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CENTRE FOR CLINICAL GOVERNANCE RESEARCH

RESEARCH INSTRUMENTS USED IN STUDIES RELATED TO INTER-PROFESSIONAL LEARNING



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Contents

1	Introduction	2
2	Methods	2
	2.1 Literature review process	2
	2.2 Search strategies	2
	2.2.1 Search strategy 1: database searches	3
	2.2.2 Search strategy 2: screening of results	4
	2.2.3 Search strategy 3: further refinement	5
3	Analysis of results	5
4	Findings and discussion	6
	4.1 Tools and methods used in studies	6
	4.2 Sources of IPL methods and tools	8
	4.3 Focus of tools and methods used in studies	9
	4.4 Impact of tools and methods adopted	9
5	Conclusion	10
6	References	10
7	Citations and abstracts	15
8	Appendices	55
	8.1 Appendix 1: Research instruments from Journal articles cited as at July 2007	55
	8.2 Appendix 2: Main purpose for research tools and methods identified	57

1. Introduction

The purpose of this literature review is to identify research tools and methods associated with inter-professional learning (IPL) and inter-professional practice (IPP). We sought to examine the kinds of research approaches used by IPL researchers. The aim was to compile a body of research instruments for future work on IPL projects. The review complements the literature reviews of Braithwaite and Travaglia (2005a; 2005b; 2005c; 2005d).

2. Methods

2.1 The literature review process

The period covered in this literature review is 2005 to July 2007. However, as the aim of the review was primarily to identify IPL and IPP tools, earlier literature was also scanned. As a result, a small number of works referred to in this report fall outside this period but were deemed relevant enough to include (eg. Cashman and Reidy 2004; D'Armour and Moreault, 2002; Hind and Norman 2003; Hojat and Nasca 2001; Kennard 2002; Lathlean and LeMay 2002; Mackay 2004; Mu and Chao, 2004; Sicotte, D'Armour and Moreault 2002; Pollard and Miers 2004).

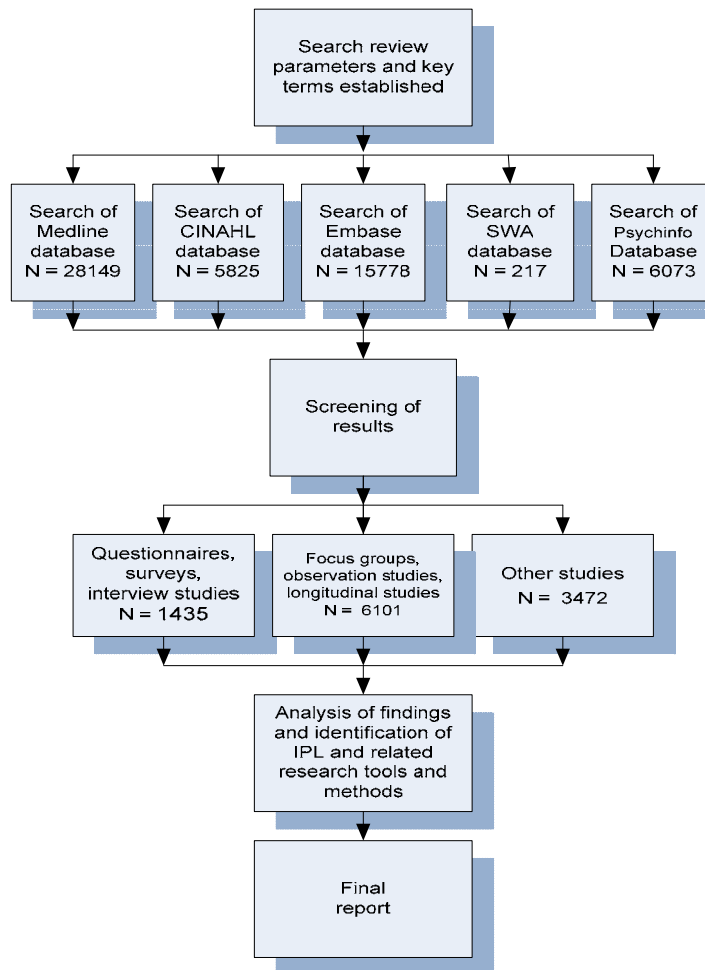
A multi-method approach was used to identify research tools and methods in the literature. Figure 1 on the following page provides a schematic diagram of the search process undertaken. It illustrates the nature of the strategies used in conducting the search and methods used to refine and analyse the literature.

2.2 Search strategies

Using the database interrogation model established by Braithwaite and Travaglia (2005a), the following key database search terms were selected as exhibited in Table 1. Omitted from the search terms were the words 'education' and 'clinical placement'. These terms were germane to the 2005 literature review of Braithwaite and Travaglia which covered these topics, but not the present study. As noted by Braithwaite and Travaglia (2005a), the term inter-professional and its synonyms is broad and requires searching under a variety of inter-related terms as indicated below.

Table 1: Search terms for IPL and IPP

1	Interprofessional
2	Interdisciplinary
3	Interoccupational
4	Interinstitutional
5	Interagency
6	Interdepartmental
7	Intersectoral
8	Interorganisational
9	Interprofessional relations
10	Multiprofessional
11	Multiagency
12	Multidisciplinary
13	Multiinstitutional
14	Multisectoral
15	Multiorganisational
16	Team

Figure 1: The literature review process**Keys to terms used in Figure 1.**

Medline = medical database
 CINAHL = nursing and allied health database
 Embase = medicine and health sciences database
 SWA = social work abstracts database
 Psychinfo = psychology database

2.2.1 Search strategy 1: database searches

Five databases were systematically searched to locate published literature relating to IPL and related search tools and methods. These were: Medline (medicine), Embase (medicine and health services), CINAHL (nursing and allied health), SWA (social work abstracts), PSYCHINFO (psychology). The symbol '\$' denotes truncation of the word in the databases searched. Variations in spelling were also considered. For example interprofessional can be found as one word, two words (inter professional) or as a hyphenated word (inter-professional). In using prefixes the two prefixes 'inter' and 'multi' were used to ensure coverage of the literature. References were downloaded to Endnote version X.02, a bibliographic software package. The numerical results of the database searches are provided in Table 2.

Table 2: Results of database searches

	Term	Numbers of articles found in databases					
		MEDLINE	EMBASE	CINAHL	SWA	PSYCHINFO	COMBINED
1	Inter-profession\$ or interprofession\$	3750	80	2545	9	198	6582
2	Inter-disciplin\$ or interdisciplin\$	2697	2360	938	42	2790	8827
3	Inter-occupation\$ or interoccupation\$	1	1	0	0	0	2
4	Inter-institut\$ or interinstitut\$	1033	43	840	0	8	1924
5	Inter-agen\$ or interagen\$	139	139	95	12	1	386
6	Inter-department\$ or interdepartment	97	38	50	0	8	193
7	Inter-sector\$ or intersector\$	78	80	27	2	25	212
8	Inter-organisation\$ interorganisation\$	10	10	8	1	15	44
9	Inter-organization\$ interorganization\$	33	32	22	8	119	214
10	exp Interprofessional relations	4812	193	0	8	0	5013
11	Multi-profession\$ or multiprofession\$	129	131	52	2	32	346
12	Multi-agenc\$ or multiagenc\$	60	41	47	7	76	231
13	Multi-disciplin\$ or multidisciplin\$	4317	4500	125	30	1721	10693
14	Multi-institut\$ or multiinstitut\$	810	424	28	0	17	1279
15	Multi-sector\$ or multisector\$	85	73	10	0	21	189
16	Multi-organisation\$ multiorganisation\$	1	1	0	0	0	2
17	Multi-organization\$ multiorganization\$	14	14	14	0	4	46
18	Team\$	10083	7618	1024	96	1038	19859
	TOTALS	28149	15778	5825	217	6073	56042

2.2.2 Search strategy 2: screening of results

Duplicates were removed and a screening process conducted of the 56,042 combined references found. Three categories were identified: questionnaires, surveys and interviews; focus groups, observation studies and longitudinal studies; and other studies. Table 3 shows the numbers of references found for the three categories.

Table 3: Screening of results

Categories	Questionnaires, surveys, interviews	Focus groups, observation studies, longitudinal studies	Other Studies	Combined Results
References	1435	6101	3472	11008

2.2.3 Search strategy 3: further refinement

Data were combined and collapsed further using the sub-category search terms: interprofessional, interdisciplinary and multidisciplinary. From the total of 11008 references, 504 abstracts were extracted for review, based on reference to IPL and IPP. The abstracts were extracted according to the nature and scope of the research conducted and their relevance to IPL related research tools and methods. Abstracts reporting on evaluations of research were generally excluded. Purely clinical studies were excluded as were studies in specific clinical areas such as anaesthetics, orthopaedics, obstetrics and intensive care.

3. Analysis of results

We analysed the 504 abstracts and found 42 research tools and methods. They are listed as Table 4 and categorised accordingly. Where a combination of instruments has been used in studies each box is checked. An expanded version of Table 4 includes additional details, and is provided as Appendix 1.

Table 4: Research tools and methods identified from journal articles cited as at July 2007

Description, author and year	Methods	Tools
Attitudes to Health Professionals Questionnaire (Lindqvist et al. 2005)		√
Bales Interaction Process Analysis Tool (Atwal and Caldwell 2005)	√	
Barnes Stereotyping Tool (Hean et al. 2006)		√
Barr categorisation of IPE models (McNair et al. 2005)		√
Campbell's Phased Approach (Cooper and Spencer-Dawe 2005)	√	
Collaboration and Satisfaction About Care Decisions Scale (Russell et al. 2006)		√
Communication and Teamwork Scale (Pollard, Miers and Gilchrist 2005)		√
Communities of Practice (Lathlean and May 2002)	√	√
Complexity Theory (Cooper et al. 2005)	√	√
Convergent Interviewing Technique (Driedger et al. 2006)		√
Crew Resource Management CRM (Schmitt 2006)		√
Degeling et al. Questionnaire on Professional Subcultures (Horsburgh et al. 2006)		√
Delphi Technique (Bray and Hawkins 2006)	√	
D'Eon's Frameworks for IPE (D'Eon 2005)	√	
Diffusion of Innovation Framework (Rodehorst et al. 2005)	√	
Downstate Team Building Initiative (Hope et al. 2005)	√	√
Entry-Level Interprofessional Questionnaire (ELIQ) Interim (IIQ), Final (FPQ) (Pollard et al. 2006)		√
Felsher and Ross Survey (Insalaco and Ozkurt 2006)		√
Generic Role Perception Questionnaire (Mackay 2004)		√
Group Emotional Intelligence Questionnaire (Amundson 2005)		√
Health Care Stereotypes Scale (Hind et al. 2003)		√
Healthy Teams Model (Mickan and Rodger 2005)	√	
Inter-professional Education Perception Scale (Mu et al. 2004)		√
Interprofessional Interaction Scale (Pollard et al. 2004)		√
J Richard Hackman's Framework on team effectiveness (Martin 2006)	√	
Jefferson Scale of Attitudes Towards Physician Nurse Collaboration (Hojat et al. 2001)		√

Kirkpatrick Barr et al Framework (Carpenter et al. 2006)	√	
Kirkpatrick's Model of Educational Outcomes (Oandasan and Reeves 2005)	√	
Martin's Framework of Culture	√	
Moos and Schaefer Organisational Climate Questionnaire (Kennard 2002)		√
Nursing Role Perception Questionnaire (Mackay 2004)		√
Patchwork Text (Crow et al. 2005)	√	√
Professional Identity Scale (Hind et al. 2003)		√
Quebec Community Health Care Centre Model (Sicotte, D'Armour and Moreault 2002)	√	
Reflective Analysis and Team Building Guide (Mickan and Rodger 2005)	√	√
Readiness for Interprofessional Learning Scale (McFadyen et al. 2006)		√
Rokeach Value Survey (Ledbetter 2006)	√	√
Schwartz 2 Dimensional Model of Value Domains (Ledbetter 2006)		
System for the Multiple Level Observation of Groups (Cashman and Reidy 2004)	√	√
Grounded Theory Analysis (Barker, Bosco and Oandasan 2005)	√	√
Teamwork in Healthcare Inventory (Mickan, Rodger and Moreault 2005)	√	√
The Contact Hypothesis (Hean and Dickinson 2005)	√	
Tuckman's 4 Stage Team Development Stages (Hope et al. 2006)	√	√

The tools and methods shown in Table 4 include action research models, frameworks and approaches, classifications and scales, survey and questionnaire designs, and observation methods and techniques. An analysis of the main purpose of these tools and methods was conducted yielding six categories. They are: attitudes and perceptions; communication; decision making; education and learning; groups, teams and collaboration and practice, climate and values. Details are presented in Appendix 2.

4. Findings and discussion

The range of tools and methods identified in the literature pertaining to IPL related studies is discussed below. Following this is an analysis of the sources of the instruments employed and the focus and impact of the use of these instruments in studies.

4.1 Tools and methods used in studies

The literature search focused on studies conducted mainly in health care settings. A high proportion of the studies were of a qualitative nature. Methods and tools used varied in terms of their design, scope and other properties.

Many studies drew on the findings from focus groups to determine perceptions of, and attitudes towards, IPL. In some cases focus groups were conducted prior to developing survey questionnaires. Cashen et al. (2006) used focus groups involving nurse informatic experts before developing a national survey about perceptions of acute care providers across the United States. Carlisle and Cooper (2004) explored the feasibility of introducing IPE for undergraduate health professionals using data from focus group discussions as did Fitzgerald and Teal (2003) in their research on the changing IPL relationships between doctors and nurses. Kyrkjebo and Brattebo (2006) tested a simulated training programme for inter-professional student teams and evaluated it with follow-up focus groups. Varga-Atkins and Cooper (2005) conducted focus groups to develop part of the content for an IPE evidence based course for first year medical and health undergraduates. An iterative process of peer feedback and review using the Patchwork Text, a form of teaching, learning and assessment, was provided in Crow and Smith's (2005) research

method for a small study to explore its potential for facilitating inter-professional collaboration. Feedback was reported through open-ended questionnaires and focus group discussions.

In some studies multi-method designs incorporated two or more tools. For example, Braithwaite and Westbrook's (2005) ethnographic study of culture in two large Australian hospitals used comparative observational studies and questionnaires in their survey of clinical directorate service structures. Tse and Iwashita's (2006) multiple method approach included focus groups and surveys in the development of a competence based curriculum for multiprofessional education for student health professionals. In seeking to demonstrate the benefit of teams, Eskelen and Caswell's (2006) multimethod approach to their study included a video vignette as well as focus groups to compare the assessment of clients between social worker teams.

Few longitudinal studies were identified which directly related to IPL and IPP. Cashman and Reidy (2004) used SYMLOG, a system for multiple level observation groups, as an assessment measurement to explore team functioning in primary care settings. Their longitudinal study was directed at collaborative, integrated, interdisciplinary health care teams. Questionnaires developed by Pollard et al. (2005, 2006) were used in a longitudinal study of undergraduate health and social care students for a comparison of inter-professional perceptions and working relationships in the different groups. The inter-professional questionnaires developed were for entry-level, interim level and final level of study. Hope and Lugassy (2005) evaluated the impact of the three year, Downstreet Team Building Initiative (DTBI), described as 'a model multicultural and interdisciplinary healthcare team-building program for health professions students.' Tuckman's four, team development stages formed the method by which students self-evaluated the group's progress towards being united students.

Questionnaires were used in many studies, typically as semi-structured, structured or open ended instruments. Responses were ranked according to scales such as the Likert Scale. A revised version of the The Readiness for Interprofessional Learning Scale, first published by Parsell and Bligh (1999) was used by McFadyen and Webster (2006) for their study of undergraduate health care students while Reid et al. (2006) validated its use with postgraduate health care professionals. The Jefferson Scale of Attitudes was employed by Hojat et al. (2001) in their study focusing on collaboration between doctors and nurses.

Curran and Deacon's (2004) web-based questionnaire was designed to determine attitudes towards inter-professional teamwork and IPE among academic administrators involved in post secondary health and allied health educational programmes. The effectiveness of health and human service teams was studied by Amundson (2005) using the Group Emotional Intelligence Questionnaire for determining interaction levels and relational norms. Horsburgh and Perkins (2006) used a questionnaire based on that of Degeling et al. (1999) to study professional subcultures within the health system. Hind et al (2003) conducted a questionnaire based survey of the attitudes and perceptions of 933 undergraduates towards their own, as well as other professional groups. Lindqvist and Ducan et al (2005) developed the The Attitudes Towards Health Professional Questionnaire, a tool designed to investigate inter-professional attitudes in health professionals. Insalaco et al. (2006) administered the Felsher Ross survey tool to final year allied health students to explore their attitudes towards, and knowledge of, future colleagues.

Ledbetter (2006) used the Schwartz 2-dimensional model of value domains to analyse findings from the Rokeach demographic value survey to look at the theoretical intersection between values and leadership. While this was applied in a management setting, it may have application to IPL research. Open ended interviews with health professionals from a range of disciplines were conducted by McGrath et al. (2006) in their examination of the nursing profession interface with other disciplines. The convergent interviewing method, more commonly used in marketing research, was adapted by Driedger and Gallois (2006) as a technique for finding common ground in multi-disciplinary research projects.

