic skills, global health, health systems, health promotion, anatomy, clinical skills, cultural sensitivity, a second or third language and ethics (Stellenbosch University, 2015; Treadwell, Van Rooyen, Havenga & Theron, 2014; Peu, Mataboge, Chinouya et al., 2014; Waggie & Laattoe, 2014; Scrooby, 2012; Duncan, Alperstein et al., 2006; Tessendorf & Cunningham, 1997).

An emerging service-learning movement within health professions education in South Africa also contributed to the development of IPE over the last decade, especially with the publication of the guidelines, *Service-learning in the curriculum – a resource for higher education institutions* (Smith-Tolken, 2010; Higher Education Quality Committee, 2006). During a one-day workshop at the 5th International Symposium on Service-Learning (20-22 November 2013, Stellenbosch, South Africa) there was consensus on the strategic role service-learning has to play in transforming health professions education, especially in implementing the recommendations of the Lancet Commission (Frenk et al., 2010) relating to community-based education and IPE.

A game-changer for IPE in South Africa came with the release of that report and that of the *Global Consensus for Social Accountability of Medical Schools* (2010) as well as *THENet's Social Accountability Evaluation Framework* (Training for Health Equity Network, 2011) reinforced by the WHO's *Framework for Action on Interprofessional Education and Collaborative Practice* (WHO, 2010). These reports led to a series of workshops by the Undergraduate Education and Training Committee of the Medical and Dental Board of the Health Professions Council of South Africa to determine how to give effect to the recommendations of these reports in addressing the health needs of South Africa's population. Discussions included competency-driven instructional design, the ability of graduates to work optimally in interprofessional and transprofessional teams and of graduates from various professions to share tasks where needed and appropriate (Van Heerden, 2013). Subsequently, an adapted CanMEDS Competency Framework (Frank, 2005) was accepted for the training of medical doctors, dentists and clinical associates (physician assistants).

Integrating the collaborator role of CanMEDS into curricula as part of Stellenbosch University's interprofessional education strategy led to the University's selection as part of the Institute of Medicine's Global Forum for the Innovation in Health Professions Education (Institute of Medicine, 2013). Stellenbosch adopted a strategy to integrate interprofessional competencies in curricula as part of its social accountability in training agents of change to address the health needs in Africa (Talaat & Ladhani, 2014).

Other components of their IPE strategy included using the International Classification of Functioning, Disability and Health (WHO, 2001) as a common language between all professions and conceptual framework for the biopsychosocialspiritual approach to patients. Faculty development, not only in the academic centre, but also in the district health system, played a crucial part in developing role models for interprofessional collaborative practice (IPCP) (Snyman, Von Pressentin & Clarke, 2015).

Other universities followed suit as IPE strategies were reassessed and developed, given impetus by South African Association of Health Educationalists (SAAHE). During its 2013 annual congress, delegates requested that the Academy of Science of South Africa (ASSAf) facilitate national level advancement of IPE, especially as it relates to overcoming barriers in institutional and instructional design.

The University of KwaZulu-Natal (2014) organised a symposium, *Towards Interprofessional in Education and Collaborative Practice in South Africa*, gathering representatives from professional councils and training institutions. At this symposium a declaration was issued acknowledging that IPE and collaborative practice can result in better health outcomes and strengthened health systems. Participants committed themselves to advancing interprofessional education and collaborative practice by forming a national community of practice and working towards establishing one throughout Africa which will:

- Advocate for inclusion of IPCP into scopes of practice and exit level outcomes required by all professional councils;
- Advocate for integration of IPE in health professional curricula at universities;
- Advocate for cultivating IPECP competencies among faculty, preceptors and service providers;

- Identify best practice IPECP models and share resources to adapt such models to the South African context;
- Participate in international networks informing best practice models;
- Utilise networks and platforms to create an awareness of IPECP;
- Mobilise relevant stakeholders in health, social and educational sectors;
- Conduct collaborative research to inform IPECP in Africa.

The Middle East

Internet exchanges between interprofessional activists via the Eastern Countries Interprofessional Network (ECIPEN) included responses from a swathe of Central Asian and Middle Eastern countries. Information was, however, often lacking whether respondents were engaging as themselves or on behalf of organisations. We focus here on those Middle Eastern countries for which sources were more concrete. These and other countries in the region based their understanding of IPE and collaborative practice in teaching from the Quran grounded in the belief that God has enacted mutual rights for people, all of whom come from the same soul; rights that can only be met through collaboration and mutual respect (Irajpour, Ghaljaei & Alavi, 2014).

Iran

In common with many developing countries, Iran had a longstanding shortage of medical personnel resulting in inadequate and discriminatory health care services, especially for rural inhabitants. In 1974 those concerns prompted an Imperial Commission to recommend a comprehensive health care network and the development of education for frontline auxiliaries authorised and able to practice with medical supervision. The College of Health Sciences was established in 1974 as a multidisciplinary institution at national level grounded in the principles that the education should be integrated, task oriented and free from restrictions. Learning would be progressive and interrelated from the frontline health worker to the physician-specialist. Innovative and imaginative teaching methods would be encouraged to improve efficiency of learning and reduce costs. Irajpour et al. (2010) cited examples of the shared learning that followed. Similar proposals were activated in 1985 following the revolution and led by the Ministry for Health and Medical Education. Health professions' education was upgraded and the teaching institutions improved, resulting in a marked increase in the number of Iranian trained workers and better services.

Against that backdrop, Irajpour (2011) reflected on IPE in Iran and recorded with colleagues its incidence based on a review of the literature, findings from a questionnaire survey and in-depth interviews (Irajpour et al., 2010). Government regulations, endorsed by universities in their policy statements, emphasised the need to develop interprofessional relationships through shared learning akin to IPE. In response to the survey, most of the universities reported such learning for medical, nursing and allied health students though typically didactic and passive.

Birjand, Iran, Isfahan, Mashhad, Shahid Beheshti, Shiraz and Tehran universities of medical sciences, plus individual members, have a virtual network linking educational programmes that accord with IPE principles. Its website (www.ipe-c.ir in Farsi) put basic interprofessional concepts in their historical context, illustrated with national and international examples from education and practice.

Guidelines for interprofessional practice included:

- an assessment tool for weaning patients under mechanical ventilation;
- a patient monitoring flow sheet for use in intensive care units;
- experiencing stillbirth;
- end of life care.

Proposals were ratified by the Isfahan Postgraduate University Council to launch a virtual postgraduate school to design and present interprofessional core courses for PhD and MSc students as well as interprofessional induction days. Related doctoral and postdoctoral interprofessional research included:

- Grounding IPE and collaborative practice in teaching in the Quran (Irajpour, Ghaljaei & Alavi, 2014)
- Assessing the readiness for IPE in health care students (Irajpour, Alavi & Nasiri, 2008)
- Developing an interprofessional curriculum for palliative care (Irajpour & Alavi, 2012)
- Interprofessional collaboration in mental health services (Alavi, Irajpour, Abdoli & Saberi Zafarghandi, 2012)
- The culture of inter professional collaboration in an intensive care unit (Zananzadeh, Irajpour, Valizadeh & Shoman, 2014).

Pakistan

The psychology department at the International Islamic University Islamabad invoked IPE to help respond to the prevalence of mental illness triggered by violence and political turmoil, manifest in the high incidence of suicide, post traumatic stress disorder and drug abuse. The University took an Islamic approach to IPE and collaborative practice in its local, national and international seminars and conferences to support frontline professionals including religious teachers in the madares (seminaries).

Qatar

IPE and collaborative practice were built into the strategy to prepare the future workforce as the healthcare system grew and evolved to meet the needs of Qatar's rising population. An Interprofessional Health Council (QIHC) was formed in 2009 to promote, inform and provide leadership in IPE including representatives from the Qatar University College of Pharmacy, the Hamad Medical Corporation, the Sidra Medical and Research Centre and branch campuses of North America universities in Qatar: Weill Cornell Medical College, the University of Calgary School of Nursing and the College of North Atlantic (Johnson et al., 2011). It was funded by the Qatar National Research Fund to develop core competencies to be implemented in interprofessional undergraduate health care education.