The absence of a theoretical framework to guide the development of IPE is noted by Cooper and Spencer-Dawe (2005) and others. This is recognised by D'Eon (2005) in his paper which reports on an approach to IPL using two frameworks; the first based on the progressive complexity of IPE and the second, on cooperative learning within the experiential learning process. More typically, frameworks identified were used to assess or analyse outcomes from studies. Rodehorst and Wilhelm (2005) in their study of interdisciplinary learning and its effectiveness used Roger's Diffusion of Innovation framework to explore how different clinical settings affect the way meaning is constructed. Carpenter et al. (2006) employed the Kirkpatrick Barr framework to assess outcomes from a study of post graduate multidisciplinary IPE programs and J. Hackman's Framework on team effectiveness was employed by Martin (2006) to analyse data from a multiple case study design. Although the work related to medical library settings it could be adapted for use in assessing IPL teams. Hean and Dickinson (2005) applied The Contact Hypothesis, a theoretical framework, to look at the short term impact of IPE on a student population. Their work includes a description of the theory and its usefulness for further IPE research. In evaluating the impact of IPE on a large group of 500 undergraduates in a range of health disciplines, Cooper and Spencer-Dawe (2005) applied Campbells' Phased Approach and Complexity theory in developing and evaluating their study on an IPE intervention. Schmitt (2006) drew on Crew Resource Management theory for developing teaching approaches to patient safety to small Interprofessional groups of learners. Elston and Holloway (2001) used the grounded theory approach of Strauss and Corbin (1998) to examine the separate ideologies and subcultures of GPs, nurses and managers and the effect of this on influencing their perceptions of primary care reforms.

4.2 Sources of IPL tools and methods

The majority of the research instruments identified came from the health sector. A small number originated in other fields such as management (Scherpereel 2006) and aviation (Schmitt 2006).

From the literature searched major contributors to IPL studies are from the fields of medical education (eg, Curran, Deacon and Fleet 2005; Harwood and Tresolini 2006; Hean and Dickinson 2005; Mattick and Bligh 2005; Russell et al. 2006; Zwarenstein and Reeves 2006), nursing (eg, Brooker and Curran 2006; Cooper and Spencer-Dawe 2005; D'Amour and Oandasan 2005; Rodehorst, Wilhelm and Jensen 2006); and health sciences (eg, Adams et al. 2006; Atwal and Caldwell 2005; Mickan and Rodger 2005; Odegard 2005; Pollard, Miers and Gilchrist 2005; Salvatori, Berry and Kevin 2007).

Surveying the countries of origin of the literature, most work comes from the UK (Carpenter and Barnes 2006; Hean and Clark 2006; Hean and Dickinson 2005; Lindqvist et al. 2005; Morrison 2006; Parsell and Bligh 2005; Pollard, Miers and Gilchrist, 2005, 2006; Priest and Sawyer 2005; Reid et al. 2006; Stew 2005), Canada (Brooker and Curran 2006; Brooker et al. 2005; Curran, Deacon and Fleet 2005; D'Amour et al. 2005; D'Armour and Oandasan 2005; D'Eon 2005; Driedger et al. 2006; Oandasan 2005; Salvatori, Berry and Kevin 2007; Zwarenstein and Reeves, 2006), the United States of America (Amundson 2005; Clark, 2006; Hojat et al. 2003; Rodehorst et al. 2005; Vazirani, Hays, Shapiro and Cowan 2006), Australia (Braithwaite and Travaglia 2005a, 2005b, 2005c, 2005d, 2005e, 2005f; Braithwaite and Westbrook 2005; Long, Forsythe, Iedema and Carroll 2006; McNair et al. 2005; Mickan and Rodger 2005), and Scandinavia (Odegard 2005; Poulsen and Pederson 2007).

From the publications searched, the *Journal of Interprofessional Care* is the pre-eminent journal in the field eg, (Barker, Bosco and Oandasan 2005; Carpenter et al. 2006; Cashman and Reidy 2004; Cooper and Spencer-Dawe 2005; D'Eon 2005; Hean et al. 2006; Hean and Dickinson 2005; Hind et al. 2003; Horsburgh et al. 2006; Lindqvist et al. 2005; Mackay 2004; McFadyen et al. 2006; McNair et al. 2005; Mickan and Rodger 2005; Oandasan and Reeves 2005;.Russell et al. 2006).

4.3 Focus of tools and methods used in studies

The literature confirms that certain areas of health service delivery are more inclined than others towards team approaches to health care: mental health (Carpenter et al. 2006), primary care (Bray and Howkins 2006; Elston and Holloway 2001; Meads et al. 2006; Pearson and Pandya 2006), community care (Poland et al. 2005) and allied health (Eskelinen and Caswell 2006) are frequently mentioned.

Numerous studies have reported on the perception of, and attitudes towards, different health professionals in a range of settings before, during or after professional education (Adams et al. (2006); Hean and Clark 2006; Mickan and Rodger 2005; Pollard and Miers 2006). These include student attitudes towards the effectiveness of problem based IPL (Goelen and DeClercq 2006; Lindqvist et al. 2005; Barker and Oandasan 2005) and communication and collaboration (Priest et al. 2005; Vazirani, and Hays et al. 2005).

Relevant literature addressing faculty development and inter-professional learning, sometimes referred to as interprofessional education (IPE), includes the work of Steinert (2005); and in curriculum setting for multidisciplines (Tse et al. 2006; and Verna et al. 2006). The focus of the latter study was the amalgamation of core competencies for health professionals across four disciplines. The work of Mead et al. (2006) spanning sixteen countries includes *inter alia* developing national frameworks for IPE.

The literature on IPL also includes studies on shared understanding and collaboration (Reeves and Lewin 2004) and emotional intelligence (Amundson 2006). Apart from the work of Braithwaite and Westbrook 2005, Kennard 2002, and Horsburgh and Perkins 2006, little work is reported on the cultural aspects of IPL.

4.4 Impact of tools and methods adopted

In terms of the effects of IPL on patients and patient safety, studies have looked at IPE for patient centred care (D'Amour and Oandasan 2005, and Oandasan and Reeves 2006), IPL and patient safety (Schmitt 2006), the cost of patient centred care teams (Ettner and Kotleman 2006) and patient satisfaction and quality of care (Vazirani et al. 2005). From the US Military Health System, the work of Alonso et al. (2006) focuses on the reduction of medical errors through team training on patient safety.

Areas of interest emerging include legal aspects such as statutory requirements relating to inter-professional learning and practice (Lahey and Currie 2005) Mallik and McGowan 2007; Lathlean and LeMay 2007), the levels of senior non-clinical management support, academic administrators and the involvement of medical staff in IPL (Reeves et al. 2006; Curran, Deacon and Fleet 2005), the ongoing development of e-learning (Varga-Atkins and Cooper 2005) and the continued refinement of simulated learning (Kyrkjebo et al. 2006, and Rodehorst et al. 2005).

The effects of differing professional cultures and barriers to integrated learning and working are frequently cited. For example, the practical constraints of IPL in hospital wards (Russell et al. 2006), the difficulties of interdisciplinary health professional programmes in higher education and the requirement for more evidence based education (Cooper and Spencer-Dawe 2006). For improvements to occur, the need to go beyond one level of culture, taking into account leadership, structure, communication, change, finances and the way staff are mobilised is also recognised (Braithwaite and Westbrook 2005). Other barriers concern the nature of some professions resulting in the use of terms such as professional turf (Anderton 2005), professional dominance (Long et al. 2006) and medico-centrism (McGrath et al.2006).

A degree of pessimism continues to exist about the prospects of achieving major progress in IPL and inter-professional practice. Despite the pessimism, there is strong support for IPL in the literature. This support is based on the conviction that IPL will lead to better health service

delivery. A common theme in the literature signals the message that to achieve better health service delivery there needs to be greater collaboration and respect between health professionals. This collaboration embraces both learning and practice.

5. Conclusion

From the literature, evidence of the support for IPL is borne out by the range of methods and tools available for further IPL research. Most of the instruments identified in this report relate to research of a qualitative nature. The size, scope and length of proposed studies and available resources are among factors likely to determine the choice of instrument used.

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7. Citations and abstracts

QUESTIONNAIRES, SURVEYS, INTERVIEWS – MULTIPROFESSIONAL, INTERPROFESSIONAL, MULTIDISCIPLINARY

Adams, K. Hean, S. Sturgis, P. Clark, J. M. (2006) Investigating the factors influencing professional identity of first-year health and social care students. *Learning in Health and Social Care*, Volume 5, Number 2, June 2006, pp. 55-68(14). Interprofessional education (IPE) involves students from different professions being brought together to learn about each other's profession. Several models of IPE exist, and central to the debate around which of these models is the most appropriate is the question of the stage of training in which to implement these programmes. Currently, however, there is no consensus on this question. Debate so far has revolved around the strength of professional identities, or lack thereof, amongst pre-qualifying students and how this may influence interprofessional learning. The potential role of professional identity in IPE seems to be unresolved. The present article adds to this debate by investigating the level of professional identity when students commence their professional studies; the differences in the level of professional identity between students from a range of professions; and the factors which may affect the initial levels of professional identification. Data were collected by questionnaire from the first-year cohort of Health and Social Care (H&SC) students embarking on IPE as an embedded part of an undergraduate pre-qualifying programme. A sample of 1254 students was achieved. Professional identity was measured using an adaptation of a previously described scale. Our findings suggest that a degree of professional identity is evident before students begin their training. Differences in strength of initial professional identity were observed across professions, with physiotherapy students displaying the highest levels of professional identification. To test for associations between professional identity and a number of independent variables, an ordinary least squares (OLS) regression model was estimated. The variables that were found to be significant predictors of baseline professional identity were: gender; profession; previous work experience in H&SC environments; understanding of team working; knowledge of profession; and cognitive flexibility. Some explanations for these findings are presented and the implications are discussed.

Barker, K. Bosco, C. Oandasan, I. (2005) "Factors in implementing interprofessional education and collaborative practice initiatives: Findings from key informant interviews." *Journal of Interprofessional Care* 19(Suppl1):166-176. Health Canada (the federal government department in Canada responsible for health issues) commissioned a research team to conduct an environmental scan and research report in order to understand interprofessional education and collaborative patient-centred practice (IECPCP). This paper presents the findings from semi-structured telephone interviews with key informants conducted as part of the environmental scan. Grounded theory analysis was employed in order to identify factors associated with interprofessional education and collaborative practice initiatives. These factors were grouped according to the following themes: lack of consensus regarding terminology; the need for both champions and external support; sensitization to the effects of professional culture, and logistics of implementation. Findings are discussed related to the literature and to the other papers included in this supplement to the *Journal of Interprofessional Care*.

Bray, Julia; Howkins, Elizabeth. (2006). "Facilitating interprofessional learning in the workplace: a research project using the Delphi technique." *Workplace Training in Primary Care* 4(3):223-235.

Multiprofessional teamwork and the development of interprofessional learning (IPL) figure prominently in current policy documents, from both government and professional bodies in the UK. The literature on IPL strongly supports the view that by learning together, professionals should be able to work together collaboratively, thus enhancing the quality of service provision and client outcomes. Daily work-based practice in primary health and social care offers many opportunities to promote learning, which aims to improve interprofessional work. However, expert practitioners with little or no educational preparation to facilitate IPL often run these sessions. A view that is supported through anecdotal evidence, suggests practitioners often feel ill-equipped for their role as facilitators, and that participant feedback shows poor facilitation can affect the quality of shared learning. This research study was designed to explore the facilitation skills and knowledge needed to promote effective IPL in the workplace. A Delphi survey was carried out to explore whether there are additional skills and methods required to promote effective IPL. The main findings of the study showed that IPL facilitators require advanced and in-depth skills similar to those necessary to facilitate other complex diverse groups.

Carpenter, J., Barnes, D., et al. (2006). "Outcomes of interprofessional education for community mental health services in England: the longitudinal evaluation of a postgraduate programme." *Journal of Interprofessional Care* 20(2): 145-161.

We report a comprehensive, longitudinal evaluation of a two-year, part-time postgraduate programme designed to enable health and social care professionals in England to work together to deliver new community mental health services, including psychosocial interventions (PSIs). The study tracked three successive cohorts of students (N = 111) through their learning. Outcomes were assessed according to the Kirkpatrick/Barr et al. framework using a mixed methodology, which employed both quantitative measures and interviews. The students evaluated the programme positively and appreciated its focus on interprofessional learning and partnership with services users, but mean levels of stress increased and almost one quarter dropped out. There was considerable evidence of professional stereotyping but little evidence of change in these during the programme. Students reported substantial increases in their knowledge and skills in multidisciplinary team working and use of PSIs ($p < 0.001$). Experiences in the implementation of learning varied; in general, students reported significantly greater role conflict ($p = 0.01$) compared to a sample of their team colleagues (N = 62), but there was strong evidence from self-report measures ($p < 0.001$) and work-place interviews that the students' use of PSIs had increased. Users with severe mental health problems (N = 72) randomly selected from caseloads of two cohorts of students improved over six months in terms of their social functioning ($p = 0.047$) and life satisfaction ($p = 0.014$). Having controlled statistically for differences in baseline score, those in the intervention (programme) group retained a significant advantage in terms of life skills ($p < 0.001$) compared to service users in two non-intervention comparison groups (N = 133). Responses on a user-defined measure indicated a high level of satisfaction with students' knowledge, skills and personal qualities. We conclude that there is strong evidence that a well-designed programme of IPE can be effective in helping students to learn new knowledge and skills, and to implement their learning in the workplace. Further, we consider that there is some modest evidence of the benefits of such learning for service users.

Curran, V. R., Deacon, D. R., et al. (2005). "Academic administrators' attitudes towards interprofessional education in Canadian schools of health professional education." *Journal of Interprofessional Care* 19(SUPPL. 1): 76-86.

Interprofessional education is an approach to educating and training students and practitioners from different health professions to work in a collaborative manner in providing client and/or patient-centred care. The introduction and successful implementation of this educational approach is dependent on a variety of factors, including the attitudes of students, faculty, senior academic administrators (e.g., deans and directors) and practitioners. The purpose of this study was to examine attitudes towards interprofessional teamwork and interprofessional education amongst academic administrators of post-secondary health professional education programs in Canada. A web-based questionnaire in English and French was distributed via e-mail messaging during January 2004 to academic administrators in Canada representing medicine, nursing, pharmacy, social work, occupational therapy and physiotherapy post-secondary educational

programs. Responses were sought on attitudes towards interprofessional teamwork and interprofessional education, as well as opinions regarding barriers to interprofessional education and subject areas that lend themselves to interprofessional education. In general, academic administrators responding to the survey hold overall positive attitudes towards interprofessional teamwork and interprofessional education practices, and the results indicate there were no significant differences between professions in relation to these attitudinal perspectives. The main barriers to interprofessional education were problems with scheduling/calendar, rigid curriculum, turf battles and lack of perceived value. The main pre-clinical subject areas which respondents believed would lend themselves to interprofessional education included community health/prevention, ethics, communications, critical appraisal, and epidemiology. The results of this study suggest that a favourable perception of both interprofessional teamwork and interprofessional education exists amongst academic administrators of Canadian health professional education programs. If this is the case, the post-secondary system in Canada is primed for the introduction of interprofessional education initiatives which support the development of client and patient-centred collaborative practice competencies.

Elston, S. and Holloway, I. (2001). "The impact of recent primary care reforms in the UK on interprofessional working in primary care centres." *Journal of Interprofessional Care* 15(1): 19-27. This study comprises the perspectives of professionals in primary care regarding the impact of the changes in its organisation and interprofessional collaboration in the UK. General practitioners (GPs), nurses and practice managers were interviewed in three primary cares located within a 20-mile radius and in the same health authority. Interviews were analysed using the grounded theory approach of Glaser & Strauss (1967) as developed by Strauss & Corbin (1998). The separate ideologies and subcultures of GPs, nurses and managers influenced their perceptions of reforms in primary care. Professional identities and the traditional power structure generated some conflict between the three groups which affected collaboration in implementing the reforms. Based on the findings of the study, it seems probable that it will take a new generation of health professionals to bring about an interprofessional culture in the NHS.

Ettner, S. L., Kotlerman, J., et al. (2006). "An alternative approach to reducing the costs of patient care? A controlled trial of the Multi-Disciplinary Doctor-Nurse Practitioner (MDNP) model." *Medical Decision Making* 26(1): 9-17.

OBJECTIVE: Hospitals adapt to changing market conditions by exploring new care models that allow them to maintain high quality while containing costs. The authors examined the net cost savings associated with care management by teams of physicians and nurse practitioners, along with daily multidisciplinary rounds and postdischarge patient follow-up. METHODS: One thousand two hundred and seven general medicine inpatients in an academic medical center were randomized to the intervention versus usual care. Intervention costs were compared to the difference in nonintervention costs, estimated by comparing changes between preadmission and postadmission in regression-adjusted costs for intervention versus usual care patients. Intervention costs were calculated by assigning hourly costs to the time spent by different providers on the intervention. Patient costs during the index hospital stay were estimated from administrative records and during the 4-month follow-up by weighting self-reported utilization by unit costs. RESULTS: Intervention costs were \$1187 per patient and associated with a significant \$3331 reduction in nonintervention costs. About \$1947 of the savings were realized during the initial hospital stay, with the remainder attributable to reductions in postdischarge service use. After adjustment for possible attrition bias, a reasonable estimate of the cost offset was \$2165, for a net cost savings of \$978 per patient. Because health outcomes were comparable for the 2 groups, the intervention was cost-effective. CONCLUSIONS: Wider adoption of multidisciplinary interventions in similar settings might be considered. The savings previously reported with hospitalist models may also be achievable with other models that focus on efficient inpatient care and appropriate postdischarge care.