The Canadian accredited College of Pharmacy in Qatar University had the lead role with these and other bodies to implement IPE across all healthcare degree programs in Qatar. (http://www.qu.edu.qa/pharmacy/academics/ipec_welcome.php) It formed an Interprofessional Education Committee (IPEC) dedicated to facilitating awareness and understanding of IPE for collaborative practice for students and faculty. The Committee provided guidance and support in implementing IPE curricula for medicine, nursing, pharmacy, health sciences and sports science. Members represented all the above healthcare colleges. IPE initiatives in the country were coordinated and organized by the College of Pharmacy. Related IPE research from the college included relations between pharmacy and nursing students (Wilbur & Kelly, 2014; Wilbur, Hasnani-Samnani & Kelly, 2015) and their attitudes team-based care (Wilby, Al-Abdi et al., 2015). In addition, internal grants by Qatar University funded an investigation into IPE at pharmacy schools in Arabic-speaking middle eastern countries and an exploration of the views, attitudes and perceptions of pharmacists and pharmacy students in Qatar towards IPE and collaborative working.

Experienced interprofessional teachers from Robert Gordon University in Aberdeen, Scotland, led the first Interprofessional Education Symposium for healthcare faculty in Qatar in February 2015. The College of Pharmacy in Qatar University will also be hosting first Middle East regional interprofessional conference in December 2015.

Turkey

The Speech and Language Academy in Turkey ran seminars about interprofessional collaboration between audiologists, doctors, nurses, physiotherapists, speech and language therapists, schoolteachers, special educators and others across education and health sectors. The seminars were based on a shared philosophy covering speech and language therapy and special needs rehabilitation. Participants established their own network - the Turkish Interprofessional Education and Practice Network (TIPE) (www.tipe.gen.tr) see also (www.speechacademy.gen.tr). Members of the Turkish police and law academies were also taking a keen interest in IPE and collaborative practice in the criminal justice system. Isnik University in the neighbouring Kurdish region of Iraq ran interprofessional seminars about collaborative practice for its health and medical students.

Going global

Progress in establishing global interprofessional institutions is uneven. Developments accorded critical acclaim include *the Journal of Interprofessional Care* and the *All Together Better Health* (ATBH) conferences. Launched in 1992, the Journal began as a UK publication reaching out to engage with North America following an invitation to members of its editorial team to address the 1995 North American ICTH conference in Pittsburgh. Co-editors were appointed from the UK and US adding a North American Editorial Board. Subscriptions and coverage soon extended to numerous other countries. (<http://www.informahealthcare.com/jic>) The first ATBH conference was held in London under the Journal's auspices in 1997. Others followed in Vancouver, London, Stockholm, Sydney, Kobe and Pittsburgh, with Oxford in preparation for 2016 and Auckland for 2018.

Establishing a global organisation was more challenging. Discussion which began between Canadian, US and UK delegates during the Williamsburg ICTH conference led to a proposal, in the first instance, for an association of like-minded individuals. The International Association for Interprofessional Education and Collaborative Practice (InterEd) was launched and registered as a charity in British Columbia. Its major achievements were launching, in partnership with the WHO, the working group (mostly comprising InterEd members) leading to the Framework for Action (WHO, 2010), and advising planning groups for successive ATBH conferences. These commitments absorbed most of the time and energy of InterEd's volunteer leadership leaving little in reserve to build a viable organisation, recruit members and establish working relations with the growing number of interprofessional networks including:

- The interprofessional special interest group of the Network: Towards Unity for Health (Network: TUFH) is dedicated to the improvement of medical education worldwide (www.thenetworktufh.org/).
- In-2-Theory comprises interprofessional activists dedicated to improving the theoretical rigour of IPE (Hean et al., 2013) (<https://www.facebook.com/groups/IN2THEORY/>).
- Similarly, GRIN - the Global Research Interprofessional Network - advances research into IPE and collaborative practice (Thistlethwaite, 2013). (<https://www.facebook.com/grinweb>)
- World Healthcare Students' Symposium meets in conference every other year for five days and involves some 350 students of medicine, pharmacy, nursing, chiropractic, dentistry, veterinary and other healthcare professions. It is supported by eight profession -specific student associations around the world. (<http://whss2015.com/>)

The boundaries for the other networks are geographically defined:

AIHC – the American Interprofessional Health Collaborative (www.aihc-us.org/)

AIPPEN – the Australasian Interprofessional Education and Practice Network (www.aippen.net)

CAIPE – the (UK) Centre for the Advancement of Interprofessional Education (www.caipe.org.uk)

CIHC – the Canadian Interprofessional Health Collaborative (www.cihc.ca/)

EIPEN – the European Interprofessional Practice and Education Network (www.eipen.org)

JAIFE – the Japan Association for Interprofessional Education (www.jaipe.jp/)

JIPWEN - the Japan Interprofessional Working and Education Network
(jipwen.dept.showa.gunma-u.ac.jp/)

NIPNET - the Nordic Interprofessional Network (www.nipnet.org)

Varied though these networks are in constitution, structure and resources, their strengths seemed to provide a more realistic starting point than InterEd from which to build a viable and sustainable global organisation. Accordingly, the World Coordinating Committee for Interprofessional Education and Collaborative Practice (WCC) (www.atbh.org) was convened to represent the networks, encourage cooperation between them, be a collective voice and support the ATBH conferences. The WCC is ready to consider applications from other networks dedicated to the promotion and development of IPE and collaborative practice when established.

In Conclusion

We have conducted this review to enable readers:

- to compare and contrast their interprofessional journeys;
- to support others travelling the same road;
- to network nationally and internationally;
- to help build global interprofessional institutions.

We have respected, within the limits of our understanding, the distinctive interprofessional experience in each country. Context is critical. One size does not fit all. Celebrating difference, we rejoiced in the unity of purpose that set aside rivalries and vested interests to work as one across cultures and countries to promote health and wellbeing for all. Much remains to be done to develop institutions and infrastructure for the emerging global interprofessional movement, but the foundations are being laid.

References:

- Aguilar-da-Silva, R.H. (2011) Interprofessional education in health graduation: Evaluation aspects of its implementation in Marília Medical School. *Educar em Revista*, 39: 159-75.
- Aguilar-da-Silva, R.H., Scapin, L.T., Batista, Na. (2011) Avaliação da formação interprofissional no ensino superior em saúde: aspectos da colaboração e do trabalho em equipe. *Avaliação (Campinas)*. 16: 165-84.
- Alavi M., Irajpour A., Abdoli, S. & Saberi Zafarghandi, M.B. (2012) Clients as mediators of interprofessional collaboration in mental health service in Iran. *Journal of Interprofessional Care*, 26 (1): 36-42.
- Altin, S.V., Tebest, R., Kautz-Freimuth, S., Redaelli, M. & Stock, S. (2014) Barriers in the implementation of interprofessional continuing education programs – a qualitative study from Germany. *BMC Medical Education* 14: 227.