Gomez-Moreno, N., Orozco-Beltran, D., et al. (2006). "Inter-professional relationship between primary health care (PHC) and secondary care (hospital) in 1992 and 2001. A Delphi study. [Spanish]." *Atencion Primaria* 37(4): 195-202.

Aim. To evaluate the trends in the interprofessional relationship between primary health care (PHC) and secondary care (hospital) at 2 different moments of the health reform, at its start in 1992 and after a phase of consolidation (2001). Design. Observational study based on modified Delphi technique. Setting. Valencia Community, Spain. Participants. One hundred and ninety six professionals from Valencia Community were selected (103 PH centre administrators, 43 hospital and PC medical directors, and 50 heads of internal medicine or emergency services). Results. One hundred and ninety six questionnaires were sent out, with a response rate of 38%. In PHC problems remained the same, but the following got worse: 'lack of motivation' (+1.34), 'lack of overall vision of patients' (+1.10), and 'overuse of medical services' (+1.06). The existence of non-integrated out-patient specialists got better (-1.32). In hospitals, 'lack of overall vision of patients' got worse (+0.51), but in general problems got better, especially in 'lack of communication and dialogue' (-1.14). PC increased its demand for 'a single computerized clinical record' (+1.50), drawing up of common protocols (+0.86), and periodic rotations of PC doctors through hospitals (+0.85), but bureaucratic referrals to PC (-0.60) and the need for specialists in PC as consultants (-0.36) diminished. In hospitals all solutions showed lower scores, particularly access of PC doctors to monitoring of admitted patients (-2.44) and PC doctors doing hospital cover (-2.30). Conclusions. Problems and solutions from PHC and hospitals remain the same, but there is a trend to the worse in PHC, whereas in hospitals the trend is more positive.

Hean, S., Clark, J. M., et al. (2006). "Will opposites attract? Similarities and differences in students' perceptions of the stereotype profiles of other health and social care professional groups." *Journal of Interprofessional Care* 20(2): 162-181.

The extent to which health and social care (HSC) students hold stereotypical views of other HSC professional groups is of great potential importance to team working in health care. This paper explores students' perceptions of different HSC professional groups at the beginning of their university programmes. Findings are presented from an analysis of baseline data collected as part of the New Generation Project longitudinal cohort study which is assessing the impact of interprofessional education over time on a range of variables including stereotyping. Questionnaires were administered to a cohort of over 1200 students from 10 different HSC professional groups entering their first year of university. Stereotypes were measured using a tool adapted from Barnes et al. (2000) designed to elicit stereotype ratings on a range of nine characteristics. The findings confirm that students arrive at university with an established and consistent set of stereotypes about other health and social care professional groups. Stereotypical profiles were compiled for each professional group indicating the distinctive characteristics of the groups as well as the similarities and differences between groups. Midwives, social workers and nurses were rated most highly on interpersonal skills and on being a team player whilst doctors were rated most highly on academic ability. Doctors, midwives and social workers were perceived as having the strongest leadership role, whilst doctors were also rated most highly on decision making. All professions were rated highly on confidence and professional competence and, with the exception of social workers, on practical skills. A comparison of profiles for each professional group reveals that, for example, pharmacists and doctors were perceived as having very similar characteristics as were social workers, midwives and nurses. However, the profiles of nurses and doctors were perceived to be very different. The implications of these similarities and differences are discussed in terms of their potential impact on interprofessional interactions, role boundaries and team working.

Hope, J. M., Lugassy, D., et al. (2005). "Bringing interdisciplinary and multicultural team building to health care education: the downstate team-building initiative." *Academic Medicine* 80(1): 74-83. PURPOSE: To evaluate the impact of the Downstate Team-Building Initiative (DTBI), a model multicultural and interdisciplinary health care team-building program for health professions students. METHOD: A total of 65 students representing seven health disciplines participated in DTBI's first three years (one cohort per year since implementation). During the 18-session curriculum, students self-evaluated their group's progress through Tuckman's four team-development stages (FORMING, STORMING, NORMING, PERFORMING) on an 11-point scale. Students completed matched pre- and postintervention program evaluations assessing five variables: interdisciplinary understanding, interdisciplinary attitudes, teamwork skills, multicultural

skills, and team atmosphere. After participation, students completed narrative follow-up questionnaires investigating impact one and two years after program completion. RESULTS: Each year's team development curve followed a similar logarithmic trajectory. Cohort 1 remained in team development stage 3 (NORMING) while Cohorts 2 and 3 advanced into the final stage - PERFORMING. A total of 34 matched pre- and postintervention evaluations showed significant change in all major variables: Team atmosphere and group teamwork skills improved most (48% and 44%, respectively). Interdisciplinary understanding improved 42%. Individual multicultural skills (defined by ability to address racism, homophobia, and sexism) started at the highest baseline and improved the least (13%). Group multicultural skills improved 36%. Of 23 responses to the follow-up surveys, 22 (96%) stated DTBI was a meaningful educational experience applicable to their current clinical surroundings. CONCLUSIONS: DTBI successfully united students across health discipline, ethnicity, socioeconomic class, gender, and sexual orientation into functioning teams. The model represents an effective approach to teaching health care team building and demonstrates benefits in both preclinical and clinical years of training.

Insalaco, D., Ozkurt, E., et al. (2006). "Attitudes and knowledge of students in the allied health professions toward their future professional team members." *Journal of Allied Health* 35(3): 142-146.

The investigators wished to explore final-year allied health students knowledge of their future colleagues. A survey developed by Felsher and Ross (1994) was adapted and administered to 35 occupational therapy (OT), 35 physical therapy (PT), and 35 speech-language pathology (SLP) students. Findings suggested that all students had a good understanding and knowledge of their own professions. Differences were found among the three groups of students regarding their understanding of other disciplines and the overlap in OT and SLP roles. Specifically, OT and SLP students perceived their own professions as the primary providers of cognitive treatment. Ways to foster student understanding and collaboration are suggested.

Kyrkjebo, J. M., Brattebo, G., et al. (2006). "Improving patient safety by using interprofessional simulation training in health professional education." *Journal of Interprofessional Care* 20(5): 507-516.

Modern medicine is complex. Reports and surveys demonstrate that patient safety is a major problem. Health educators focus on professional knowledge and less on how to improve patient care and safety. The ability to act as part of a team, fostering communication, co-operation and leadership is seldom found in health education. This paper reports the findings from pilot testing a simulated training program in interprofessional student teams. Four teams each comprising one medical, nursing, and intensive nursing student (n=12), were exposed to two simulation scenarios twice. Focus groups were used to evaluate the program. The findings suggest that the students were satisfied with the program, but some of the videos and simulation exercises could be more realistic and more in accordance with each other. Generally they wanted more interprofessional team training, and had learned a lot about their own team performance, personal reactions and lack of certain competencies. Involving students in interprofessional team training seem to be more likely to enhance their learning process. The students' struggles with roles, competence and team skills underline the need for more focus on combining professional knowledge learning with team training.

Lynn Bourgeault, I. and Mulvale, G. (2006). "Collaborative health care teams in Canada and the USA: confronting the structural embeddedness of medical dominance." *Health Sociology Review* 15(5): 481-495.

There has been a renewed interest in collaborative models of health care delivered by 'interdisciplinary teams' of providers across several health care systems. This growing phenomenon raises a host of issues related to the management of professional boundaries and the contemporary state of medical dominance. In this paper, we undertake a critical analysis of the factors both promoting and impeding collaborative care models of primary and mental health care in Canada and the U.S. The data our arguments are based upon include a combination of documentary and interview data from key stakeholders influential in various collaborative care initiatives. Based on these data, we develop a conceptual model of the various levels of influence,

focusing in particular on the macro (regulatory/funding) and meso (institutional) factors. Our comparative policy and institutional analysis reveals the similarities and differences in the influences of the broader contexts in Canada and the U.S., and by extension the different ways that the structural embeddedness of medical dominance impinges upon and reacts to recent policy changes regarding collaborative health care teams.

Mackay, S. (2004). "The role perception questionnaire (RPQ): a tool for assessing undergraduate students' perceptions of the role of other professions." *Journal of Interprofessional Care* 18(3): 289-302.

A systematic review of interprofessional education (Freeth et al., 2002) revealed that there were many weaknesses in the current body of knowledge of interprofessional education outcomes. One reason for this was the lack of good quality study designs for evaluating the outcomes of interprofessional education. This paper discusses the range of tools that were found in the literature and describes the production and validation of two questionnaires that can be used as part of an interprofessional evaluation strategy. Firstly, a Generic Role Perception Questionnaire which can be used for measuring the perception of the role of a range of professions and a Nursing Role Perception Questionnaire used specifically for measuring the perception of the role of a nurse. Repertory grid technique was selected to elicit constructs from a multiprofessional group of final year undergraduate students. This pool was then used to develop the two questionnaires. Factor analysis, internal consistency and test re-test measures are used along with evidence of validity. The questionnaires were found to have acceptable validity and reliability and could be used as part of an IPE evaluation strategy to measure changes in professional role perception in an undergraduate population.

Manor-Binyamini, I. (2007). "Meaning of language differences between doctors and educators in a collaborative discourse." *Journal of Interprofessional Care* 21(1): 31-43.

This study of an ethnographic discourse examines the language of professionals - teachers and psychiatrists - working in collaboration in a special education school. The research objectives were examination of the meanings of recurring key words and the role of language in the verbal interaction between educators and doctors in their daily professional life. Data were collected from formal meetings, informal meetings, semi-constructed ethnographic interviews and documents published in the course of the school year. The paper offers two models for analyzing the interprofessional discourse. The first examines how key words reflect the perceptions of the speaker and his/her discipline, looking at the purpose of the communication. The second allows the researcher to examine the transferability of these concepts to the other discipline, focusing on the results of the communication. The findings reveal areas of discontent in the work of staff members with pupils, as well as the process of language transferability between professionals.

Mattick, K. and Bligh, J. (2005). "An e-resource to coordinate research activity with the Readiness for Interprofessional Learning Scale (RIPLS)." *Journal of Interprofessional Care* 19(6): 604-613.

Research into interprofessional education is often performed by professionals in practice alongside their other "core" duties, thus additional help and support to achieve quality research outcomes would be beneficial. This study aimed to create a virtual community of researchers with shared interest in quantitative studies of interprofessional learning using the Readiness for Interprofessional Learning Scale. An e-resource was built which provided access to relevant resources, helped to coordinate research effort, and promoted communication. Use of the resource was monitored over a 14-month period and evaluated at the end of this time. Forty-eight researchers across six different countries were assigned usernames and passwords. According to a self-report measure, 23/27 (85%) respondents to the evaluation questionnaire had accessed the resource and 95% planned to use it in the coming year. This paper shares our experiences and observations from the study.

McNair, R., Stone, N., et al. (2005). "Australian evidence for interprofessional education contributing to effective teamwork preparation and interest in rural practice." *Journal of Interprofessional Care* 19(6): 579-594.

A pilot interprofessional education (IPE) placement for undergraduate health care professional

students was undertaken in rural Victoria, Australia from 2001 to 2003. Medical, nursing, physiotherapy and pharmacy students were involved, and the project is ongoing. This paper briefly outlines the educational model, then focuses on the evaluation methods and results obtained from student evaluations. The placement experience improved self-reported teamwork skills and knowledge, and supported participating students' belief in the value of interprofessional practice. Placements strengthened nursing and allied health students' intention to work in rural health settings after graduation. The rural interprofessional educational experience improved interprofessional abilities in a group of students who have the potential to influence change towards collaborative practices in their future workplaces. The results obtained provide sufficiently strong evidence to justify the continuation and expansion of this educational model in the Australian setting. Pedagogical and evaluation modifications are discussed that may benefit future IPE programs.

Meads, G., Wild, A., et al. (2006). "The management of new primary care organizations: an international perspective." *Health Services Management Research* 19(3): 166-173.

Management practice arising from parallel policies for modernizing health systems is examined across a purposive sample of 16 countries. In each, novel organizational developments in primary care are a defining feature of the proposed future direction. Semistructured interviews with national leaders in primary care policy development and local service implementation indicate that management strategies, which effectively address the organized resistance of medical professions to modernizing policies, have these four consistent characteristics: extended community and patient participation models; national frameworks for interprofessional education and representation; mechanisms for multiple funding and accountabilities; and the diversification of non-governmental organizations and their roles. The research, based on a two-year fieldwork programme, indicates that at the meso-level of management planning and practice, there is a considerable potential for exchange and transferable learning between previously unconnected countries. The effectiveness of management strategies abroad, for example, in contexts where for the first time alternative but comparable new primary care organizations are exercising responsibilities for local resource utilization, may be understood through the application of stakeholder analyses, such as those employed to promote parity of relationships in NHS primary care trusts.

Mickan, S. M. and Rodger, S. A. (2005). "Effective health care teams: a model of six characteristics developed from shared perceptions." *Journal of Interprofessional Care* 19(4): 358-370.

This study into understanding health care teams began with listening to participants' teamwork experiences. It unfolded through a dialectic of iterations, analyses and critique towards a simplified model comprising six key characteristics of effective teams. Using the complementary theoretical perspectives of personal construct theory and inductive theory building, three research methods were used to collect a range of participant perspectives. A purposive sample of 39 strategic informants participated in repertory grid interviews and clarification questionnaires. A further 202 health care practitioners completed a purpose designed Teamwork in Healthcare Inventory. All responses were transformed through three iterations of interactive data collection, analysis, reflection and interpretation. Unstructured participant perspectives were qualitatively categorised and analysed into hierarchies to determine comparative contributions to effective teamwork. Complex inter-relationships between conceptual categories were investigated to identify four interdependent emerging themes. Finally, a dynamic model of teamwork in health care organisations emerged that has functional utility for health care practitioners. This Healthy Teams Model can be utilised in conjunction with a Reflective Analysis and Team Building Guide to facilitate team members to critically evaluate and enhance their team functioning.

Morrison, S. L. and Stewart, M. C. (2005). "Developing interprofessional assessment." *Learning in Health & Social Care* 4(4): 192-202.

Undergraduate medical and nursing education should enable the development of communication and teamworking skills and of reflective practice, which should be assessed and continued into professional practice. This study aimed to examine appropriate methods for the assessment of

interprofessional learning of clinical, teamwork and communication skills for undergraduate students in Paediatrics and Children's Nursing and to involve Senior House Officers (SHOs) in this process. During the 2002/3 academic year, 31 students, four nurse educators, two medical educators and six SHOs were involved in the development and implementation of a programme of interprofessional learning and assessment. Objective structured clinical skills examination (OSCE) and role-play assessment methods were used to explore the potential to develop common activities and standards for both professions. This study found that common learning activities and assessment methods acceptable to both professions could be developed and common standards set. It also concluded that development and delivery by an interprofessional team is particularly important and that formative feedback has a vital role to play in the process. Involving SHOs in the planning and implementation of interprofessional education (IPE) has the potential to allow its extension into different clinical areas and to meet training requirements at the postgraduate level.

Morrison, S. (2006). "A case study of interprofessional learning and working at Marylebone Health Centre." *Work Based Learning in Primary Care* 4(2): 116-129.

This case study explores the transformation of learning through the integration of collaborative primary healthcare practice. Reorganisations in the NHS are fostering multidisciplinary and collaborative approaches believed to improve patient care. However, much of the evidence underpinning policy derives from a formal academic paradigm. Practitioners in this study had chosen to introduce team working in their NHS primary healthcare centre as early as 1987, well ahead of government endorsements. Key questions relating to interdisciplinary knowledge creation and utilisation in the workplace have been explored using a variety of qualitative methodologies (buzz group, semi-structured interviews and analysis of archived written materials). This study suggests that collaborative learning and working in a stable primary care team is achieved by allocating considerable time and attention to the active interdisciplinary processes. This clearly has implications for practice funding and workforce issues.

Odegard, Atle. (2005), "Perceptions of interprofessional collaboration in relation to children with mental health problems. A pilot study." *Journal of Interprofessional Care* 19(4): 347-357.

The primary aim of this paper is to present some findings from a pilot study and to outline a tentative model of interprofessional collaboration. A second aim is to reflect on how to design a main study. Seven professionals from school psychology services (3), a children's psychiatric clinic (2) and an elementary school (2), participated in the study. Two methods were used: Semi-structured interview in combination with a vignette and the Sentence Completion Technique. Categorization was used as the central analyzing tool together with condensation and interpretations. The data analysis is supported by the software program Nud*Ist N6. The results are presented in three main sections: (a) interprofessional group variations, (b) the situation of the central actors, and (c) collaboration as a working method.

O'Neill, B. J. and Wyness, M. A. (2005). "Student voices on an interprofessional course." *Medical Teacher* 27(5): 433-438.