- Areskog, N-H. (1988a) *Multiprofessional team training within the health care sector in Sweden*. In: Multiprofessional education of health personnel in the European Region. Edited by J-F. Ivernois & V.Voradski. Annex7. WHO, Copenhagen.
- Areskog, N-H. (1988b) The need for multiprofessional health education in undergraduate studies. *Medical Education* 22: 251-252.
- Areskog, N-H. (1992) The New Medical Education at the Faculty of Health Sciences, Linköping University – a challenge for both students and teachers. *Scandinavian Journal of Medical Education* 2: 1-4.
- Areskog, N-H. (1994) Multiprofessional education at the undergraduate level – the Linköping Model. *Journal of Interprofessional Care* 8 (3): 279-282.
- Areskog, N-H. (1995) *Multiprofessional education at the undergraduate level* In: K. Soothill, L Mackay, & C. Webb, (eds) *Interprofessional Relations in Health Care*. Edward Arnold, London: 125-139.
- Baker, G.R., Gelmon, S., Headrick, L.A., Knapp, M., Norman, L., Quinn, D. & Neuhauser, D. (1998) Collaborating for improvement in health professions education. *Quality Management in Health Care*. 1998, 6 (2):1-11.
- Bajaj, J. (1994) Multiprofessional education as an essential component of effective health service. *Medical Education* 28 (Supplement 1): 86-91.
- Baldwin, D.C. (1996) Some historical notes on interdisciplinary and interprofessional education and practice in health care in the USA. *Journal of Interprofessional Care* 10(2): 173-188.
- Baldwin D.C. (1982) The British are coming: Some reflections on health care teams in Great Britain. In: J.I. Pisaneschi (ed) *Interdisciplinary health team care: Proceedings of the fourth annual conference*. University of Kentucky 3-17. Reformatted in: *Journal of Interprofessional Care*, Supplement 1: 86-96.
- Baldwin, D.C. & Rowley, B.D. (1976). *Interdisciplinary health team training: Proceedings of a workshop*. Reno, Nevada: University of Nevada School of Medicine. Reissued: 1982 by the Center for Interdisciplinary Education in Allied Health, College of Allied Health Professions, University of Kentucky.
- Bansal, P. & Jamkar, A. (2014) Faculty development in health professions education - The Health Sciences University model - interprofessional leadership in action. In: D. Forman, M. Jones & J. Thistelthwaite (eds) *Leadership development for interprofessional education and collaborative practice*. Basingstoke: Palgrave Macmillan: 151-161.
- Bansal, P., Vyas, R., Menon, P., Patrikan, S. & Jamkar, A. (2015) Sharing interprofessional education - Educators in action. In: D. Forman, M. Jones & J. Thistelthwaite (eds) *Leadership and collaboration: Further developments for interprofessional education*. Basingstoke: Palgrave Macmillan: 213-228.
- Barr, H. (1994) *Perspectives on Shared Learning*. London: CAIPE.
- Barr, H. & Waterton, S. (1996) *Interprofessional education in health and social care: the report of a United Kingdom survey*. London: CAIPE.
- Barr, H., Helme, M. and D'Avray, L. (2011) *Developing interprofessional education in health and social care courses in the United Kingdom: A progress report*. London: Health Sciences and Practice Subject Centre Higher Education Academy. Occasional Paper 12. (www.caipe.org.uk)
- Barr, H., Helme, M. and D'Avray, L. (2014) *Review of interprofessional education in the United Kingdom, 1997-2013*. London: CAIPE. (www.caipe.org.uk)
- Barr, H., Koppel, I., Reeves, S., Freeth, D. & Hammick, M. (2005) *Effective interprofessional education: argument, assumption and evidence*. Oxford: Blackwell Sciences with CAIPE.
- Batista, N. (2012) Educação Interprofissional em Saúde: concepções e práticas. *Cadernos FNEPAS*. 2: 25-8.
- Beckard, R. (1974) Organizational issues in the team delivery of comprehensive health care. *Milbank Memorial Fund Quarterly* 50: 287-316.
- Berwick, D.M., Nolan, T.W. & Whittington, J. (2008) The triple aim: care, health, and cost. *Health Affairs* 27(3): 759-769.

- Boelen, C. (2000) *Challenges and opportunities for partnership in health development: A working paper*. Geneva: WHO
- Bradshaw, D. (2008). Determinants of Health and their Trends. *South African Health Review*: 51–72.
- Brandt, B. (2014) Update on the US National Center for Interprofessional Practice and Education. *Journal of Interprofessional Care* 28 (1): 5-7.
- Brandt, B., May, N.L., King, J.A. & Chioreso, C. (2014) A scoping review of interprofessional collaborative practice and education using the lens of the triple aim. *Journal of Interprofessional Care* 28 (5): 393-399.
- Brandt, B.F. & Schmitt, M. (2011) *Interprofessional education and training in the United States – resurgence and refocus*.
([http://rcpsc.medical.org/publicpolicy/imwc/Interprofessional Education US Brandt Schmitt.PDF](http://rcpsc.medical.org/publicpolicy/imwc/Interprofessional_Education_US_Brandt_Schmitt.PDF))
- Brewer, M. & Jones, S. (2013) An interprofessional practice capability framework focusing on safe, high-quality, client-centred health service. *Journal of Allied Health* 42 (3): 45-49.
- Brewer, M., Flavell, H., Smith, M., Trede, F. & Jones, S. (2014). *Creating a collaborative practice environment which encourages sustainable interprofessional leadership, education and practice*. Report to the Office of Learning and Teaching.
(http://healthsciences.curtin.edu.au/faculty/leadership_program.cfm)
- Canadian Interprofessional Health Collaborative (2010) *A national competency for interprofessional collaboration*. (http://www.cihc.ca/files/CIHC_IPCompetencies_Feb1210.pdf)[✓]
- CIMO (2015) Next steps. (www.cimo.fi/programmes/north-south-south/nss-networks/29)
- Clarke, W. D. (1988) *The British Life Assurance Trust Centre for Health and Medical Education (BLAT) and Multiprofessional Training*. In: J-F. d'Ivernois & V. Vodradski (eds) *Multiprofessional education for health personnel in the European Region*. Annex 8. Copenhagen: WHO.
- Costa, M.V. d. (2014) *A educação interprofissional como abordagem para a reorientação da formação profissional em saúde*. Natal - RN: Universidade Federal do Rio Grande do Norte
- Cuhna, I.C., Monteiro de Andrade, L.O., Melo, A.E., Tavares, M.M., Ferreira, M.R., Conde, L., Brígido, W.V., de Lima, C.W., Correia, C.G., Marques, M.M., Maciel, M.F., Sales, L.M., Barbosa, M.G. (2012) *Gestão Participativa no SUS e a Integração Ensino, Serviço e Comunidade: a experiência da Liga de Saúde da Família, Fortaleza, CE1*. *Saúde Soc. São Paulo*, v.21, supplement 1:80-93.
- Curran, V.R., Deacon, D.R. & Fleet, L. (2007) Academic administrators' attitudes towards interprofessional education in Canadian schools of health professional education. *Journal of Interprofessional Care* 19 (1): 76-86.
- Cyrino, E.G., Cyrino, A.d.P.P., Prearo, A.Y., Popim, R.C., Simonetti, J.P. & Boas, P.J.F.V., et al. (2012) Ensino e pesquisa na estratégia de saúde da família: o PET-Saúde da FMB/Unesp. *Rev Bras Educ Med*. 36: 92-101.
- Dahlberg, J., Lindh Falk, A., Kjellgren, K. & Abrandt Dahlgren, M. (2014) *Creating a Common Curriculum for Interprofessional Learning: Strategic Development of Undergraduate Programs in Medicine and Health*. Conference presentation: Educational development in a changing world, 16-18 June 2-14, Stockholm. (www.ICED2014.se)