Investigations of outcomes of interprofessional education as a component of the basic preparation of health and human service professionals have lacked a strong focus on student perceptions, the student voice. This qualitative study examined students' insights regarding the interprofessional component of an elective course offered to 23 students; five from medicine and six from each of pharmaceutical sciences, nursing and social work. Fourteen students participated in focus group interviews at the conclusion of the course and 12 participated in telephone interviews six months later. The interviews explored perceptions regarding learning, including insights about the effectiveness of teaching-learning strategies, and improvements required. Experiential components of the course were more meaningful to students than theoretical components. Students perceived the use of practice-based learning, student interprofessional teams, and interprofessional collaboration in the classroom as particularly effective. The course contributed to students' development of their own professional voices and their understanding of those of other professions. Additional interpretive studies of students' experiences and those of faculty and professionals in practice are needed, particularly regarding

strategies for increasing the effectiveness of experiential learning.

Pollard, K. C., Miers, M. E., et al. (2004). "Collaborative learning for collaborative working? Initial findings from a longitudinal study of health and social care students." *Health & Social Care in the Community* 12(4): 346-58.

This paper presents the initial findings from a longitudinal quantitative study of two cohorts of students who entered the 10 pre-qualifying programmes of the Faculty of Health and Social Care, University of the West of England (UWE), Bristol, UK. The overall aim of the study is to explore students' attitudes to collaborative learning and collaborative working, both before and after qualification. On entry to the faculty, 852 students from all 10 programmes completed the UWE Entry Level Interprofessional Questionnaire, which gathered baseline data concerning their self-assessment of communication and teamwork skills, and their attitudes towards interprofessional learning and interprofessional interaction. Comparative analysis of these data was undertaken in terms of demographic variables such as age (i.e. older or younger than 21 years), experience of higher education, prior work experience and choice of professional programme. The results indicate that most students rated their communication and teamwork skills positively, and were favourably inclined towards interprofessional learning, but held negative opinions about interprofessional interaction. Some student groups differed in their responses to some sections of the questionnaire. Mature students, and those with experience of higher education or of working in health or social care settings, displayed relatively negative opinions about interprofessional interaction; social work and occupational therapy students were particularly negative in their responses, even after adjustment for confounding demographic variables. The paper concludes by considering the implications of the findings for interprofessional educational initiatives and for professional practice.

Pollard, K., Miers, M. E., et al. (2005). "Second year scepticism: Pre-qualifying health and social care students' midpoint self-assessment, attitudes and perceptions concerning interprofessional learning and working." *Journal of Interprofessional Care* 19(3): 251-268.

A study in an English Faculty of Health and Social Care explores the effects of a pre-qualifying interprofessional curriculum incorporating interprofessional modules in each year of study. The study design involves collecting data on entry to the Faculty, after completion of the second interprofessional module, on qualification and after 9 months qualified practice. At each point, students complete questionnaires concerning communication and teamwork skills and interprofessional learning and working. This paper presents results from 723 students at the second data collection point. Although most students were positive about their communication and teamwork skills, they were less positive than on entry to the Faculty. Similarly there was a negative shift in students' attitudes to interprofessional learning and interprofessional interaction. Nevertheless, most students were positive about their own interprofessional relationships. Mature students' responses were more positive than those of younger students. The emergence of differences in responses based on a professional programme suggests that interprofessional education may not necessarily influence professional socialization. Demographic and professional variables affecting students' responses in their second year of study demonstrate the complexity of student learning. The planned follow-up of the students will show whether variables affecting interim data have a long-term effect on attitudes.

Pollard, K. C., Miers, M. E., et al. (2006). "A comparison of interprofessional perceptions and working relationships among health and social care students: the results of a 3-year intervention." *Health & Social Care in the Community* 14(6): 541-552. A longitudinal quantitative study in an English faculty of health and social care explored the effects of a pre-qualifying interprofessional curriculum for students from 10 professional programmes. Students on the interprofessional curriculum completed questionnaires containing four attitude scales on entry to the faculty, during their second year and at the end of their final year. At qualification, 581 students (76.9% of those qualifying) completed scales concerning their communication and teamwork skills, their attitudes towards interprofessional learning, their perceptions of interaction between health and social care professionals, and their opinions about their own (inter)professional relationships. Questionnaires were completed at both entry and qualification by 526 students (69.8% of those qualifying), and at

all three points by 468 students (61.9% of those qualifying). A comparison group of 250 students (67.6% of those qualifying) on the previous uniprofessional curricula also completed questionnaires at qualification. Students on the interprofessional curriculum showed no significant change in their self-assessment of their communication and teamwork skills between entering the faculty and qualification. However, there was a negative shift in their attitudes to interprofessional learning and interprofessional interaction. Nevertheless, most students were positive about their own professional relationships at qualification. Students with previous experience of higher education were comparatively positive about their communication and teamwork skills, as were female students about interprofessional learning. However, the strongest influence on students' attitudes at qualification appeared to be professional programme. This suggests that interprofessional education does not inhibit the development of profession-specific attitudes. Students who qualified on the interprofessional curriculum were more positive about their own professional relationships than those who qualified on the previous uniprofessional curricula. These data suggest that experiencing an interprofessional curriculum has an effect on students' attitudes at qualification, particularly with regard to their positive perception of their own professional relationships.

Poulsen, I. K. and Pedersen, B. D. (2007). "Ward rounds -- a joint task [Danish]." *Sygeplejersken / Danish Journal of Nursing* 107(1): 48-50.

In the spring of 2005 we carried out an interprofessional communication and collaboration project at Copenhagen University Hospital, Rigshospitalet, for nurses in their 6th term of training and 9th term medical students. The educational framework was the ward rounds. Teaching was planned as a one-day course. The purpose of the course was to give the students knowledge and insight into each other's professions through presentations, joint discussions and specific exercises in collaboration. This would enable them to enter into future interprofessional collaboration with a greater awareness of their own and others' roles as professionals. The project was evaluated by means of questionnaires and focus group interviews. The students' evaluation of the course was generally positive. The course covered a major need for better knowledge of each other's professions as a basis for interprofessional collaboration. According to the students, the joint teaching had provided them with knowledge of each other's professional responsibilities and roles when it comes to preparing and structuring discussions relating to ward rounds.

Priest, H., Sawyer, A., et al. (2005). "A survey of interprofessional education in communication skills in health care programmes in the UK." *Journal of Interprofessional Care* 19(3): 236-250.

There is considerable evidence to indicate that patient satisfaction is directly related to the communication skills of health care providers. However, communication is an area in which health care practitioners often fail to meet patients' needs. Interprofessional education (IPE) is advocated as one way of improving health care communication for the consequent development of interprofessional care. However, poorly planned and delivered IPE can reinforce professional differences, so it is imperative that its introduction is based upon sound evidence of local need, opportunity and resources. A multidisciplinary and cross university project was designed to identify opportunities for, and best practice in, IPE in communication skills amongst undergraduate health care practitioners within one Workforce Development Directorate (WDD) in England. Methods included a comprehensive literature review of relevant educational initiatives, together with telephone and e-mail interviews with key informants in higher education institutions (HEIs) across the UK. This paper reports the findings from the interviews. Based upon these findings, a series of recommendations are made for the planning, implementation, and evaluation of IPE in communication skills, which should be taken into account by local curriculum planning groups.

Reeves, S. and Lewin, S. (2004). "Interprofessional collaboration in the hospital: strategies and meanings." *Journal of Health Services & Research Policy* 9(4): 218-25.

OBJECTIVES: Interprofessional collaboration is widely advocated in health and social care policies. However, existing research provides a relatively poor understanding of how professionals collaborate or the meanings they attach to their collaborative work. This paper aims to contribute to understanding of this activity by providing an in-depth account of interprofessional

collaboration on medical wards in a large teaching hospital. METHODS: Ethnographic methods were used, including individual and group interviews with health and social care staff (i.e. doctors, nurses, therapists, social workers; n = 49) and participant observations of ward-based work. RESULTS: The organisation of medical teams, who cared for patients across a number of wards, and the task oriented nature of medical work, limited opportunities for collaboration with other professionals (e.g. nurses, therapists) who were usually based on a single ward. Consequently, collaboration tended to be task-based, terse and formalistic. Staff employed a range of informal and formal communication strategies to overcome these constraints. Professionals also gave contrasting accounts of collaboration: doctors viewed collaboration primarily as an activity involving work with their medical colleagues, whereas other professionals saw it more as an interprofessional activity. CONCLUSIONS: Temporospatial constraints and contrasting notions of 'collaboration' are important factors in shaping the nature of interprofessional collaboration. Policies that promote this activity cannot assume that shared understanding of collaboration exists. They also need to be mindful of the practical constraints that affect collaboration in hospital wards.

Reid, R., Bruce, D., et al. (2006). "Validating the Readiness for Interprofessional Learning Scale (RIPLS) in the postgraduate context: are health care professionals ready for IPL?" *Medical Education* 40(5): 415-422.

AIMS: This paper describes the process of validating the Readiness for Interprofessional Learning Scale (RIPLS) for use with postgraduate health care professionals. CONTEXT: The RIPLS questionnaire has proved useful in the undergraduate context, enabling tutors to assess the readiness of students to engage in interprofessional learning (IPL). With the drive in the National Health Service (NHS) to deliver health care in interprofessional teams, it seems logical to ask whether postgraduate education should, or could, be delivered successfully in interprofessional contexts. As a preliminary to undertaking an extended IPL project, the researchers tested the validity of the RIPLS tool in the postgraduate health care context. METHOD: A modified version of the RIPLS questionnaire was administered to all general practitioners, nurses, pharmacists and allied health professionals in the Dundee Local Health Care Cooperative (LHCC) (n = 799). A total of 546 staff responded (68%). RESULTS: Three factors, comprising 23 statements, emerged from the statistical analysis of the survey data, namely, teamwork and collaboration, sense of professional identity and patient-centredness. The internal consistency measure was 0.76. Analysis of variance suggested some key differences between the different professions in respect of the factors. CONCLUSIONS: The RIPLS questionnaire was validated for use in the postgraduate context, thus providing researchers with a tool for assessing health professionals' attitudes towards interprofessional learning at practice level, community health partnership level or at a national level of education and training. Significant differences between professional groups should be taken into account in designing any interprofessional learning programme.

Rudland, J. R. and Mires, G. J. (2005). "Characteristics of doctors and nurses as perceived by students entering medical school: implications for shared teaching." *Medical Education* 39(5): 448-455.

INTRODUCTION: Debate continues with respect to when to introduce interprofessional education for maximal potential benefit. One perspective is that interprofessional education should be introduced early in the undergraduate curriculum before students develop stereotyped impressions of other professional groups. However, it may be that students at entry to medical school have already developed these stereotypical impressions. This study examines perceived professional characteristics of doctors and nurses by students entering medical school. METHODOLOGY: Year 1 medical students in 4 consecutive years completed a questionnaire on their perceptions of the characteristics and backgrounds of nurses and doctors and on their attitudes to shared teaching. RESULTS: Year 1 medical students were found to perceive the characteristics of doctors and nurses differently. They considered nurses to be more caring and doctors to be more arrogant. They considered nurses to have lower academic ability, competence and status, although comparable life experience. They were generally very positive about beginning shared learning at an early stage of training. DISCUSSION: Whilst it is encouraging

that medical students are positive about shared teaching, it is of concern that they have a poor perception of the academic ability, status in society and professional competence of the nurse at entry to medical school. These perceived impressions, which may reflect societal misconceptions regarding the roles and responsibilities of nurses within a modern health care system, may have an impact on the success of early interprofessional teaching initiatives in undergraduate curricula.

Russell, L., Nyhof-Young, J., et al. (2006). "An exploratory analysis of an interprofessional learning environment in two hospital clinical teaching units." *Journal of Interprofessional Care* 20(1): 29-39.

An analysis of a teaching environment with regard to interprofessional practice was done using both qualitative and quantitative methods. Medical, nursing and other health professional staff and students from two hospital units (medical and surgical) completed two surveys. The students were also interviewed. Staff differed in survey results among disciplines, with nurses and other health professionals having a more positive view of interprofessional collaboration than physicians. Student interviews supported our hypothesis that little formal or informal interprofessional education occurred during clinical rotations. Students had little understanding of the nature of collaborative behavior, and appeared to learn their discipline's attitudes and practices through tacit observation of staff behaviors. This appears to reinforce disciplinary stereotypes, and may be a significant barrier to the development of collaborative practice. These results have implications for the design of interprofessional curriculum in clinical practicums.

Sicotte, C. D'Amour, D. and Moreault, M. P. (2002) Community Health Care Centres." *Social Science & Medicine* 55(6): 991-1003. Central to the success of many recent health system reforms is the implementation of new primary health care delivery models. The central characteristic common to these new models usually emphasises interdisciplinary collaboration. Using empirical research, this paper studies interdisciplinary collaboration among various groups of professionals within an original Canadian primary health care delivery model, the Quebec Community Health Care Centres (CHCCs). The entire population of more than 150 CHCCs have been surveyed. The goals of this study are (1) to measure the achieved intensity of inter-professional collaboration among Quebec CHCCs, and (2) to identify the organisational and professional factors fostering or limiting interdisciplinary collaboration. The results show that Quebec CHCCs have reached modest results in achieving interdisciplinary collaboration especially since interdisciplinary collaboration is a central objective that has been pursued for more than 25 years. This study demonstrates that the main factors associated with interdisciplinary collaboration are closely linked to work group internal dynamics. Interdisciplinary collaboration is linked to the simultaneous and antagonistic effect of some central intragroup process factors. Conflicting values and beliefs are present that both enhance and limit interdisciplinary collaboration. The presence of conflicting stimuli seriously undermines the strength of the CHCC work group's shared beliefs and strongly limits interdisciplinary collaboration. The results also stress the importance of administrative formalisation initiatives to enhance collaboration among different professions. The efficacy of formalisation in this context is based on its capacity to offer an articulated and operative interdisciplinary framework that can generate a counteractive effect to the traditional professional framework. It offers concrete rules that help align the work group beliefs with interdisciplinary values. The formalisation of functions and processes appears thus to be an interesting means to further interdisciplinary collaboration.

Snelgrove, S. and Hughes, D. (2000). "Interprofessional relations between doctors and nurses: perspectives from South Wales." *Journal of Advanced Nursing* 31(3): 661-667. This paper discusses findings from a study of interprofessional relationships between doctors and nurses in medical wards in three provincial general hospitals in south Wales. The aim of the research was to investigate the changing nature of doctor-nurse relations, and in particular, how far the notion of the doctor-nurse game, as developed by Leonard Stein (Stein 1967, 1990), remains relevant to contemporary hospital work. The present paper concentrates on a subset of the findings concerned with doctors' and nurses' accounts of the hospital division of labour and the extent of any overlap in their work activities. Semi-structured interviews were conducted with 20 doctors and 39 nurses in their places of work over a period of 4 months. Inductive analysis of the data

indicated that, whilst doctors and nurses perceived their roles in largely traditional terms, there was some recognition of blurring of occupational boundaries, especially when considering work pressures, working at night and differences in practice in more specialized clinical areas. Although nurses were generally reluctant to challenge doctors' authority, some used the notion of patient 'advocacy' to frame and justify their questioning of particular decisions. Whilst doctors valued 'experience' in nurses and saw experienced nurses as the group who might most legitimately move into doctors' territory, nurses valued formal education and saw advanced nursing qualifications as the route to role expansion.

Steinert, Y. (2005). "Learning together to teach together: interprofessional education and faculty development." *Journal of Interprofessional Care* 19(Suppl1): 60-75.

Interprofessional education for collaborative patient-centered practice has been identified as a key mechanism to address health care needs and priorities. Faculty development can play a unique role in promoting interprofessional education (IPE) by addressing some of the barriers to teaching and learning that exist at both the individual and the organizational level, and by providing individuals with the knowledge and skills needed to design and facilitate IPE. This article highlights a number of approaches and strategies that can facilitate IPE. In particular, it is recommended that faculty development initiatives aim to bring about change at the individual and the organizational level; target diverse stakeholders; address three main content areas, notably interprofessional education and collaborative patient-centred practice, teaching and learning, and leadership and organizational change; take place in a variety of settings, using diverse formats and educational strategies; model the principles and premises of interprofessional education and collaborative practice; incorporate principles of effective educational design; and consider the adoption of a dissemination model to implementation. Clearly, faculty members play a critical role in the teaching and learning of IPE and they must be prepared to meet this challenge.

Stew, G. (2005). "Learning together in practice: A survey of interprofessional education in clinical settings in South-East England." *Journal of Interprofessional Care* 19(3): 223-235.

This article describes the outcomes of a two-year project, commissioned by the Department of Health, to investigate the development of pre-registration education for the allied health professions in Kent, Surrey and Sussex. A range of data collection methods were adopted in order to identify where and how interprofessional education (IPE) was occurring in clinical settings. It was found that IPE is highly contextualized, and develops according to a variety of situational factors. The types of IPE encountered are described and their respective features, strengths and limitations are discussed.

Tse, A. M., Iwashita, L. K., et al. (2006). "A collaborative approach to developing a validated competence-based curriculum for health professions students." *Education for Health* 19(3): 331-344.

Problem: Curricula are developed to educate health professions students to provide efficient and effective health services. In addition to learning their disciplinary perspective, today's students must master the concepts of multidisciplinary team care. Traditionally, curriculum was developed based primarily on the perspectives of the discipline faculty, administration and accrediting agencies. However, now there are multiple groups (other academic educators, consumers and employers of health care providers) who may hold differing perspectives about outcomes expected from these programs. Purpose: The purpose of this investigation was to use an innovative methodology to generate and validate a curriculum for health professions students from multiple disciplines. Method: A multi-phased method using focus groups, surveys, dissemination and affirmation was presented to identify the concepts and best practices that should be included. Results: Several performance-based themes evolved during the interviews and a questionnaire was generated. Academic educators, consumers and employers of health care providers indicated agreement that the components on the survey were realistic and important for health professions students to achieve. Thus, outcomes for a curriculum were validated. The faculty rated several components of the curriculum as less realistic for students to achieve than did the consumers and employers. This investigation suggests it may be necessary for faculty to assist providers and parents in developing more realistic expectations about what

students can achieve during their educational program. The approach used in this current project moves the field of the health professions curriculum development to a different level when compared with the traditional curriculum development approaches and should be used by others concerned with multi-professional education to assure the validity of the curricula.

Vazirani, S., Hays, R. D., et al. (2005). "Effect of a multidisciplinary intervention on communication and collaboration among physicians and nurses.[see comment]." *American Journal of Critical Care* 14(1): 71-7.

BACKGROUND: Improving communication and collaboration among doctors and nurses can improve satisfaction among participants and improve patients' satisfaction and quality of care. **OBJECTIVE:** To determine the impact of a multidisciplinary intervention on communication and collaboration among doctors and nurses on an acute inpatient medical unit. **METHODS:** During a 2-year period, an intervention unit was created that differed from the control unit by the addition of a nurse practitioner to each inpatient medical team, the appointment of a hospitalist medical director, and the institution of daily multidisciplinary rounds. Surveys about communication and collaboration were administered to personnel in both units. Physicians were surveyed at the completion of each rotation on the unit; nurses, biannually. **RESULTS:** Response rates for house staff (n = 111), attending physicians (n = 45), and nurses (n = 123) were 58%, 69%, and 91%, respectively. Physicians in the intervention group reported greater collaboration with nurses than did physicians in the control group (P < .001); the largest effect was among the residents. Physicians in the intervention group reported better collaboration with the nurse practitioners than with the staff nurses (P < .001). Physicians in the intervention group also reported better communication with fellow physicians than did physicians in the control group (P = .006). Nurses in both groups reported similar levels of communication (P = .59) and collaboration (P = .47) with physicians. Nurses in the intervention group reported better communication with nurse practitioners than with physicians (P < .001). **CONCLUSIONS:** The multidisciplinary intervention resulted in better communication and collaboration among the participants.

FOCUS GROUPS, OBSERVATION STUDIES, LONGITUDINAL STUDIES – MULTIPROFESSIONAL, INTERPROFESSIONAL, MULTIDISCIPLINARY

Barker, K. K. and Oandasan, I. (2005). "Interprofessional care review with medical residents: Lessons learned, tensions aired - A pilot study." *Journal of Interprofessional Care* 19(3): 207-214. Integrated interprofessional care teams are the focus of Canadian and American recommendations about the future of health care. Keeping with this, a family medicine teaching site developed an educational initiative to expose trainees to interprofessional care processes and learning (Interprofessional Care Review; IPC). A formative evaluation pilot study was completed using one-on-one interviews and a focus group (n = 6) with family medicine residents. A semi-structured guide was utilized regarding: knowledge, skills and attitudes related to interprofessional care; their experience of the processes utilized in IPC. Data were analyzed using content analysis. Residents' perspectives on their learning revolved around four themes: changes to understanding and practice of interprofessional care; personal impact of IPC; learning about other health professionals; tension and challenges of IPC learning and clinical implementation. Residents valued the educational experience, but identified that faculty supervisors provided 'mixed messages' in the value of collaborating with other health professionals. Implications regarding future educational and research opportunities are discussed.

Bernabeu-Wittel, M., Garcia-Morillo, S., et al. (2005). "Work, career satisfaction, and the position of general internists in the south of Spain." *European Journal of Internal Medicine* 16(6): 454-460. **Background:** A progressive dissatisfaction has been noted among many internists, and the future of the specialty represents a matter of concern. The objectives of this study were to analyze career satisfaction among 182 internists from 34 hospitals in the south of Spain and to assess the opinion of 47 other health care professionals who frequently interact with internists on the present and future role of the specialty. **Methods:** Ours was a multi-institutional, cross-sectional survey of

internists that focused on demographics/practice characteristics, education/research, career satisfaction, and opinions regarding the future of internal medicine. Also included were interactive, interdisciplinary focus groups of family physicians, sub-specialists, and managers. The internists were asked to complete a questionnaire that contained items and factors that were measured on a 5-point Likert scale and quantitatively analyzed; the opinions of the focus groups were qualitatively analyzed. Results: The internists surveyed dedicated most of their time to treating hospitalized patients rather than to diagnostic procedures and technical assessment. Some 54% and 57% of the internists pursued continuing medical education and research, respectively, in their free time. The internists were satisfied with the content of their work and with their interpersonal relationships, but they were dissatisfied with their physical/instrumental environment, management policies, and degree of work stability. No differences were detected in relation to age, gender, community factor, or professional category. With regard to the future of the specialty, the main opportunity detected by internists was a closer collaboration with primary care. An analysis of the strengths, weaknesses, future opportunities and threats to internal medicine expressed by the seven focus groups was highly concordant and added worthwhile information and clear proposals for the development of the specialty. Conclusions: Internists in the south of Spain were satisfied with the content of their work and dissatisfied with health care management and job stability. The future of internal medicine was felt to lie in a deeper collaboration between internists and their colleagues in primary care. copyright 2005 European Federation of Internal Medicine.

Braithwaite, J., Westbrook, M. T., et al. (2005). "A tale of two hospitals: assessing cultural landscapes and compositions." *Social Science & Medicine* 60(5): 1149-1162.

Clinical directorate service structures (CDs) have been widely implemented in acute settings in the belief that they will enhance efficiency and patient care by bringing teams together and involving clinicians in management. We argue that the achievement of such goals depends not only on changing its formalized structural arrangements but also the culture of the organisation concerned. We conducted comparative observational studies and questionnaire surveys of two large Australian teaching hospitals similar in size, role and CD structure. Martin's conceptualization of culture in terms of integration, differentiation and fragmentation was applied in the analysis of the data. The ethnographic work revealed that compared to Metropolitan Hospital, Royal Hospital was better supported and more favourably viewed by its staff across six categories identified in both settings: leadership, structure, communication, change, finance and human resource management. Royal staff were more optimistic about their organisation's ability to meet future challenges. The surveys revealed that both staff groups preferred CD to traditional structures and shared some favourable and critical views of them. However Royal staff were significantly more positive, reporting many more benefits from CDs e.g. improved working relations, greater accountability and efficiency, better cost management, more devolvement of management to clinicians and a hospital more strategically placed and patient focused. Metropolitan staff were more likely to claim that CDs failed to solve problems and created a range of others including disunity and poor working relationships. There was greater consensus of views among Royal staff and more fragmentation at Metropolitan where both intensely held and uncertain attitudes were more common. The outcomes of implementing CDs in these two similar organisations differed considerably indicating the need to address cultural issues when introducing structural change. Martin's framework provides a useful antidote to researchers' tendency to focus at only one level of culture.

Carlisle, C., Cooper, H., et al. (2004). "Do none of you talk to each other?": the challenges facing the implementation of interprofessional education." *Medical Teacher* 26(6): 545-52.

There is a growing interest internationally in the development of interprofessional education (IPE), with the potential goal of achieving more effective healthcare delivery. The aim of this study is to explore the feasibility of introducing IPE within undergraduate health professional programmes, using a systematic review of the evidence and focus-group interviews. This paper reports findings from the focus-group interviews. Three focus-group interviews, each lasting two hours, were conducted. Participants (n = 34) were drawn from the clinical and academic environments, from health service consumers and from health professional students. Two areas were explored: (1)

the feasibility of IPE and (2) perceptions of its effects. Each focus group had a primary facilitator who led the group discussion and a second facilitator audiotaping discussions and writing observational notes. Three main themes emerged: the advantages of IPE, the challenges of initiating IPE, and the role of IPE in the creation of professional identification. There was consensus in the view that IPE had much potential in breaking down traditional barriers to team working, including professional 'tribalism'. It is important for IPE to be integrated with interprofessional experiences in clinical practice. Further empirical work, focusing on student and patient outcomes in IPE, is needed.

Cashen, M. S., Bradley, V., et al. (2006). "Exploring the impact of health information technology on communication and collaboration in acute care nursing." *Studies in Health Technology & Informatics* 122: 575-9.

A focus group using nursing informatics experts as informants was conducted to guide development of a survey to explore the impact of health information technology on the role of nurses and interdisciplinary communication in acute care settings. Through analysis of focus group transcripts, five key themes emerged: information, communication, care coordination, interdisciplinary relationships, workflow, and practice effectiveness and efficiency. This served as the basis for development of a survey that will investigate perceptions of acute care providers across the United States regarding the impact of health information technology on the role of nurses and interdisciplinary communication in acute care settings. The purpose of this paper is to describe the process of survey development including analysis of transcripts, emergence of key themes, and the processes by which the themes will be employed to inform survey development.

Cashman, S., Reidy, P., et al. (2004). "Developing and measuring progress toward collaborative, integrated, interdisciplinary health care teams." *Journal of Interprofessional Care* 18(2): 183-96. In this article we report the results of a longitudinal study of an intervention to enhance interdisciplinary team functioning in a primary care setting. Components of the team development intervention are outlined. Team members' assessments of progress towards expressing values consistent with an effective team--as measured through the System for the Multiple Level Observation of Groups (SYMLOG)--are presented and discussed. Institutional, organizational, and team related supports and barriers that affect the development of collaborative, integrated teams are identified and discussed; implications for ensuring teams' success are presented.

Claridge, T., Parker, D., et al. (2005). "Investigating the attitudes of health-care professionals towards the use of integrated care pathways in a district general hospital: a thematic analysis of focus group discussion." *Journal of Integrated Care Pathways* 9(2): 57-66.

Context: Integrated care pathways (ICPs) are an increasingly common approach to the standardization and integration of health-care practice in the NHS. They delineate interdisciplinary critical decision points and evidence-based daily treatment regimens for patients in specific disease groups. ICP champions assert that they have the potential to decrease medical errors, increase the accuracy of data capture, increase the efficiency of personnel and ultimately improve the quality of patient care. Despite the theoretical benefits of ICP use, there was anecdotal evidence of staff unease and audit evidence of variable compliance with ICPs at a district general hospital (DGH). Objective: This focus group study was one of the three interdependent methodologies used to investigate the attitudes of health-care professionals towards ICPs in a DGH. It was anticipated that thematic analysis of the focus group discussion would facilitate further the interpretation of qualitative data already analysed in a previous phase of the project, and inform the development of a survey questionnaire investigating the attitudes of the health-care professionals towards ICPs. Design: Ten focus groups comprising on average, six health-care professionals were conducted. The staff involved included doctors, nurses, professions allied to medicine, a member of the Community Health Council and non-clinical managers. The focus groups included staff with a range of seniority and speciality. Results: Analysis of the data achieved facilitated the confirmation and identification of themes underpinning the focus group discussion. These are reported here and illustrated by representative quotations. Conclusion: The focus group study provided a valuable insight into the attitudes regarding ICPs of over 60 health-care professionals. The themes identified were used to

facilitate the development of a survey questionnaire to explore them in a quantifiable way. Focus group methodology proved to be a useful way to explore emerging issues in depth, and to observe areas of disagreement among staff.

Clark, J. D., Thomas, M., et al. (2002). "A novel approach to promoting change in SHO training in a dental teaching hospital." *British Dental Journal* 193(3): 167-71.

An action research study using a series of staged focus groups with senior house officers (SHOs) and educational supervisors (ES) was used to identify the perceptions of the strengths and challenges in the SHO training programme and to indicate areas for improvement. The basic findings were not entirely surprising, with SHOs wanting more detailed feedback from educational supervisors and educational supervisors challenged (by time constraints and competing clinical and research responsibilities) in meeting the expectations of the SHOs. However the novel approach of using staged focus groups enhanced the educational supervisors' perception of the SHOs' view of their training and the SHOs' perception of the challenges faced by educational supervisors. Thus a culture of dialogue was created which supported change and innovation. This process was able to directly inform and influence the development of a new induction programme for SHOs and provide valuable insight into the use of the portfolio of learning and the provision of study opportunities. These findings may only be of local interest, however the method employed can be transferred to other contexts to support a grass roots approach to change. Indeed, since this study has been completed, the method has been replicated in a medical setting.

Cole, D. C., Robson, L. S., et al. "Quality of working life indicators in Canadian health care organizations: a tool for healthy, health care workplaces?" *Occupational Medicine* 55(1): 54-9.

BACKGROUND: Quality-of-work-life (QWL) includes broad aspects of the work environment that affect employee learning and health. Canadian health care organizations (HCOs) are being encouraged to monitor QWL, expanding existing occupational health surveillance capacities. AIM: To investigate the understanding, collection, diffusion and use of QWL indicators in Canadian HCOs. METHODS: We obtained cooperation from six diverse public HCOs managing 41 sites. We reviewed documentation relevant to QWL and conducted 58 focus groups/team interviews with strategic, support and programme teams. Group interviews were taped, reviewed and analysed for themes using qualitative data techniques. Indicators were classified by purpose and HCO level. RESULTS: QWL indicators, as such, were relatively new to most HCOs yet the data managed by human resource and occupational health and safety support teams were highly relevant to monitoring of employee well-being (119 of 209 mentioned indicators), e.g. sickness absence. Monitoring of working conditions (62/209) was also important, e.g. indicators of employee workload. Uncommon were indicators of biomechanical and psychosocial hazards at work, despite their being important causes of morbidity among HCO employees. Although imprecision in the definition of QWL indicators, limited links with other HCO performance measures and inadequate HCO resources for implementation were common, most HCOs cited ways in which QWL indicators had influenced planning and evaluation of prevention efforts. CONCLUSIONS: Increase in targeted HCO resources, inclusion of other QWL indicators and greater integration with HCO management systems could all improve HCO decision-makers' access to information relevant to employee health.

Cooper, H. and Spencer-Dawe, E. (2006). "Involving service users in interprofessional education narrowing the gap between theory and practice." *Journal of Interprofessional Care* 20(6): 603-617.

Calls for greater collaboration between professionals in health and social care have led to pressures to move toward interprofessional education (IPE) at both pre- and post-registration levels. Whilst this move has evolved out of 'common sense' demands, such a multiple systems approach to education does not fit easily into existing traditional educational frameworks and there is, as yet, no proven theoretical framework to guide its development. A research study of an IPE intervention at the University of Liverpool in the UK drew on complexity theory to conceptualize the intervention and to evaluate its impact on a group of ~500 students studying physiotherapy, medicine, occupational therapy, nursing and social work. The intervention blended a multidisciplinary (non-interactive) plenary with self-directed e-learning and a series of

interdisciplinary (interactive) workshops. Two evaluations took place: the first when the workshops were facilitated by trained practitioners; the second when the practitioners co-facilitated with trained service users. This paper reports findings from the second evaluation which focused on narrowing the gap between theory and practice. A multi-stakeholder evaluation was used including: students' reflective narratives, a focus group with practitioners and individual semi-structured interviews with service users. Findings showed that service users can make an important contribution to IPE for health and social care students in the early stages of their training. By exposure to a service user perspective, first year students can begin to learn and apply the principles of team work, to place the service user at the centre of the care process, to make connections between theory and 'real life' experiences, and to narrow the gap between theory and practice. Findings also revealed benefits for facilitators and service users.

Cooper, H., Spencer-Dawe, E., et al. (2005). "Beginning the process of teamwork: Design, implementation and evaluation of an inter-professional education intervention for first year undergraduate students." *Journal of Interprofessional Care* 19(5): 492-508.

An evidence-based interprofessional educational (IPE) intervention involving first year undergraduate students studying medicine, nursing, physiotherapy and occupational therapy was piloted at the University of Liverpool. Campbell's phased approach and Complexity Theory guided development of the intervention and its evaluation. The intervention included a staff-training programme, e-learning materials and interprofessional team working skills workshops. A multi method study design was used to evaluate outcomes and the processes by which the outcomes had transpired. The first year cohort of students (n = 442) was invited to attend the pilots. Fifty-four percent (n = 237) opted to attend. Findings showed that the intervention promoted theoretical learning about team working. It enabled the students to learn with and from each other (p < 0.001), it significantly raised awareness about collaborative practice (p < 0.05), and its link to improving the effectiveness of care delivery (p < 0.01). The qualitative data showed that it served to increase students' confidence in their own professional identity and helped them to value difference making them better prepared for clinical placement. The findings support the need to start IPE early in students' training before professional doctrines have been built into their learning. As a result of the findings, the intervention has become compulsory for students to attend and the project has evolved to include trained service users/carers as co-facilitators of the workshops. It is also working on strengthening e-learning by integrating the generic materials into the curricula of all courses. Alongside this, strategies are being explored for interprofessional learning in practice.

Crow, J., Smith, L., et al. (2005). "Using the Patchwork Text as a vehicle for promoting interprofessional health and social care collaboration in higher education." *Journal of Interprofessional Care* 4(3): 117-128.

The promotion of effective interprofessional collaboration is very high on the UK government's agenda for reform and modernization of the Health and Social Care Services. As lecturers in Higher Education we are concerned with developing meaningful learning experiences that facilitate this collaboration in practice. To this end we introduced the Patchwork Text as an innovative form of teaching, learning and assessment and, in this article, we report the findings of our small exploratory study examining the student experience of the process and the potential of the Patchwork Text to facilitate interprofessional collaboration. We collected data from students via open-ended questionnaires and a focus group discussion. The findings that emanated from the data showed that the iterative process of the Patchwork Text enabled students to develop and express the characteristics that are essential for collaborative working. It thus acted as a powerful vehicle for the learning and practice of collaboration in the classroom.