- D'Amour, D. & Oandasan, I. (2005) Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. *Journal of Interprofessional Care*, supplement 1: 8-20
- Davidson, L. & Lucas, J. (1995) Multiprofessional education in the undergraduate health professions curriculum : Observations from Adelaide, Linkoping and Salford. *Journal of Interprofessional Care* 9 (2): 163-176.
- Dawson Report (1920) *Interim report of the Consultative Council on future provision of medical and allied services*. London: HMSO
- De Maeseneer, J. (2013) *Interprofessional Education for Collaboration*. Washington DC: Institute of Medicine
- d'Ivernois, J-F. & Vorodatski, V. (1988) *Multiprofessional education for health personnel in the European Region*. Copenhagen, WHO.
- d'Ivernois, J-F. Comillot, P. & Zomer, Y. (1988) *Experiences of multiprofessional education at the Medical Faculty of University Paris-Nord, Bobigny*. In: *Multiprofessional Education for Health Personnel in the European Region*. (J-F. d'Ivernois & V. Voradski, eds). Annex 4. Copenhagen, WHO.
- Duncan, M., Alperstein, M., Mayers, P., Olckers, L. & Gibbs, T. (2006). Not just another multi-professional course! Part 1. Rationale for a transformative curriculum. *Medical Teacher*, 28 (1): 59-63.
- Dunston, R. (2012) *The 'interprofessional' in Australian health professional education: current activity and recommendations for action*. Sydney: University of Technology Sydney
- Dunston, R., Forman, D., Moran, M., Rogers, G., Thistlethwaite, J. & Steketee, C. (2015) *Curriculum Renewal in Interprofessional Education in Health: Establishing Leadership and Capacity. Report to the Office of Learning and Teaching*. Sydney: University of Technology Sydney
- Endoh, K., Magara A. & Nagai, Y. (eds) (2012) *Development and practice of interprofessional education in Japan: modules, sharing & spreading*. Niigata: Niigata University of Health and Welfare.
- England, H. (ed) (1979) *Education for co-operation in health and social work: Papers from the Symposium in Interprofessional Learning*, University of Nottingham, July 1979. London: Royal College of General Practitioners.
- European Health Committee (1993) *Multiprofessional education for health personnel*. Strasbourg : Council of Europe.
- European Union (1999). The Bologna process: Setting up the European Higher Education Area. (http://europa.eu/legislationsummaries/education_training_youth/lifelong_learning/c11088_en.htm)
- Flexner, A. (1910) *Medical education in the United States and Canada: A report to the Carnegie Foundation for the Advancement of Teaching*. New York: the Carnegie Foundation for the Advancement of Teaching.
- Foumier, C., Frattini, M-O. & Naiditch, M. (2014) Experiencing the impact of a specific funding scheme for primary care teams on professional dynamics and inter-professional teamwork in France: A qualitative assessment. *Questions d'economie de la santé*, 2000, July-August 2014
- Frank, J.R. (ed.). (2005). *The CanMEDS 2005 physician competency framework. Better standards. Better physicians. Better care*. Ottawa: The Royal College of Physicians and Surgeons of Canada.
- Freden, L. (1997) Unpublished presentation to the 'All Together Better Health' conference, London, 1997.
- Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, E., Fineberg, H., Garcia, P., Ke, Y., Kelley, P., Kistnasamy, B., Meleis, A., Naylor, D., Pablos-Medez, A., Reddy, S., Scrimshaw, S., Sepulveda, J., Sewadda, D. & Zurayk, H. (2010) *Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world*. A Global Independent Commission. (www.thelancet.com)
- Foley, H. & Felletti, G. (1993) The Hawaii Education Community Partnership Programme. *Annals of Community-Oriented Education*, 6: 125-140.
- Forman, D., Jones, M. & Thistlethwaite, J. (eds) (2014) *Leadership development for interprofessional education and collaborative practice*. Basingstoke: Palgrave Macmillan

Forman, D., Jones, M. & Thistlethwaite, J. (eds) (2015) *Leadership and collaboration: Further developments for interprofessional education*. Basingstoke: Palgrave Macmillan

Fry, R., Lech, B. & Rubin, I. (1974) Working with the Primary Care Team; The First Intervention. In H. Wise et al. (eds) *Making Health Care Teams Work*. Ballinger, Cambridge, MA 27-59

Fulmer, T. & Gaines, M. (Eds.) (2014). Partnering with patients, families and communities to link interprofessional practice and education. New York: Josiah Macy Jr. Foundation. García-Huidobro, D., Skewes, S., Barros, X., Pizarro, C. & Gawinski, B.A. (2013) Learning together to work together: interprofessional education for students in a primary care setting in Chile. *Family Medicine* 45 (4):272-275

Gelmon, S., Holland, B., Shinnamon, A. & Morris, B. (1998) Community-based education and services: the HPSISN experience. *Journal of Interprofessional Care* 12 (3) 257-272.

German Council of Science and Humanities (2012). Recommendations on higher education qualifications for the healthcare system. (http://www.wissenschaftsrat.de/download/archiv/2411-12_Executive-Summary.pdf)

Gilbert, J.H.V. (2008) Abraham Flexner and the roots of interprofessional education. *Journal of Continuing Education in the Health Professions*, 28, Supplement 1: 216-223

Gilbert, J.H.V. (2010) The status of interprofessional education in Canada. *Journal of Allied Health* 39 (3) Part 2, special issue: 216-223.

Gilbert, J.H.V. (2014) Interprofessional education in Canada: 2003-11. In: D. Forman, M. Jones & J. Thistlethwaite (Eds) *Leadership development for interprofessional education and collaborative practice*. Basingstoke: Palgrave Macmillan: 26-44.

Goble, R. (1994a) *Multiprofessional education in Europe: an overview*. In: A. Leathard (ed) *Going interprofessional: working together for health and welfare*. London: Routledge:175-187.

Goble, R. (1994b) Multiprofessional education: European Network for Development of Multiprofessional Education in Health Sciences (EMPE). *Journal of Interprofessional Care* 8 (1): 85-92.

Goble, R. (2003) Multi-professional education: Global perspectives. In: A. Leathard (ed) *Interprofessional collaboration: from policy to practice in health and social care*. Hove: Brunner-Routledge, 324-34

Goldman, J., Zwarenstein, M., Bhattacharyya, O. & Reeves, S. (2009) Improving the clarity of the interprofessional field: implications for research and continuing interprofessional education. *Journal of Continuing Education for Health Professionals*. 29 (3):151-6.

Global Consensus for Social Accountability of Medical Schools. (2010). Higher Education Quality Committee. 2006. *Service-learning in the curriculum – a resource for higher education institutions*. Pretoria: Council for Higher Education. (<http://www.healthsocialaccountability>)

Graham, J. & Wealthall, S. (1999) Interdisciplinary education for health professions: taking the risk for community gain. *Focus on Health Professional Education: a Multi-disciplinary Journal*, 1 (1): 49 –69.

Greenberg, L.G. (1991). Profile: W.K. Kellogg Foundation. *Health Affairs*, 10: 251-253. (<http://content.healthaffairs.org/content/10/3/251.full.pdf>)

Gregson, B.A., Carlidge, A, & Bond. J. (1991) Interprofessional collaboration in primary health care organizations. *Royal College of General Practitioners Occasional Paper* 52: 1–52.

Hamad, B. (1982) Interdisciplinary field training research and rural development programme. *Medical Education* 16: 105-107.

Harsh, S.A., Fewell, J.W. & Casto, R.M. (2000) Twenty-Five Years of Collaboration for Interprofessional Education and Practice at the Ohio State University *Peabody Journal of Education*, 75 (3): 115-132

Headrick, L.A., Knapp, M., Neuhauser, D., Gelmon, S., Norman, L., Quinn, D. & Baker, R. (1996) Working from upstream to improve health care: The IHI Interdisciplinary Professional Education Collaborative. *Journal on Quality Improvement*. 22:149-164.

Health Professional Education Quality Project (2011) *Your guide to HPEQ*. Jakarta: Indonesian Health Professional Student Organisations Alliance for Education.

Health Professional Education Quality Project (2012) *Health professional students should know!* Jakarta: Indonesian Health Professional Student Organisations Alliance for Education.

Hean, S., Anderson, E., Bainbridge, L., Clark, P.G., Craddock, D., Doucet, S., Hammick, M., Mpofu, R., O'Halloran, C., Pitt, R. & Oandasani, I. (2013) IN-2-THEORY-Interprofessional theory, scholarship and collaboration: a community of practice. *Journal of Interprofessional Care* 27 (1): 88-90.

Heinemann, G.D. and Zeiss, A. M. (eds.) (2002) *Team Performance in Health Care*. Preface. New York: Kluwer Academic/Plenum Publishers.

Herbert, C.P. (2005) Editorial. *Journal of Interprofessional Care* 19, Supplement 1: 1-4.

Horder, J. (1995) *Interprofessional education for primary health and community care; present and future needs*. In: Soothill, K., Mackay, L., & Webb, C. (eds) *Interprofessional relations in health care* : 140-162. London: Edward Arnold.

Hosny, S., Kamel, M.H., El-Wazir, Y. & Gilbert, J. (2013) Integrating interprofessional education in community-based learning activities: case study. *Medical Teacher* 35, Supplement 1: 68-73.

Hulgaard, E. (2010) *An Interprofessional Learning Module in Education, Social and Health BA Programmes at VIA University College*.

Interprofessional Education Collaborative Expert Panel (2011) *Core competencies for interprofessional collaborative practice: report of an expert panel*. Washington D.C.: Interprofessional collaborative

Interprofessional Curriculum Renewal Consortium, Australia. (2013) *Interprofessional Education: a National Audit, Report to Health Workforce Australia*. Sydney: University of Technology Sydney.

Interprofessional Curriculum Renewal Consortium, Australia. (2014) *Curriculum Renewal for Interprofessional Education in Health*. Canberra: Commonwealth of Australia, Office for Learning and Teaching.

Institute of Medicine. (1972) *Education for the health team*. Washington DC: National Academy of Sciences

Institute of Medicine (2003) *Health professions education: A bridge to quality*. Washington DC: Institute of Medicine

Institute of Medicine. (2013) *Interprofessional education for collaboration: Learning how to improve health from interprofessional models across the continuum of education to practice: Workshop summary*. Washington, DC: National Academies Press.

Institute of Medicine. (2015) *Measuring the impact of interprofessional education on collaborative practice and patient outcomes*. Washington DC: National Academies Press

Irajpour, A. (2011), Interprofessional education: A reflection on education of health discipline. *Iranian Journal of Medical Education* 10 (4): 451-462. (In Farsi)

Irajpour, A., Alavi, M., Abdoli, S., Saberi Zafarghandi, M.B. (2012) Challenges of interprofessional collaboration in Iranian mental health services: A qualitative investigation. *Iranian Journal of Nursing and Midwifery Research*, (Special Issue): 190-198.

Irajpour A., Alavi M., & Afshar H., (2012) Interprofessional collaboration: An appropriate strategy to mental health services. *Journal of Behavioural Research Center*: 9 (5): 1-7. (in Farsi)

Irajpour, A., Barr, H., Abedi, H., Salehi, S. Changiz, T. (2010) Shared learning in medical sciences education in the Islamic Republic of Iran: An investigation. *Journal of Interprofessional Care*, 24 (2): 139-149.

Irajpour, A., Ghaljaei, F. & Alavi, M. (2014) Concept of Collaboration from the Islamic Perspective: The View Points for Health Providers. *Journal of Religion and Health* 53 (5)

Isokoski, M. (1986) *Multiprofessional training for primary health care administration: The Finnish experience*. In: Multiprofessional education for health personnel in the European Region. (eds J-F. d'Ivernois & V. Voradski). Annex 3. Copenhagen: WHO.

Jaatinen, P.T. & Saxen, U. (2007) Common training for students at the academic health centre. *Journal of Interprofessional Care* 21 (6): 697-689.

Jacobs, J. L., Samarasekera, D.D., Chui, W.K., Chan, S.Y., Wong, L.L., Liaw, S.Y., Tan, M.L. & Chan, S. (2013) Building a successful platform for interprofessional education for health professions in an Asian university. *Medical Teacher* 35 (5) 343-347

Jacobsen, F., Fink, A.M., Marcussen, V., Larsen, K., & Hansen, T.B. (2009). Interprofessional

- undergraduate clinical learning: Results from a three year project in a Danish interprofessional training unit. *Journal of Interprofessional Care* 23, 30-40.
- Jensen, D.C., Nørgaard, B., Draborg, E., Vestergaard, E. & Sørensen, J. (2012) Organizational development of interprofessional education – a Danish case study. *Journal of Interprofessional Care* 26 (6): 497-504.
- Johnson, B., Pyburn, R., Bolan, C., Byrne, C., Jewesson, P., Robertson-Malt, S., El-Tawil, M. & Verjee, M. (2011) Qatar Interprofessional Health Council: IPE for Qatar. *Avicenna*, 2.
- Journal of Interprofessional Care (2005) *Interprofessional education for collaborative patient centred practice: Canada as a case study*. 19, Supplement 1: 1-4.
- Kavcic, M. & Ferfila, N. (2013) Interprofessional education in health care – does it really make a difference? (http://eipen.eu/doc/Program_book_EIPEN_conference_2013.pdf)
- Kuehn, A.F. (1998) *Collaborative health professional education: An interdisciplinary mandate for the third millennium*. In: T.J. Sullivan (ed), *Collaboration: A health care imperative*. New York: McGraw-Hill: 419-465.
- Kinkel, H-F., Marcus, T., Memon, S., Bam, N. & Hugo, J. (2013). Community oriented primary care in Tshwane District, South Africa: Assessing the first phase of implementation. *African Journal of Primary Health Care & Family Medicine*, 5 (1)
- Kohn, L.T., Corrigan, J.M. & Donaldson M.S. (eds) (1999) *To err is human: Building a safer health system*. Committee on Quality of Health Care in America. Washington DC: Institute of Medicine.
- Kovacic, L. (1988) *Teamwork and multiprofessional training programmes in health sector in Yugoslavia*. In: *Multiprofessional education for health personnel in the European Region*. (J-F.d'Ivemois & V.Voradski, eds). Annex 11. Copenhagen, WHO.
- Kusumawati, W. & Orbayinah, S. (2015) Interprofessional education from pilot to formal curriculum. In: D. Forman, M. Jones & J. Thistlethwaite (eds) *Leadership and collaboration: Further developments for interprofessional education*. 29-46. Basingstoke: Palgrave Macmillan.
- Lam, W., Chan, E.A. & Yeung, K.S. (2013) Implications for school nursing through interprofessional education and practice. *Journal of Clinical Nursing* 22: 13-14
- Lamsa, A., Hietanen, I. & Lamsa, J. (1994) Education for holistic care: a pilot programme in Finland. *Journal of Interprofessional Care* 8(1): 31-44.
- Lamsa, A. (1999) *Holistic views and Strong Belief*. In: Pohjoinhen Strategia-Ja Taitopeli: Makemysykia Oulun Valiiaikaisesta Ammatikorkeakoulusta Vuosilta 1992-1996. Oulu Polytechnic, Finland.
- Lanara, V. (1986) *Multiprofessional training programmes and strategies for team training in Greece*. In : *Multiprofessional education for health personnel in the European Region*. (J-F. d'Ivemois & V.Voratski, eds). Annex 5. Copenhagen, WHO.
- Larivaara, P. & Taanila, A. (2004) Towards interdisciplinary Family-Oriented Teams in primary care: evaluation of a training programme. *Journal of Interprofessional Care* 18 (2): 153-62.
- Lazarus, J., Meservey, P., M. Joubert, R., Lawrence, G., Ngobeni, F. & September, V. (1998) The South African Community Partnerships: Towards a model for interdisciplinary health personnel education. *Journal of Interprofessional Care* 12 (3): 279-288.
- Leathard, A. (1996) The 17th Annual Interdisciplinary Health Care Team Conference. *Journal of Interprofessional Care* 10 (1): 73-74.
- Lee, A., Steketee, C., Rogers, G. & Moran, M. (2013) Towards a theoretical framework for curriculum development in health professional education. *Focus on Health Professional Education: a Multi-disciplinary Journal*, 14 (3): 64-77.