Eskelinen, L. and Caswell, D. (2006). "Comparison of social work practice in teams using a video vignette technique in a multi-method design." *Qualitative Social Work* 5(4): 489-503.

This article focuses on the use of the vignette method in social worker teams and thereby collective or shared aspects of practice, which cannot be reached through a presentation of a vignette separately to the individual members of the team. A video vignette case was presented to four social worker teams in connection with a focus group session in order to compare the

teams' assessment of the client. The negotiations in the focus groups accentuate how teams interpret the same client in different ways and actualize questions as to where these differences stem from and what they are related to. The results support two methodological conclusions that we discuss in the article: that it is beneficial to use vignette in a multi-method design when comparing teams and that a focus group context is an advantage, when the characteristics of the team should be accentuated, while individual differences become secondary.

Fitzgerald, A. and Teal, G. (2003). "Health reform, professional identity and occupational sub-cultures: the changing interprofessional relations between doctors and nurses." *Contemporary Nurse* 16(1-2): 9-19.

Recent literature on health reform describes advantages of a collaborative approach to the management of health organizations. However, it is important for the managers of health organizations, including nurse managers, to understand that occupational groups adapt to organizational change and policy reform in different ways. These differences to change may have an effect on health reform initiatives, in particular, by potentially limiting the development of collaboration, team work and inter-professional practice. This paper presents fieldwork from a study on health reform and professional identities. Data from focus group discussions are used to discuss the dynamics of reform, the tensions between occupational subcultures and the organization, and changing relations within and between diverse occupational and professional groups. As opposed to much of the literature on professional identity, data for this research suggests that professional identities are changing under the strain of environmental changes to the health system, and associated cultural changes. Professions are not static. In addition, this research found that cultural differences are not limited to occupational groups of doctors, nurses and others, and include differentiation within the medical profession that is based upon specialization, generation, educational background, employment status and feelings of [non]association with the organization. These differences have resulted in cultural ambiguity of sustained and non-sustained fragmentation of occupational and professional groupings that, if not fully understood, are potentially complicating the implementation of change.

Hojat, M., Nasca, T. J., et al. (2001). "Attitudes toward physician-nurse collaboration: a cross-cultural study of male and female physicians and nurses in the United States and Mexico." *Nursing Research* 50(2): 123-8.

BACKGROUND: Inter-professional collaboration between physicians and nurses, within and between cultures, can help contain cost and insure better patient outcomes. Attitude toward such collaboration is a function of the roles prescribed in the culture that guide professional behavior. **OBJECTIVES:** The purpose of the study was to test three research hypotheses concerning attitudes toward physician-nurse collaboration across genders, disciplines, and cultures. **METHOD:** The Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration was administered to 639 physicians and nurses in the United States (n = 267) and Mexico (n = 372). Attitude scores were compared by gender (men, women), discipline (physicians, nurses), and culture (United States, Mexico) by using a three-way factorial analysis of variance design. **RESULTS:** Findings confirmed the first research hypothesis by demonstrating that both physicians and nurses in the United States would express more positive attitudes toward physician-nurse collaboration than their counterparts in Mexico. The second research hypothesis, positing that nurses as compared to physicians in both countries would express more positive attitudes toward physician-nurse collaboration, was also supported. The third research hypothesis that female physicians would express more positive attitudes toward physician-nurse collaboration than their male counterparts was not confirmed. **CONCLUSIONS:** Collaborative education for medical and nursing students, particularly in cultures with a hierarchical model of inter-professional relationship, is needed to promote positive attitudes toward complementary roles of physicians and nurses. Faculty preparation for collaboration is necessary in such cultures before implementing collaborative education.

Ker, J., Mole, L., et al. (2003). "Early introduction to interprofessional learning: a simulated ward environment." *Medical Education* 37(3): 248-55.

OBJECTIVES: To develop an interprofessional simulated ward environment for junior medical and nursing students and to identify themes for future evaluations and modify criteria for formative assessment of the exercise. **SUBJECTS:** Second year medical and nursing students. **SETTING:** The multiprofessional Clinical Skills Centre at the Faculty of Medicine, and Nursing, University of Dundee, Scotland. **METHOD:** A simulated ward environment was created in the Clinical Skills Centre around patients with common medical conditions. Students were allocated to interprofessional teams and, after a briefing given in the form of a ward report, were asked to take responsibility for the ward for 'a shift'. Observers from the Schools of Medicine and Nursing charted their progress in relation to evidence of collaborative team working, effective leadership, the ability to prioritise workload and competence in clinical performance. Evaluations of the exercise were taken from all participants. The criteria for formative assessment were reviewed by the observers after the exercise and a focus group was used to generate additional criteria and modify those piloted. **RESULTS:** The exercise was perceived positively by all participating groups. Themes for evaluation of future exercises and modified criteria for future assessment were identified. **CONCLUSIONS:** The exercise gave students their first experience of participating independently in a realistic and safe operational ward setting. It proved to be a powerful learning experience for the students.

Mallik, M. and McGowan, B. (2007). "Issues in practice based learning in nursing in the United Kingdom and the Republic of Ireland: results from a multi professional scoping exercise." *Nurse Education Today* 27(1): 52-59.

The first year (2003-2004) of a three year nationally funded project focused on completing a scoping exercise on the nature of practice education in five selected health care professions: Dietetics, Nursing, Occupational Therapy, Physiotherapy and Radiography (www.practicebasedlearning.org). A survey questionnaire, focus groups and secondary sources were used to collect data. Profession specific contributors completed the analysis of results. Resulting case studies were combined to produce a cross-professional overview of current issues in practice-based learning. The nursing case study identified areas of good practice such as; the mentorship model; the development of new support roles; and joint responsibility between Higher Education Institutes (HEIs) and Health Service areas for practice assessment. However, there were variations in the application of these areas of good practice throughout the United Kingdom (UK). Issues included; an inadequate supply of qualified mentors; formal recognition of the mentor role; and lack of knowledge of the relative impact of the differing mentor preparation programmes. In comparing the five professions, all had statutory requirements regarding the nature of practice learning but each profession differed in how this was managed and organised. The need for formal preparation, recognition and reward for the mentor/practice educator role was recognised with collaborative working across the professions a recommendation in order to achieve national improvement in the quality of practice learning support for health care professions.

Martin, E. R. (2006). "Team effectiveness in academic medical libraries: A multiple case study." *Journal of the Medical Library Association* 94(3): 271-278.

Objectives: The objective of this study is to apply J. Richard Hackman's framework on team effectiveness to academic medical library settings. **Methods:** The study uses a qualitative, multiple case study design, employing interviews and focus groups to examine team effectiveness in three academic medical libraries. Another site was selected as a pilot to validate the research design, field procedures, and methods to be used with the cases. In all, three interviews and twelve focus groups, with approximately seventy-five participants, were conducted at the case study libraries. **Findings:** Hackman identified five conditions leading to team effectiveness and three outcomes dimensions that defined effectiveness. The participants in this study identified additional characteristics of effectiveness that focused on enhanced communication, leadership personality and behavior, and relationship building. The study also revealed an additional outcome dimension related to the evolution of teams. **Conclusions:** Introducing teams into an organization is not a trivial matter. Hackman's model of effectiveness has implications for designing successful library teams.

Miller, J. S., Charles-Jones, H. D., et al. (2005). "Multidisciplinary primary care mental health teams: a challenge to communication." *Primary Care Mental Health* 3(3): 171-180.

Recent national guidelines have caused primary care trusts to explore new ways of providing mental health care for patients with mild to moderate mental health problems. This study examines communication in a new team in one primary care organisation. In order to provide mental health services within the primary care organisation, general practices were grouped together in 'clusters'. While this allowed the primary care organisation to provide a range of services to the patients within its locality, it also created several potential difficulties as a consequence of bringing together different working practices, different professional groups and different cultures. This paper examines the mechanisms for communication within the teams and the issues that arose across these interpractice and interprofessional boundaries. Multiple qualitative methodologies were used to explore these issues. The first was participant observation carried out at a residential conference run by the primary care organisation to develop its mental health strategy. The data from this early stage of the study were used to develop a framework for a series of focus groups with healthcare professionals who were members of the primary mental healthcare teams. Focus groups were carried out with GP mental health leads (n = 13), district nurses (n = 8), health visitors (n = 7) and counsellors (n = 8). Finally, semi-structured interviews (n = 10) were carried out with primary care mental health team key workers and general practitioners (GPs) (n = 3). Four themes emerged from the data: communication within the primary care mental health team (PCMHT), communication with the rest of the primary healthcare team (PHCT), communication with patients, and confidentiality.

This paper highlights the difficulties of interprofessional communication that need to be addressed if the 'cluster' model is to be an effective mechanism for delivering primary care mental health services.

Poland, B., Graham, H., et al. (2005). "'Working at the margins' or 'leading from behind'?: a Canadian study of hospital-community collaboration." *Health & Social Care in the Community* 13(2): 125-135.

Collaboration between hospitals and community organisations has been promoted over the past 20 years by various levels of government, hospital associations, health promotion advocates, and others at the state/province, national and international levels as a way to improve the 'efficiency of the system', reduce duplication, enhance effectiveness and service coordination, improve continuity of care, and enhance community capacity to address complex issues. Nevertheless, and despite a growing literature on interagency collaboration, systematic documentation and empirical analysis of hospital-community collaboration (HCC) is almost completely lacking in the literature, particularly as regards collaborations that address the determinants of health beyond the hospital walls. In this paper, we describe the methodology and key findings from a research study of HCC. The Hospital Involvement in Community Action (HICA) study undertook detailed qualitative case studies (in four urban, suburban, rural and northern locations) and a telephone survey (of 139 community organisations in a large urban centre) in order to learn about the range of collaborations and working relationships that exist between hospitals and community agencies in the province of Ontario (Canada), and the factors that influenced (enabled and/or hindered) HCC. Particular attention was paid to barriers and enablers at three nested levels of context (policy, hospital and community) and, drawing primarily on the qualitative case studies, it is this aspect that is the focus of this paper. That such collaborations continue to be widespread despite a generally unfavourable policy environment and hospital institutional culture that poses significant barriers, suggests that the extent to which HCC flourishes (or exists at all) crucially depends on the presence and ongoing enthusiasm/commitment of one or more 'champions' within the hospital, and the commitment of both parties to overcome the marked cultural differences between hospital and community. We conclude with a discussion of implications for policy and practice.

Reeves, S., Freeth, D., et al. (2006). "Delivering practice-based interprofessional education to community mental health teams: understanding some key lessons." *Nurse Education in Practice* 6(5): 246-253.

This paper describes a project that offered an interprofessional education (IPE) experience to two community mental health teams (CMHTs) based in separate inner city locations. Team members were offered three weekly workshops that aimed to enhance their understanding of interprofessional collaboration and improve their collective work as a team. A multi-method research design was employed to evaluate the impact of the workshops. Data were collected at four points in time: before, directly after, three months and 12 months following the workshops. It was found that participants enjoyed their IPE experience and reported that it was helpful in enhancing their understanding of collaboration. In addition, one team reported that the workshops had contributed to improving their communication with one another. However, two key factors constrained the overall impact of this IPE experience: a limited involvement of medical staff, which undermined the 'value' of the workshops; and a lack of senior managerial support, which impeded efforts to transfer team-based learning into practice. These findings are discussed in relation to the IPE, sociology and change management literature in order to help understand some key lessons associated with delivering practice-based IPE.

Robinson, M. and Cottrell, D. (2005). "Health professionals in multi-disciplinary and multi-agency teams: changing professional practice." *Journal of Interprofessional Care* 19(6): 547-560.

The article draws on an Economic and Social Research Council (ESRC)-funded research project that aimed to investigate the reality behind the rhetoric of "joined up thinking". The research project was a qualitative, multi-method study involving three phases, including observation and documentary analysis; interviews; and focus groups around decision making and knowledge sharing. The article reflects on the perspectives and experiences of health professionals and their colleagues in multi-agency teams about the impact of multi-agency teamwork on their professional knowledge and learning, and on their ways of working. Actual and potential conflicts between professionals are explored about models of understanding, about roles, identities, status and power, about information sharing, and around links with other agencies. Dilemmas of team building and of conflicting values and knowledge are exemplified from health professionals' accounts, using theoretical models of "communities of practice" and "activity theory". The article presents groups of strategies that health professionals and their colleagues in multi-agency, multi-professional teams use to overcome barriers and to strengthen team cohesion. The conclusion reflects on some implications of our findings in theory and practice for professionalism within integrated, multi-professional teams that are building new ways of working.

Rodehorst, T. K., Wilhelm, S. L., et al. (2005). "Use of interdisciplinary simulation to understand perceptions of team members' roles." *Journal of Interprofessional Care* 21(3): 159-166.

The aim of this study was to examine the effectiveness of an interdisciplinary approach to learning in helping care providers understand their overlapping roles in the clinical management of asthma. In addition, the perceived usefulness of an interdisciplinary approach for students in the health-care disciplines of nursing, medicine, pharmacy, and respiratory therapy to learn about the clinical management of asthma was explored. The diffusion of innovation framework [Rogers (1995), *Diffusions of Innovations* (5th ed.). New York: Free Press] was used to guide the process of development of CD-ROMs. An interpretative approach was selected for this research because of the emphasis on how a phenomenon is perceived and how meaning is constructed in situations. This approach assumes that multiple ways of interpreting experiences are available through interaction. A convenience sample of health-care practitioners from two rural campuses was selected to participate in this study. The cohort of participants represented students from the population of a large midwestern moderate-sized university that has four geographically distinct campuses. Preliminary results indicate that the use of interdisciplinary learning helps clarify the roles of each discipline and that learning from one another is enhanced.

Varga-Atkins, T. and Cooper, H. (2005). "Developing e-learning for interprofessional education." *Journal of Telemedicine & Telecare* 11 Suppl 1: 102-4.

An evidence-based, interprofessional educational course involving first-year undergraduate students studying medicine, nursing, physiotherapy and occupational therapy has been piloted at the University of Liverpool. Part of the content was developed in an online format. To capture the development process and the e-learning writing experience, a focus group was arranged for the

content writers. The session was audio-recorded and tapes were transcribed. All the data were subjected to thematic analysis. Twenty-three sub-themes were identified in the 72 comments. These were grouped under six themes, corresponding to the developmental stages of e-learning. The highest number of comments fell under the theme of preparation, followed by content development, evaluation, general design and structure, and finally delivery. Team working contributed to the success of the writing process, reflecting the theme of working inter-professionally.

STUDIES – MULTIPROFESSIONAL, INTERPROFESSIONAL, MULTIDISCIPLINARY

Ård, A. (2005). "Perceptions of interprofessional collaboration in relation to children with mental health problems. A pilot study." *Journal of Interprofessional Care* 19(4): 347-357.

The primary aim of this paper is to present some findings from a pilot study and to outline a tentative model of interprofessional collaboration. A second aim is to reflect on how to design a main study. Seven professionals from school psychology services (3), a children's psychiatric clinic (2) and an elementary school (2), participated in the study. Two methods were used: Semi-structured interview in combination with a vignette and the Sentence Completion Technique. Categorization was used as the central analyzing tool together with condensation and interpretations. The data analysis is supported by the software program Nud*lst N6. The results are presented in three main sections: (a) interprofessional group variations, (b) the situation of the central actors, and (c) collaboration as a working method.

Allan, C. M., Campbell, W. N., et al. (2006). "A conceptual model for interprofessional education: The International Classification of Functioning, Disability and Health (ICF)." *Journal of Interprofessional Care* 20(3): 235-245.

A shared language and conceptual framework is essential to successful interprofessional collaboration. The World Health Organization's International Classification of Functioning, Disability and Health (ICF) provides a shared language and conceptual framework that transcends traditional disciplinary boundaries. This paper will familiarize readers with the ICF and describe the biopsychosocial perspective that is adopted in its conceptual framework and language. The presentation of a case study will illustrate how the ICF can enhance interprofessional learning by promoting a multidimensional perspective of an individual's health concerns. The case study will also highlight the value of the shared language and conceptual framework of the ICF for interprofessional collaboration. It is argued that a strong foundation in the principles exemplified by the ICF may serve to enhance interprofessional communication, and in so doing, encourage involvement in interprofessional collaboration and healthcare.

Allan, H., Bryan, K., et al. (2005). "Developing an interprofessional learning culture in primary care." *Journal of Interprofessional Care* 19(5): 452-464.

This paper discusses the concept of interprofessional learning based on empirical data from an evaluation of an interprofessional learning project that was set in a British primary health care centre. A process evaluation methodology was chosen to collect the data using semi-structured interviews and focus groups with stakeholders and staff to gather their experiences and views of the project and documentary data from records written over the lifetime of the project. The paper argues that an interprofessional learning culture requires time to become embedded in everyday practice and to achieve such a culture, shared values, aims and clear communication are essential. The data suggest that there is a need to recognize responsibility for one's own learning as individuals as well as learning as teams of work colleagues if interprofessional learning is to be successful. However, even when these pre-requisites of interprofessional learning are agreed and acknowledged openly in the workplace, participants in the development of a learning culture need to recognize that there are structural controls which influence and constrain such developments which are external to participants and beyond their immediate control.