- Lee, B., Celletti, F., Makino, T., Matsui, H. & Watanabe, H. (2012) Attitudes of medical school deans toward interprofessional education in the Western Pacific region. *Journal of Interprofessional Care* 26 (6): 479-483.
- Loxley, A. (1997) *Collaboration in health and welfare: working with difference*. London: Jessica Kingsley Publishers.
- L-TIPP (2009) *Interprofessional health education in Australia: The way forward*. Learning and Teaching for Interprofessional Practice, Australia. Sydney: the University of Sydney and the University of Technology, Sydney.
- Mackay, L., Soothill, K. & Webb, C. (1995) Troubled Times: The context for interprofessional collaboration? In: *Interprofessional relations in health care* (K. Soothill, L. Mackay, & C. Webb, eds). London: Edward Arnold.
- Mahler, Berger, Karstens, Campbell, Roos, & Szecsenyi. (2014) Re-profiling today's health care curricula for tomorrow's workforce: establishing an interprofessional degree in Germany. *Journal of Interprofessional Care*, Early Online: 1–3. DOI: 10.3109/13561820.2014.979980
- Mahler, C., Karstens, S., Napiralla, D., Szecsenyi, J. & Goetz, K. (2013) Die Perspektive von Studierenden im Studiengang Interprofessionelle Gesundheitsversorgung. Eine qualitative Studie. Poster auf der Jahrestagung der Gesellschaft für Medizinische Ausbildung (GMA). Graz, 25.-27.09.2013. (<http://www.egms.de/en/meetings/gma2013/13gma057.shtml>)
- Makaram, S. (1995) Interprofessional cooperation. *Medical Education* 29: 65-69.
- Makino, T., Shinozaki, H., Hayashi, K., Lee, B., Matsui, H., Kururi, N., Kazama, H., Ogawara, H., Tozato, F., Iwasaki, K., Asakawa, Y., Abe, Y., Uchida, Y., Kanaizumi, S., Sakou, K. & Watanabe, H. (2012) Attitudes toward interprofessional healthcare teams: A comparison between undergraduate students and alumni. *Journal of Interprofessional Care* 26 (2): 100-107
- McCreary, J.E. (1964) The education of physicians in Canada. *Canadian Medical Association Journal* 90 (21): 1215-21.
- McMillan, M. Personal Communication. University of Newcastle, Australia.
- McNair, R., Brown, R., Stone, N., & Sims, J. (2001). Rural interprofessional education: promoting teamwork in primary health care education and practice. *Australian Journal of Rural Health*, 9 (Supplement 1), S19-S26.
- McNair, R., Stone, N., Sims, J., & Curtis, C. (2005). Australian evidence for interprofessional education contributing to effective teamwork preparation and interest in rural practice. *Journal of Interprofessional Care*, 19 (6): 579-594.
- Meads, G. & Ashcroft, J. with Barr, H., Scott, R. & Wild, A. (2005) *The case for Interprofessional collaboration in health and social care*. Oxford: Blackwell Sciences with CAIPE.
- Mining, S. (2014) Community development of interprofessional practice in Kenya. In: D. Forman, M. Jones, & Thistlethwaite, J. (eds) *Leadership development for interprofessional education and collaborative practice*. Basingstoke: Palgrave Macmillan 196-205
- Mortimer, E. (1979) *Interdisciplinary learning at the qualifying and post-qualifying stages*. In: Education for co-operation in health and social work: papers from the Symposium in Interprofessional Learning. (H. England, ed) University of Nottingham, July 1979. London: RCGP, op. cit.
- Nisbet, G., Hendry, G. D., Rolls, K., & Field, M. J. (2008). Interprofessional learning for pre-qualification health care students: an outcomes-based evaluation. *Journal of Interprofessional Care*, 22 (1): 57-68.
- Newman, F. (1971) (ed.) *Report on higher education*. US Government Printing Office, Washington D.C.
- Nicol, P. (2012) *Interprofessional education for health professions in Western Australia: Perspectives and activity: Final Report*. Sydney: University of Technology Sydney.
- Nielson, A, & Hamming, A. (2008) Multidisciplinary training, social workers, education, health professionals. *Journal of Interprofessional Care* 22 (2): 205-208.
- Nisbet, G., Thistlethwaite, J., Moran, M., Chesters, J., Jones, M., Murphy, K. & Playford, D. (2007) Sharing a vision for collaborative practice: The formation of an Australasian Interprofessional

- Practice and Education Network (AIPPEN). *Focus on Health Professional Education: A Multi-disciplinary Journal* 8 (3)
- O'Brien, D., Swann, J., & Heap, N. (2015). Can the communities of practice model explain the complex organization of an interprofessional student-led health clinic? *Journal of Allied Health*, (in press).
- O'Neil, E. H. (1993) *Health professions education for the future. Schools in service to the nation*. Pew Health Professions Commission. San Francisco, Pew Charitable Trust Foundation.
- O'Neil, E.H. and the Pew Health Professions Commission (1988) *Service-learning in health professions education*. San Francisco: Pew Health Professions Commission
- O'Keefe, M., Henderson, A. & Pitt, R. (2011) Learning and teaching academic standards statement for health medicine and veterinary science. Canberra: Australian Learning and Teaching Council.
- O'Keefe, M., Henderson, A., Jolly, B., McAllister, L., Remedios, L. & Chick, R. (2014) *Harmonising higher education and professional quality assurance processes for the assessment of learning outcomes in health - Final Report*. Canberra, Commonwealth of Australia, Office for Learning and Teaching
- Opina-Tan, L. A. (2013) A pilot implementation of interprofessional education in a community-academe partnership in the Philippines. *Education and Health* 26 (3):164-71.
- Organization for Economic and Cultural Development. (1977) *Health, higher education and the community – towards a Regional Health University*. Report of an International Conference. Centre for Educational Research and Innovation, Paris.
- Pacheco, L., & da Motta, L. (2014) Integrating medical and health multiprofessional residency programs: The experience in building an interprofessional curriculum for health professionals in Brazil. *Education and Health*. 27(1): 83-8.
- Pahor, M. (2008) Interprofessional relationships : doctors and nurses in Slovenia. In: Kuhlmann, E. & Saks, M. (eds.). *Rethinking professional governance: International directions in health care*. Bristol: Policy, 111-126.
- Pahor, M. & Rasmussen, B.H. (2009) How does culture show? A case study of an international and interprofessional course in palliative care. *Journal of Interprofessional Care*, 23 (5): 474-485.
- Pahor, M. (ed.) (2014) *Zavezniki za zdravje: medpoklicno sodelovanje v zdravstvenih timih / Partners for health: interprofessional collaboration in health care teams*. Ljubljana: Zdravstvena fakulteta.
- Pahor, M., Zakšek, T. & Vettorazzi, R. (2013) Developing interprofessional education in health and social care : the Slovenian experience. In: Pahor, M. & Vyt, A. (eds.). *Quality of life in health and social care: an interprofessional matter : programme book*. Ljubljana: European Interprofessional Practice and Education Network. (http://eipen.eu/doc/Program_book_EIPEN_conference_2013.pdf)
- Pan American Health Organization (1960) *Public Health Report*. 76 (12): 1097–1098.
- Paterno, E.R., Louricha, A. & Opina-Tan, L.A. (2014) Developing community-engaged interprofessional education in the Philippines. In: D. Forman, M. Jones & J. Thistlethwaite (eds) *Leadership development for interprofessional education and collaborative practice*. Basingstoke: Palgrave Macmillan
- Peduzzi, M., Norman, I.J., Germani, A.C.C.G., Marcelino da Silva, J. A. & Colebrusco de Souza, G. (2013) Interprofessional education: training for healthcare professionals for teamwork focusing on users. *Rev. esc. enferm. USP*. 47 (4) São Paulo.
- Penuela, M. (1999) The use of interdisciplinary/multiprofessional education within a community-based curriculum at the Universidad del Norte of Barranquilla, Columbia. Newsletter of the Network of Community-Oriented Educational Institutions for Health Sciences. 30.
- Pereira Gray, D. Goble, R. Openshaw, S. Bolden, K. Hall, M. Lewis, A. Jones, R. Scott, J. Hall, A. Damant, M. & Hunt, L (1993) Multiprofessional education at the Postgraduate Medical School, University of Exeter. *Annals of Community-Oriented Education* 6: 181-190.
- Peu, M.D., Mataboge, S., Chinouya, M., Jiyane, P., Rikhotso, R., Ngwenya, T, & Mulaudzi, F.M. (2014) Experiences and challenges of an interprofessional community of practice in HIV and AIDS in Tshwane district, South Africa. *Journal of Interprofessional Care*, 28 (6): 547-552.

- Piette, D. (1986) *Multiprofessional training in health education: the project of the Interuniversity Group for the French speaking area of Belgium*. In: Multiprofessional Education for Health Personnel in the European Region. (J-F.d'Ivernois & V.Voradski, eds. Annex 2. Copenhagen, WHO.
- Piggott, B. (1975). Multi-disciplinary teaching in the community care unit. R.P.A. Magazine (Winter Issue).
- Piggott, B. (1980) Interprofessional education. *PLET* 17 (3).
- Ponzer, S., Hylin, U., Kusoffsky, A., Lauffs, M. Lonka, K. Mattiasson, A-C., & Nordstrom, G. (2004) Interprofessional training in the context of clinical practice: goals and students' perceptions on clinical education wards. *Medical Education* 38 (7): 727-736.
- Reedy, B.L.E.C. (1980) Teamwork in primary care- a conspectus. In J. Fry (ed.). *Primary Care*. London: Heinemann
- Reedy, B.L.E.C., Barton, A.G., & Gregson, B.A. (1983). A review of British experience in teamwork for primary care. In: M.H. Schmitt & E.C. Hubbard, E.C. (eds.). *Interdisciplinary Health Team Care: Proceedings of the Fifth Annual Conference*. 285-305.
- Rendas, A.B. (1986) *Team training for health personnel in Portugal: an institutional point of view*. In: Multiprofessional education for health personnel in the European Region. (J-F. d'Ivernois & V.Voradski, eds). Annex 6. Copenhagen, WHO.
- Republic of South Africa. (1997). *General notice. Notice 667 of 1997. Department of Health. White paper for the transformation of the health system in South Africa*.
(http://www.gov.za/sites/www.gov.za/files/17910_gen6670.pdf)
- Republic of South Africa. (2007). *Act No. 22 of 2007: Traditional Health Practitioners Act, 2007*. Retrieved from <http://www.gov.za/documents/traditional-health-practitioners-act>
- Republic of South Africa. (2015). *Health*. Retrieved from (<http://www.gov.za/about-sa/health>)
- Richards, R.W. (1993) Community Partnership: redirecting health professions education towards primary healthcare. *Annals of Community-Oriented Education*, 6: 219-230.
- Rodger, S. & Hoffman, S. (2010) Where in the world is interprofessional education? A global environmental scan. *Journal of Interprofessional Care* 24 (5): 479-491.
- Rominow (2002) *The Royal Commission on the future of health care in Canada*. (www.hc.sc.gc.ca)
- Rubio-Gurung, S., Putet, G., Touzet, S., Gauthier-Moulinier, H., Jordan, I., Beissel, A., Labaune, J.M., Blanc.S., Amamra, N., Balandras, C., Rudigoz, R.C, Colin, C. & Picaud J.C. (2014) In situ simulation training for neonatal resuscitation: an RCT. *Pediatrics* 134 (3): 790-7.
- Schmitt, M. H. (1994) USA: Focus on interprofessional practice, education and research. *Journal of Interprofessional Care* 8(1): 9-18.
- Schmitt, M.H., Baldwin, D.C. & Reeves, S. (2011) Continuing interprofessional education: Collaborative learning for collaborative practice. In: D.K. Wentz (ed) *Continuing Medical Education: Looking back, planning ahead*. New England: Dartmouth College Press
- Scrooby, B. (2012). Practice model for interprofessional teaching-learning of anatomy at a higher education institution in South Africa. Unpublished thesis submitted in fulfillment of the requirements for the degree Philosophiae Doctor in the School of Nursing Science of North-West University (Potchefstroom Campus).
(http://dspace.nwu.ac.za/bitstream/handle/10394/8216/Scrooby_B.pdf?sequence=2)
- Schultz J-H, Berger S, Suchy D, Lauber D, Hermann K, Junger J, Mahler C. [Teaching team communication in interprofessional and monoprofessional groups: does it make a difference?] Poster at the anual conference of the "Gesellschaft für Medizinische Ausbildung" (GMA). Graz, 25.-27.09.2013. (<http://www.egms.de/en/meetings/gma2013/13gma058.shtml>)

- Secretary of State for Health (1997) *The New NHS: modern, dependable*. London, Department of Health.
- Seifer, S. & Maurana, C. (1998) Editorial. *Journal of Interprofessional Care*, 12 (3): 253-254.
- Shakespeare, H., Tucker, W. & Northover, J (1989) *Report of a national survey of interprofessional education in primary care*. London, CAIPE.
- Shigan, E. (1988) *Combination of mono- and multidisciplinary courses in dynamic postgraduate training system of physicians in the USSR*. In: Multiprofessional education for health personnel in the European Region. (J-F. d'Ivernois & V. Voradski, eds), Annex 10. Copenhagen, WHO.
- Siegler, E.L. Hyer, K. Fulmer, T. & Mezey, M. (1998) *Geriatric interdisciplinary team training*. New York: Springer Publishing Company.
- Singh, P., & Sachs, J. D. (2013). One million community health workers in sub-Saharan Africa by 2015. *The Lancet*, 382 (9889), 363–365.
- Smith-Tolken, A.R. (2010). Community engagement at a higher education institution: exploring a theoretical grounding for scholarly-based service-related processes. Unpublished thesis submitted in fulfillment of the requirements for the degree Philosophiae Doctor in Curriculum Studies at Stellenbosch University.
(https://scholar.sun.ac.za/bitstream/handle/10019.1/5162/smithtolken_community_2010.pdf?sequence=2&isAllowed=y)
- Snyman, S., Von Pressentin, K.B., & Clarke, M. (2015). International Classification of Functioning, Disability and Health: catalyst for interprofessional education and collaborative practice. *Journal of Interprofessional Care*. 1–7. Posted online on 23 Jan 2015.
- Stellenbosch University. (2015). *Faculty of Medicine and Health Sciences. Calendar 2015. Part 12*. (<http://www.sun.ac.za/english/layouts/15/WopiFrame.aspx?sourcedoc=/english/Documents/Yearbooks/Current/Medicine.pdf&action=default>)
- Spratley, J. (1990a) *Disease prevention and health promotion in primary health*. London: Health Education Council.
- Spratley, J. (1990b) *Joint planning for the development and management of disease prevention and health promotion strategies in primary health care*. London, Health Education Council.
- Stone, N. (2006). The Rural Interprofessional Education Project (RIPE). *Journal of Interprofessional Care*, 20 (1), 79-81.
- Storrie, J. (1992) Mastering interprofessionalism – an enquiry into the development of Masters programmes with an interprofessional focus. *Journal of Interprofessional Care* 6 (3): 253-260.
- Silva, J.A.M.d. (2014) Educação interprofissional em saúde e enfermagem no contexto da atenção primária. São Paulo: Universidade de São Paulo - USP
- Szas, G. (1969) Interprofessional education in the Health Sciences. *Milbank Memorial Fund Quarterly* 47: 449-475.
- Takahashi, H.E. & Kinoshita, M. (2015) Formation of the Japan Association for Interprofessional Education In: D. Forman, M. Jones & J. Thistelthwaite (eds) *Leadership and collaboration: Further developments for interprofessional education*. 47-70. Basingstoke: Palgrave Macmillan.
- Talaat, W., & Ladhani, Z. (Eds.). (2014). *Community based education in health professions: Global perspectives*. Cairo: World Health Organization Regional Office for the Eastern Mediterranean.
- Tarvainen, J. (2014) *Intercultural and Interprofessional Environment in the Social and Health Care Higher Education at Lahti University of Applied Sciences*. Lahti: Lahti University of Applied Sciences. *Creative Education*, 2014, 5, 1804-1811 Published Online November 2014 in SciRes.
- Tervaskanto-Mäentausta, T., Ojaniemi, M., Mikkilä, L., Laitila-Özcok, L., Niinimäki, M., Nordström, T., & Taanila, A. (2014). Collaborative Learning in Maternity and Child Health Clinics. *Creative Education*, 5, 1804-1811. <http://dx.doi.org/10.4236/ce.2014.520201>
- Tessendorf, K.E., & Cunningham, P.W. (1997). One person, two roles: nurse and traditional healer. *World Health Forum*, 18 (1):59-62.
- Thistelthwaite, J. (2013) Introducing the Global Research Interprofessional Network (GRIN). Editorial. *Journal of Interprofessional Care* 27 (2) 107-109