Alonso, A., Baker, D. P., et al. (2006). "Reducing medical error in the Military Health System: How can team training help?" *Human Resource Management Review* 16(3): 396-415.

Medical error causes more than 98,000 deaths annually [Kohn, L. T., Corrigan, J. M., and

Donaldson, M. S. (1999). *To err is human: Building a safer health system*. Washington, DC: National Academies Press.] making it a national epidemic during the late 1990s. In reaction, Congress passed the National Defense Authorization Act mandating the Department of Defense (DoD) to establish processes for patient safety in the military health care and veteran affairs. Among the many processes for patient safety identified by the DoD, team training stepped to the forefront in 2001 when the TRICARE Management Activity (TMA) commissioned the development of two programs based upon Crew Resource Management training from the aviation industry. A recent evaluation of these programs identified several limitations including the establishment of two distinct approaches to teamwork and an inability to leverage the larger body of team training available. TeamSTEPPS, or the Team Strategies and Tools to Enhance Performance and Patient Safety, was developed to address the cultural issues facing the military health system and to take advantage of the state-of-the-art evidence-base on team training. Despite success, several challenges remain representing opportunities for human resources professionals and organizational researchers to help improve this program and further research on the impact of team training on patient safety.

Amundson, S. J. (2005). "The impact of relational norms on the effectiveness of health and human service teams." *Health Care Manager* 24(3): 216-224.

This investigation examined the relationship between relational norms with the perceived effectiveness of an infrequently studied team--the health care and human service team. Twenty health care and human service teams and their team supervisors from 11 medical and social service centers participated. In separate team sessions, 85 health care and human service professionals completed the Group Emotional Intelligence Questionnaire, a team effectiveness scale, and a demographic form. Each team's supervisor also rated the team's performance. Based on a Model of Group Emotional Intelligence (ie, group interaction levels, relational norms), significant correlations were found between group emotional competence and member-perceived team effectiveness. No correlations were found between supervisor-perceived team effectiveness and team group emotional competence. The relational norms of creating an affirmative environment, demonstrating a caring orientation, and building relationships beyond the team predicted member-perceived team effectiveness. This study makes an important contribution to the theory and practice of teams in health care and human service organizations. The results of the study suggest that a positive, caring, and supportive work environment impacts a team's effectiveness within such an organization.

Anderton, J. B. (2005). "Interprofessional collaboration: The assumptive world of health care professionals." *Dissertation Abstracts International: Section B: The Sciences and Engineering* 66(5-B): 2808.

Interprofessional collaboration in the provision of mental health services is becoming recognized as a necessity by many professional organizations, and increasingly supported by various funding sources. However, true collaboration is a difficult skill to define, much less to practice. The author reviews the research on barriers to collaborative activities, and focuses attention on the professional "turf" issues often identified as inhibiting collaborative activities. The author introduces the concept of the assumptive world of the health professional as one factor that potentially impacts the success of collaborative efforts. The author reviewed the websites of ten professional organizations that are frequently called upon to act collaboratively in the provision of mental health services to children and families (e.g., The American Academy of Family Physicians, The American Academy of Pediatrics, and The American Psychiatric Association). The author conducted a systematic analysis of the information presented on each of the ten professional websites, searching for (1) position or policy statements related to collaboration, (2) whether the descriptions of professional roles & functions included collaborative activities, (3) whether the profession's ethical standards included collaboration, (4) who the presumed leader of collaborative activities is (according to that profession's viewpoint,) (5) the presumed site of collaborative activities, and (6) any officially sanctioned definitions of collaboration. The results of this analysis were compiled and analyzed. The author argues that one important barrier to true, effective collaboration lies in the assumptive world of the professionals entering into collaborative relationships, as based on the professional literature available on the websites. Implications for

training and future research are discussed.

Athanasiadis, L., Papaharitou, S., et al. (2006). "Educating physicians to treat erectile dysfunction patients: Development and evaluation of a course on communication and management strategies." *Journal of Sexual Medicine* 3(1): 47-55.

Purpose. To describe the development and assess the outcome of a workshop on erectile dysfunction (ED) management based on participating physicians evaluations. Method. The study involved physicians who attended a workshop offered throughout the country, during a 3-year period. The workshop included tutorials, video-based dramatizations, and role-play sessions. A pilot study investigated the workshop's impact on physicians' attitudes toward patient-centeredness and sexual behavior issues; Patient-Practitioner Orientation Scale (PPOS) and Cross Cultural Attitude Scale (CCAS) were administered before and after the course. New knowledge acquisition, quality of presentation, and workshop's usefulness in their clinical practice were the dimensions used for workshop's evaluation. Analysis used quantitative and qualitative methods. Results. A total of 194 questionnaires were administered during the pilot study and the response rate was 53.6%. A shift in attitudes toward patient-centeredness and less judgmental attitude toward patients' sexual attitudes were revealed (total PPOS score and Sharing subscale: $P < 0.05$, CCAS: $P < 0.001$). Six hundred physicians were asked to evaluate the workshops and the response rate was 62.3%. The tutorial session for 'medical treatment of ED' ($P < 0.001$) and the role-play on sexual history taking ($P < 0.05$) received higher evaluation scores. Qualitative analysis showed that the most frequently reported category referred to the appropriateness of role-play as a teaching and awareness-raising technique (31.25%); a need for changes in clinical practice and communication patterns was identified by 20% of the participants who stressed the necessity for multidisciplinary approach, as well as the adoption of a nonjudgmental attitude toward patients. Conclusion. Training courses on ED management, using a combination of tutorial and interactive sessions, constitute an effective way of providing knowledge, enhancing physicians' communication skills with ED patients, and influencing attitudes toward patient-centeredness in sexual issues. Such results strongly support the establishment of sexual medicine courses at continuing medical education curricula. copyright 2006 International Society for Sexual Medicine.

Atwal, A. and Caldwell, K. (2005). "Do all health and social care professionals interact equally: a study of interactions in multidisciplinary teams in the United Kingdom." *Scandinavian Journal of Caring Sciences* 19(3): 268-273.

Problems around deficits in interprofessional collaboration have been identified since the National Health Service (NHS) was introduced. It is within the context of the current policy focus on improving collaborative working that this study was undertaken. A direct observational study using the Bales' Interaction Process Analysis tool was carried out in two older persons teams to explore patterns of interaction in the multidisciplinary team meetings. Analysis revealed some key differences in the way in which different professions interacted. Occupational therapists, physiotherapists, social workers (SW) and nurses rarely asked for opinions and for orientation. The consultant (the individual in charge of the medical team) tended to have high rates for asking for orientation, giving opinions and giving orientation. Although some nurses did have high individual rates for the giving of orientation. The data from the research has highlighted that therapists, SWs and nurses are reluctant to voice their opinions in multidisciplinary teams and thus conformity may dominate its culture. It is suggested that therapists, SWs and nurses need to cite their opinions in teams more effectively if they are to be competent and committed patient-centred practitioners.

Bray, J. and Hawkins, E. (2006). "Facilitating interprofessional learning in the workplace: a research project using the Delphi technique." *Work Based Learning in Primary Care* 4(3): 223-235.

Multiprofessional teamwork and the development of interprofessional learning (IPL) figure prominently in current policy documents, from both government and professional bodies in the UK. The literature on IPL strongly supports the view that by learning together, professionals should be able to work together collaboratively, thus enhancing the quality of service provision

and client outcomes. Daily work-based practice in primary health and social care offers many opportunities to promote learning, which aims to improve interprofessional work. However, expert practitioners with little or no educational preparation to facilitate IPL often run these sessions. A view that is supported through anecdotal evidence, suggests practitioners often feel ill-equipped for their role as facilitators, and that participant feedback shows poor facilitation can affect the quality of shared learning. This research study was designed to explore the facilitation skills and knowledge needed to promote effective IPL in the workplace. A Delphi survey was carried out to explore whether there are additional skills and methods required to promote effective IPL. The main findings of the study showed that IPL facilitators require advanced and in-depth skills similar to those necessary to facilitate other complex diverse groups.

Bridges, J., Meyer, J., et al. (2003). "Interprofessional care co-ordinators: the benefits and tensions associated with a new role in UK acute health care." *International Journal of Nursing Studies* 40(6): 599-607.

While more flexible models of service delivery are being introduced in UK health and social care, little is known about the impact of new roles, particularly support worker roles, on the work of existing practitioners. This action research study aimed to explore the impact of one such new role, that of interprofessional care co-ordinators (IPCCs). The general (internal) medical service of a UK hospital uses IPCCs to provide support to the interprofessional team and, in doing so, promote efficiency of acute bed use. Using a range of methods, mainly qualitative, this action research study sought to explore the characteristics and impact of the role on interprofessional team working. While the role's flexibility, autonomy and informality contributed to success in meeting its intended objectives, these characteristics also caused some tensions with interprofessional colleagues. These benefits and tensions mirror wider issues associated with the current modernisation agenda in UK health care.

Brooker, Curran, J. (2006) "The national continuous quality improvement tool for mental health education: results of targeted and supported implementation in England." *Journal of Interprofessional Care* 20(3): 276-89.

The national continuous quality assurance tool for mental health education and training has recently been developed. This paper describes the planned implementation of the tool across NHS Workforce Development Confederations (WDCs) in England. Large stakeholder groups in 15 WDCs were convened. The groups rated 29 programmes across a range of provisions including pre-qualifying programmes (social work and mental health nursing), post-qualifying programmes, new graduate mental health worker programmes and programmes run within NHS Trusts. Overall, the results indicate that the majority of rated programmes are relevant to the policy agenda and involve service users in a meaningful way. However, courses are less likely to engage with carers and to assess the impact of the programmes. Key factors are identified that promote the implementation of the new quality assurance tool and key barriers to implementation are also elicited. The paper concludes that the tool can provide a useful framework to assess the quality of a broad range of mental health education, furthermore, that it should be incorporated into existing quality assurance systems.

Clark, P. (2004). "Institutionalizing interdisciplinary health professions programs in higher education: the implications of one story and two laws." *Journal of Interprofessional Care* 18(3): 251-61.

The interdisciplinary education of health professionals in the USA has increasingly been tied to renewed efforts directed toward quality improvement in the healthcare system, where problems with communication, collaboration, and cooperation are seen as endemic. Many of the published reports and recommendations on interdisciplinary programming, however, have omitted or downplayed the difficulties and challenges of developing and sustaining efforts in this area. Through the presentation of a detailed case study and the exploration of two laws of interdisciplinary programming proposed from it, this paper explores the fundamental difficulties of developing and, more importantly, sustaining interdisciplinary health professions programs in higher educational settings. The utilization of strategies based on emerging forces in the

healthcare system and in higher education itself is suggested for initiating interdisciplinary projects, and structural and procedural factors are explored as critical in guaranteeing the long-term sustainability of such programs. Recommendations for the successful development and implementation of interdisciplinary programs in higher educational contexts are suggested, focusing particularly on the role of an advocate in the top down and bottom up development and maintenance of the resources needed for the success of such programs.

Clark, P. G. (2006). "What would a theory of interprofessional education look like? Some suggestions for developing a theoretical framework for teamwork training." *Journal of Interprofessional Care* 20(6): 577-589.

Much of the literature on interprofessional education (IPE) is descriptive, anecdotal, and atheoretical. To advance both practice and research in this field, IPE needs to develop theoretical frameworks that: (i) identify major concepts to guide the development of course and program structures and processes, (ii) specify learning objectives and effective methods for their achievement, (iii) suggest appropriate roles for faculty and students in the educational process, and (iv) aid in research and assessment of program impacts and outcomes. Following an exploration of what theory should mean and the role it might play in advancing IPE, this discussion surveys five different theoretical approaches for guidance in developing an IPE framework: (i) cooperative, collaborative, or social learning; (ii) experiential learning; (iii) epistemology and ontology of interdisciplinary inquiry; (iv) cognitive and ethical student development; and (v) education of the reflective practitioner. Common themes are discussed and their implications for IPE are explored. These include: (i) social context of collaborative and experiential learning, (ii) epistemology and ontology, facts and values, (iii) importance of reflection, and (iv) implications for student and faculty roles. Overall, this discussion aims to foster continued dialogue, discussion, and debate on the need for, and the role of, theory in IPE.

Currie, M., King, G., et al. (2005). "A model of impacts of research partnerships in health and social services." *Journal of Interprofessional Care* 28(4): 400-412.

Alliances have long been an important strategy for health promotion and community development. They are now becoming an important approach to generating research that is thought to have real-world relevance and easy applicability because of the involvement of community members. A comprehensive, dynamic model of community impacts of research partnerships in social or health services is presented. This process-oriented, systems model outlines three major domains of mid-term impact (Enhanced Knowledge, Enhanced Research Skills, and Use of Information) that correspond to the core functions of collaborative research partnerships discussed in the literature (i.e. knowledge generation, research education and training, and knowledge sharing). The model will assist research partners, intended recipients, and founders to understand and evaluate the real-world impacts of community-university research partnerships. The model provides research partnerships with a tool to demonstrate their accountability and to improve their operations and impacts, and evaluators with a tool to guide planning and evaluation efforts.

D'Amour, D., Ferrada-Videla, M., et al. (2005). "The conceptual basis for interprofessional collaboration: Core concepts and theoretical frameworks." *Journal of Interprofessional Care*. Special Issue: Interprofessional Education for Collaboration Patient-Centred Care Canada as a Case Study 19(Suppl1): 116-131.

Interprofessional collaboration is a key factor in initiatives designed to increase the effectiveness of health services currently offered to the public. It is important that the concept of collaboration be well understood, because although the increasingly complex health problems faced by health professionals are creating more interdependencies among them, we still have limited knowledge of the complexity of interprofessional relationships. The goal of this literature review was to identify conceptual frameworks that could improve our understanding of this important aspect of health organizations. To this end, we have identified and taken into consideration: (a) the various definitions proposed in the literature and the various concepts associated with collaboration, and (b) the various theoretical frameworks of collaboration.

D'Amour, D. and Oandasan, I. (2005). "Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept." *Journal of Interprofessional Care* Special Issue: Interprofessional Education for Collaboration Patient-Centred Care Canada as a Case Study 19(Suppl1): 8-20.

This paper proposes a new concept and a frame of reference that should permit the development of a better understanding of a phenomenon that is the development of a cohesive and integrated health care practice among professionals in response to clients' needs. The concept is named "interprofessionality" and aims to draw a clear distinction with another concept, that of interdisciplinarity. The utilization of the concept of interdisciplinarity, which originally concerns the development of integrated knowledge in response to fragmented disciplinary knowledge, has caused some confusion. We need a concept that will specifically concern the development of a cohesive practice among different professionals from the same organization or from different organizations and the factors influencing it. There is no concept that focuses clearly on this field. Interprofessionality concerns the processes and determinants that influence interprofessional education initiatives as well as determinants and processes inherent to interprofessional collaboration. Interprofessionality also involves analysis of the linkages between these two spheres of activity. An attempt to bridge the gap between interprofessional education and interprofessional practice is long overdue; the two fields of inquiry need a common basis for analysis. To this end, we propose a frame of reference, an interprofessional education for collaborative patient-centred practice framework.

D'Eon, Marcel. "A blueprint for interprofessional learning." (2005). *Journal of Interprofessional Care* 19 Supplement 1 (May 2005): 49-59. Interprofessional education (IPE) has been promoted as a method to enhance the ability of health professionals to learn to work together. This article examines several approaches to learning that can help IPE fulfill its expectations. The first is aimed at the transfer of learning novel situations and involves two ideas. Students need to be challenged with progressively more complex tasks and those tasks need to reflect the reality in which they will be working. Second, the learning situation needs to be structured using the five elements of best-practice cooperative learning: positive interdependence, face-to-face promotive interaction, individual accountability, interpersonal and small-group skills, and group processing. Finally, the learning process itself needs to be approached from an experiential learning framework cycling through the four-stage model of planning, doing, observing and reflecting. By using increasingly complex and relevant cases in cooperative groups with an experiential learning process interprofessional education can be successful.

Driedger, S. M., Gallois, C., et al. (2006). "Finding common ground in team-based qualitative research using the convergent interviewing method." *Qualitative Health Research* 16(8): 1145-1157.

Research councils, agencies, and researchers recognize the benefits of team-based health research. However, researchers involved in large-scale team-based research projects face multiple challenges as they seek to identify epistemological and ontological common ground. Typically, these challenges occur between quantitative and qualitative researchers but can occur between qualitative researchers, particularly when the project involves multiple disciplinary perspectives. The authors use the convergent interviewing technique in their multidisciplinary research project to overcome these challenges. This technique assists them in developing common epistemological and ontological ground while enabling swift and detailed data collection and analysis. Although convergent interviewing is a relatively new method described primarily in marketing research, it compares and contrasts well with grounded theory and other techniques. The authors argue that this process provides a rigorous method to structure and refine research projects and requires researchers to identify and be accountable for developing a common epistemological and ontological position.

Fairbrother, P. and Mathers, N. J. (2004). "Lecturer practitioners in six professions: combining cultures." *Journal of Clinical Nursing* 13(5): 539-46.