- Thistlethwaite, J. Barr, H. & Gilbert, J. (2011) Letter to the Editor. *The Lancet* April 2011
- Thompson, W. (1986) *Multiprofessional education for health professionals in the United Kingdom*. In: *Multiprofessional Education for Health Personnel in the European Region*. (J-F. d'Ivernois & V. Voradski, eds), Annex 9. Copenhagen, WHO.
- Thwaites, M. (1993) Interprofessional education and training: a brief history. *CAIPE Bulletin*, No 6. 2-3
- Tope, R. (1996) *Integrated interdisciplinary learning between the health and social care professions: a feasibility study*. Aldershot, Avebury.
- Training for Health Equity Network. (2011). *THENet's Social Accountability Evaluation Framework Version 1. Monograph 1. 1st ed.* (<http://www.thenetcommunity.org/files/articles/The%20Monograph.pdf>)
- Treadwell, I., Van Rooyen, M., Havenga, H., & Theron, M. (2014). The effect of an interprofessional clinical simulation on medical students. *African Journal of Health Professions Education*, 6 (1): 4-5.
- G. Tsakitzidis, G. & Van Royen, P. (2008) *The growth of IPE in the Antwerp Higher Education area*. EIPEN international workshop on Interprofessional Education, University of Gent 24/25 October 2008
- Tudico, C. & Thibault, G. E. (2012). *The History of the Josiah Macy Jr. Foundation*. New York: Josiah Macy Jr. Foundation.
- UNI Letter (1999) W.K. Kellogg Foundation. Temuco, Chile. Year 5. Number 16.
- Van Amsterdam, L. & Bruijnzeels, M. (2012) Interprofessional education: a vital concern and a lever to better primary care: Position paper on interprofessional education. *Quality in Primary Care*, 20: 239-241.
- University of KwaZulu-Natal. (2014). *Health professionals unite for interprofessional education and collaborative practice*. (<http://www.ukzn.ac.za/news/2014/11/10/health-professionals-unite-for-interprofessional-education-and-collaborative-practice>)
- Vanclay, L. (1995) International developments. *CAIPE Bulletin* 9: 8-9.
- Van Heerden, B. (2013). Effectively addressing the health needs of South Africa's population: The role of health professions education in the 21st century. *South African Medical Journal*, 103 (1): 21-22.
- Viana da Costa, M., Vilar, M.J., Dantas de Azevedo, G. & Reeves, S. (2014) Interprofessional education as an approach for reforming health professions education in Brazil: emerging findings. *Journal of Interprofessional Care* 28 (4): 378-379.
- Vinal, D. (1987) Interdisciplinary health care team care: nursing education in rural health settings. *Journal of Nursing Education*, 26 (6): 258-259.
- Vyt, A. (2009). *Exploring quality assurance for interprofessional education in health and social care*. Antwerp: Garant publishers.
- Vyt, A. (2015). Interprofessional practice and collaborative practice in health and social care: The need for transdisciplinary mindsets, instruments, and mechanisms. In P. Gibbs (ed) *Transdisciplinary professional learning and practice* 69-88. Springer International Publishing.
- Waggie, F., & Laattoe, N. (2014). Interprofessional exemplars for health professional programmes at a South African university. *Journal of Interprofessional Care*, 28 (4): 368-370.
- Wagner, C (1997) Germany explores scope for interprofessional education (a conference report). *Journal of Interprofessional Care*. 11 (1): 110-111.
- Walkenhorst, U., Mahler, C., Aistleithner, R., Hahn, E.G., Kaap-Fröhlich, S., Karstens, S., Reiber, K., Stock-Schröer, B. & Sottas, B. (2015) Interprofessional Education for the Health Care Professions: Position statement GMA Committee. *GMS Zeitschrift für Medizinische Ausbildung* 32(2)
- Walton, H.J. (1995) Multidisciplinary education. *Medical Education* 29: 329-331.
- Watanabe, H. & Koizumi, M. (2010) *Advanced initiatives in interprofessional education in Japan*. Tokyo: Springer
- Wilbur K., Hasnani Samnani, Z. & Kelly I. (2015) Interprofessional Education Activity Among Undergraduate Nursing and Pharmacy Students in the Middle East. *Nurse Educator* 26 January 2015. 0363-3624

Wilbur, K. & Kelly, I. (2015) Interprofessional impressions among nursing and pharmacy students: a qualitative study to inform interprofessional education initiatives. *Medical Education* 15 (53)

Wilby, K., Al-Abdi, T., Hassan, A., Brown, M.A., Paravattil, B. & Khalifa, S. (2015) Attitudes of pharmacy and nutrition students towards team-based care after first exposure to Interprofessional education in Qatar. *Journal of Interprofessional Care* 29 (1) 82-4.

Wilcock, P.M., & Headrick, L.A. (2000) Interprofessional learning for the improvement of health care: why bother? *Journal of Interprofessional Care* 14 (2), 111-117

Wistow, C., Usher-Patel, M., Fusco, C., Richey, C. & Yan, J. (2010) *How can interprofessional collaboration contribute to better health outcomes? Results of an explorative virtual global discussion forum*. Geneva: WHO (unpublished)

World Federation for Medical Education (1988) The Edinburgh Declaration. The *Lancet*, ii: 464.

World Federation for Medical Education (1994) Proceedings, World Summit on Medical Education, Edinburgh, 8-12 August 1993. *Medical Education* 28, (Supplement 1).

WHO (1973) *Continuing education for physicians*. Technical Report Series No. 534. Geneva, WHO.

WHO (1976) *Health manpower development Doc/A29/15*. (unpublished) Presented to the 29th World Health Assembly. Geneva: WHO.

WHO (1978) *The Alma Ata Declaration*. Geneva, WHO.

World Health Organization (1987) *Innovative tracks at established institutions for the education of health personnel: an experimental approach to change relevant health*. WHO Offset. Publication No. 101. Geneva, WHO.

WHO (1988) *Learning together to work together for health*. Technical Report No. 769. Geneva: WHO

WHO (2001). *International Classification of Functioning, Disability and Health*. Geneva, WHO.

WHO (2006) *The World Health report 2006: Working together for health*. Geneva, WHO.

WHO (2010) *Framework for action on interprofessional education & collaborative practice*. Geneva: WHO

WHO (2013a) Transforming and scaling health professionals' education and training. WHO Education and Training Guidelines 2013. Geneva: WHO.

WHO (2013b) Interprofessional Collaborative Practice in Primary Health Care: Nursing and Midwifery Perspectives Six Case Studies. *Human Resources for Health Observer Issue* No. 13. Geneva, WHO

Zananzadeh, V., Irajpour, A., Valizadeh, L. & Shoman, M. (2014) The meaning of collaboration from the perspective of Iranian nurses: A qualitative study. *The Scientific World Journal* ID 785942

Ziai, M., Dehgan, F., Mostafavi, R., Barakat, R., Sadre, M., Fendall, R., Gharib, N. & Stang, J.C. (1976) Curriculum for the New College of Health Sciences: A Departure from the Traditional Medical Education. *Pahlavi Medical Journal*. 7: 529-539.

Zwarenstein, M., Goldman, J. & Reeves, S. (2009) *Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes*. (Review) The Cochrane Library