BACKGROUND: Whilst research has been undertaken in relation to the lecturer practitioner role in nursing, there have been no cross-professional studies. There is an explicit political agenda in

the United Kingdom on interprofessional education and enhancing the status of those who provide practice-based teaching. AIM: This paper reports a study to investigate the commonalities and differences between lecturer practitioners across professions and to generate hypotheses about the role, which follows different models of practice in the different professions. METHODS: An exploratory research design was adopted, using semi-structured interviews with a purposive sample of lecturer practitioners from six professions (architecture, clinical psychology, law, medicine, nursing and social work). A grounded theory approach was used. FINDINGS: All lecturer practitioners perceived a clear dichotomy between their professional practice role and their university role. All used similar strategies to adapt to and deal with combining two very differently perceived cultures. There were striking similarities in response to the consequences of serving "two masters" in the areas of time management and role identity/definition. CONCLUSIONS: The role not only bridges theory and practice, but has to operate within very different organizational cultures. Further research is needed to test the generalizability of the findings. Relevance to clinical practice. This investigation aims to inform higher education and health service policy on lecturer practitioners, and also provide support for those undertaking this challenging role. The study poses challenging questions for policymakers in the current climate of interprofessional learning, which need to be addressed if future initiatives in this area are to be successful.

Goelen, G., De Clercq, G., et al. (2006). "Measuring the effect of interprofessional problem-based learning on the attitudes of undergraduate health care students." *Medical Education* 40(6): 555-561.

OBJECTIVES: This study aimed to measure the improvement in attitudes towards interprofessional collaboration of undergraduate health care students who have a single module of interprofessional problem-based learning (PBL) using real patients as triggers integrated into their curricula. DESIGN: A dedicated module, consisting of 5 PBL seminars, was integrated into the undergraduate medical, nursing and physiotherapy curricula at the participating institutions. Seminar groups consisted of students from a single profession in the control group, and of evenly distributed students from the participating professions in the intervention group. The Interdisciplinary Education Perception Scale was used to measure improvements in attitudes towards interprofessional co-operation. Patients, faculty members and students were included in the evaluation of the interprofessional module and their comments examined for indications of adverse effects of the use of patients in this setting. RESULTS: A total of 177 students were recruited into the study and assigned to 1 of 16 seminar groups, all of which attended the complete module, 8 in control mode and 8 in intervention mode. Statistically significant improvements could be identified in the overall attitudes of male students in the intervention group, and in attitudes pertaining to the competence and autonomy of individuals in one's own profession in the intervention group as a whole. No significant improvements were detected in the control group. No adverse effects of the use of real patients came to light. CONCLUSIONS: The integration of an interprofessional educational module that requires limited student and faculty time in undergraduate health care curricula may be proven to have an effect. The Interdisciplinary Education Perception Scale may be suitable for measuring such effect. Real patients may continue to contribute to education in this setting.

Harward, D. H., Tresolini, C. P., et al. (2006). "Can Participation in a Health Affairs Interdisciplinary Case Conference Improve Medical Students' Knowledge and Attitudes?" *Academic Medicine* 81(3): 257-261.

Purpose: To explore whether participation in a three-hour health affairs interdisciplinary case conference (HAICC) changed medical students' knowledge and attitudes about the role of interdisciplinary teams in health care. Method: Faculty from ten University of North Carolina at Chapel Hill health professions' schools helped to design the HAICC. Conference goals included improving students' knowledge and attitudes about the skills of various health professions and the benefits of interdisciplinary care. From 2001-04, 2,005 health professions students, including 615 second-year medical students, participated in the HAICC. Working in teams, students, using the World Health Organization's International Classification of Function and Disability, interviewed a standardized patient and, then, developed a patient-centered management plan. A self-report

instrument to assess medical students' knowledge about each of the ten health professions and to assess students' attitudes about working with other health professionals was administered before and after the conference. Repeated measures were used to assess whether medical students' knowledge and attitudes about interdisciplinary teams changed as a result of participating in HAICC. Results: A total of 605 medical students (98.5%) completed both instruments. Following participation in the HAICC, there were significant increases in students' knowledge about the training and skills of all ten professions, the advantages of working in an interdisciplinary team, and the importance of care provided by these professions. In general, there were significant improvements in students' attitudes toward the value of interdisciplinary team work and leadership by all health professionals. Conclusions: Participation in a three-hour HAICC resulted in medical students' increased knowledge about and attitudes toward the role of interdisciplinary teams in health care.

Hayward, K. S., Kochniuk, L., et al. (2005). "Changes in Students' Perceptions of Interdisciplinary Practice Reaching the Older Adult Through Mobile Service Delivery." *Journal of Allied Health* 34(4): 192-198.

This study examined students' perceptions of interdisciplinary health care practice in a facilitated, community-based practicum experience. Students' perceptions of interdisciplinary practice relative to their own profession and other health disciplines were examined before and after involvement in mobile service delivery to the older adult in a collaborative team approach. The Interdisciplinary Education Perception Scale was used to collect data before and after planned and facilitated interdisciplinary experiences of students enrolled in health professional programs (nursing, dietetics, physical therapy, occupational therapy, pharmacy, health education, social work, and physician assistant). Univariate repeated-measures analysis of variance revealed significant pretest to posttest and discipline effects following the interdisciplinary interaction of students in the practicum experience. Univariate analysis revealed a significant change in students' perceptions of professional competence and autonomy, actual cooperation and resource sharing within and across professions, and understanding of the value and contributions of other professionals from pretest to posttest. The findings support the need for educators to facilitate communication through innovative interdisciplinary clinical opportunities for health professions students to influence perceptions that promote active participation in a team approach to care delivery in an increasingly complex health care system.

Hean, S. and Dickinson, C. (2005). "The Contact Hypothesis: An exploration of its further potential in interprofessional education." *Journal of Interprofessional Care* 19(5): 480-491.

This paper highlights the research challenges that face researchers wishing to build the evidence base around interprofessional education (IPE). It concentrates specifically on the short-term impact of IPE on a student population. The Contact Hypothesis is a particularly useful theoretical framework to address these challenges as well as guide the development of IPE interventions. A brief description of this theory and the closely-related theories of social identity and categorization is made in order to support and clarify this theoretical position. The application of the Contact Hypothesis as it has already been made in the IPE field is also described. The paper then addresses how the Contact Hypothesis can be further utilized to address IPE research needs. Through consideration of critique of this theory outside of this field, the development of this framework beyond its early applications to the IPE field are addressed in terms of future direction, the caveats and models of IPE that now require empirical testing.

Hind M, Norman I, Cooper S, et al. 2003. "Interprofessional perceptions of health care students." *Journal of Interprofessional Care* 17(1) 21-34. Effective interprofessional working, which is widely considered as essential to high-quality health care, is influenced by the attitudes of health care professionals towards their own and other professional groups. Relatively little is known, however, about interprofessional attitudes, particularly of students in health care professions. This study aimed to increase our understanding of students' attitudes towards their own and other professional groups on entry to a programme of professional education. Hypothesised relationships between stereotypes, professional identity and readiness for professional learning were tested by means of a questionnaire survey of 933 undergraduate health care students

drawn from five health care groups (medicine, nursing, dietetics, pharmacy and physiotherapy) within a multi-faculty UK university. Positive statistically significant correlations were found between stereotypes, professional identity and readiness for interprofessional learning. As predicted, students identified strongly with their own professional group at the start of pre-registration education. They were also willing to engage in interprofessional learning. More unexpected was the positive association found between heterostereotype and professional identity scores. There are potential benefits of introducing active interprofessional education activities at an early stage of professional preparation to capitalise on students' positive attitudes towards their own and other professional groups.

Horsburgh, M., Perkins, R., et al. (2006). "The professional subcultures of students entering medicine, nursing and pharmacy programmes." *Journal of Interprofessional Care* 20(4): 425-431. This study sought to determine the attitudes, beliefs and values towards clinical work organization of students entering undergraduate medicine, nursing and pharmacy programmes in order to frame questions for a wider study. In the Faculty of Medical and Health Sciences, The University of Auckland students entering medicine, nursing and pharmacy programmes completed a questionnaire based on that used by Degeling et al. in studies of the professional subcultures working in the health system in Australia, New Zealand, England and elsewhere. Findings indicate that before students commence their education and training medical, nursing and pharmacy students as groups or subcultures differ in how they believe clinical work should be organized. Medical students believe that clinical work should be the responsibility of individuals in contrast to nursing students who have a collective view and believe that work should be systemized. Pharmacy students are at a mid-point in this continuum. There are many challenges for undergraduate programmes preparing graduates for modern healthcare practice where the emphasis is on systemized work and team based approaches. These include issues of professional socialization which begins before students enter programmes, selection of students, attitudinal shifts and interprofessional education.

Hudson, B. (2007). "Pessimism and optimism in inter-professional working: the Sedgefield Integrated Team." *Journal of Interprofessional Care* 21(1): 3-15. The literature on inter-professional working tends to be dominated by explanations for lack of progress rather than accounts of achievements. This paper develops two models, termed the optimistic and pessimistic models respectively, to understand the factors that may underpin different rates of interprofessional achievement. A case study of the Sedgefield Integrated Team in County Durham, UK is used to test out aspects of the models. It is concluded that the grounds for pessimism have been overstated and that the scope for professional integration is greater than tends to be assumed.

Kennard, J. (2002). "Illuminating the relationship between shared learning and the workplace." *Medical Teacher* 24(4): 379-84. This investigation represents an attempt to illuminate issues in the relationship between shared learning, aspects of organizational climate, teamwork practices and inter-personal contact between health professionals. The study, completed in 1998 and conducted over the previous 3 years, involved 57 post-qualified health professionals undertaking a part-time 'top-up' degree in health studies. The extent to which climate promoted, maintained or inhibited collaborative practices was considered by examining the views and experiences of course participants over three successive years. Most interest in collaborative practice came from individuals already actively engaged in multidisciplinary work and with a clear sense of role within that context. No evidence was found to associate this form of shared learning with new or enhanced collaborative activity, but nearly all the professions involved accepted the principle of more flexible forms of working. Poor perceptions between disciplines were associated with low levels of contact in the workplace. Students who undertook a module focusing on collaborative practice had more positive perceptions about their work and were less likely to emphasize work demands in terms of shift-patterns, fatigue and/or stress.

Lahey, W. and Currie, R. (2005). "Regulatory and medico-legal barriers to interprofessional

practice." *Journal of Interprofessional Care*. Special Issue: Interprofessional Education for Collaboration Patient-Centred Care Canada as a Case Study 19(Suppl1): 197-223.

Unlike the other contributions to this issue, this paper is concerned with the prospects and potential ramifications of implementing interprofessional practice from the legal standpoint. The authors focus on the two forums where the major legal issues are likely to be played out: the laws under which health care professionals are regulated; and the law of professional malpractice as applied by the courts under the tort of negligence. The goal is to examine the regulatory and medico-legal barriers that might prevent or inhibit health care professionals from working together on an interprofessional basis, and to forecast the kinds of changes within legal systems which will be necessary to accommodate the change.

Lathlean, J, and Le May, A. (2002) "Communities of practice: an opportunity for interagency working." *Journal of Clinical Nursing* 11(3):394-398. A particular approach to collaborative interagency working is that of multiprofessional 'communities of practice'. Four such groups are described in the context of two action research projects, one relating to primary care and the other to outpatient services for dermatology and ENT. The facilitating features, and the challenges and the potential of working in this way, are discussed, both from the point of view of understanding how knowledge is used and valued in such groups and as a useful mechanism for the development of services that span different professional perspectives and involve consumer interests.

Leaviss, J. (2000). "Exploring the perceived effect of an undergraduate multiprofessional educational intervention." *Medical Education* 34(6): 483-6.

CONTEXT: Improved teamwork and greater collaboration between professions are important factors in effective health care. These goals may be achieved by including interprofessional learning in the undergraduate medical curriculum. The Faculty of Medicine at the University of Liverpool organized a pilot two-day multiprofessional course involving all the health care related disciplines. OBJECTIVE: The present study examined the perceived effect of the multiprofessional course on the work practice of these newly qualified health care professionals. METHOD: The views of former students who took part in the pilot course were collected using a semi-structured interview schedule and analysed using a qualitative data analysis software package QSR NU*DIST. RESULTS: Two main themes emerged. These centred around role knowledge and interprofessional attitudes. Data indicated that participants perceived the course to have increased their knowledge of the other professions and that this effect had persisted. Reported benefits to their working practice included facilitating appropriate referrals, increasing professional empathy and awareness of other professionals' skills, raising confidence and heightening awareness of the holistic nature of patient treatment. Participants reported forming negative attitudes towards other professions during their undergraduate education. They believed these had been partly encouraged by course tutors. The pilot course was perceived to have had little effect on these attitudes. Changes occurred once the newly qualified professionals started work. CONCLUSIONS: The results support the idea that interprofessional educational interventions must be tailored to specific learning goals to be implemented successfully, and that interprofessional education should be prolonged and widespread to have a real impact.

Ledbetter, B. L. (2006). "Exploring the intersection of values and leadership for women executives in the for-profit sector." Dissertation Abstracts International Section A: *Humanities and Social Sciences* 67(4-A): 1429.

This qualitative study explored the values and leadership of senior executive women. The moral decline occurring in the world of business demands that attention be paid to this topic. The widespread nature of this crisis has called attention to the importance of connecting effective leadership with moral values. Building on previous research, this study used an interdisciplinary approach to explore the theoretical intersection between values and leadership. Utilizing a qualitative methodology this study investigated the value priorities of women executives, how these executives perceive their values developed, their perceived leadership style, and how they report they actualize their values in their leadership. Data was collected from 10 selected senior level women leaders using a demographic survey, the Rokeach Value Survey and interviews.

Findings from this study suggest the factors influencing the development of values include relationships, experiences, and contexts from childhood and adulthood that were either positive and/or negative. The research indicated that individual value priorities for women executives may be influenced by certain variables including length of time as a senior leader, age, and religious affiliation. The data from the Rokeach Value Survey was analyzed using the Schwartz (1992) 2-dimensional model of value domains to yield more robust results; this analysis indicated that women executives in the study highly value Benevolence and Achievement. It appears from the findings that highly prioritized values are more likely to influence leadership style, impact the culture of the organization, inform the identification of challenges in the workplace and guide decision-making for the senior executives who participated in this study. The findings from this study produced several important topics for future research such as exploring the concept of value conflicts identified by Schwartz in greater depth. The influence of demographic variables in value priorities demands more investigation. Lastly, a developmental theory of leadership and values is yet to be established. This will require an interdisciplinary approach in a way that preserves the integrity of each discipline, yielding insights from each perspective to disclose new dimensions of the phenomena of leadership and values.

Leipzig, R. M., Hyer, K., et al. (2002). "Attitudes toward working on interdisciplinary healthcare teams: a comparison by discipline." *Journal of the American Geriatrics Society* 50(6): 1141-8. Interdisciplinary teams are important in providing care for older patients, but interdisciplinary teamwork is rarely a teaching focus, and little is known about trainees' attitudes towards it. To determine the attitudes of second-year post-graduate (PGY-2) internal medicine or family practice residents, advanced practice nursing (NP), and masters-level social work (MSW) students toward the value and efficiency of interdisciplinary teamwork and the physician's role on the team, a baseline survey was administered to 591 Geriatrics Interdisciplinary Team Training participants at eight U.S. academic medical centers from January 1997 to July 1999. Most students in each profession agreed that the interdisciplinary team approach benefits patients and is a productive use of time, but PGY-2s consistently rated their agreement lower than NP or MSW students. Interprofessional differences were greatest for beliefs about the physician's role; 73% of PGY-2s but only 44% to 47% of MSW and NP trainees agreed that a team's primary purpose was to assist physicians in achieving treatment goals for patients. Approximately 80% of PGY-2s but only 35% to 40% of MSW or NP trainees agreed that physicians have the right to alter patient care plans developed by the team. Although students from all three disciplines were positively inclined toward medical interdisciplinary teamwork, medical residents were the least so. Exposure to interdisciplinary teamwork may need to occur at an earlier point in medical training than residency. The question of who is ultimately responsible for the decisions of the team may be an "Achilles heel," interfering with shared decision-making.

Lindqvist, S., Duncan, A., et al. (2005). "Development of the 'Attitudes to Health Professionals Questionnaire' (AHPQ): a measure to assess interprofessional attitudes." *Journal of Interprofessional Care* 19(3): 269-279.

This paper describes the development and preliminary validation of a measure to investigate interprofessional attitudes and how these attitudes change over time. Items for the questionnaire were elicited from 'construct exercises' with staff from different Health Schools resulting in a 20-item 'Attitudes to Health Professionals Questionnaire' (AHPQ). The questionnaire was completed by first year students from five different health professions. Its structure was evaluated using principal components analysis, the internal consistency was determined and the test-retest reliability assessed. Analysis of these data led to rephrasing/removal of certain items and a revised form of the AHPQ. The revised AHPQ was completed by a different cohort of students and a preliminary validation was carried out. A solution with two main components labelled 'caring' and 'subservient' emerged from analysis of the structure of the initial AHPQ, the overall internal consistency was good although the test-retest reliability varied. Preliminary validation of the revised questionnaire suggested significant differences, on both scales, in students' attitudes towards different health professions at the outset of their training. The AHPQ appears to be a useful instrument for the assessment of interprofessional attitudes in the health professions.

Lingard, L., Espin, S., et al. (2004). "The rules of the game: interprofessional collaboration on the intensive care unit team." *Critical care* 8(6): R403-8.

BACKGROUND: The intensive care unit (ICU) is a nexus for interspecialty and interdisciplinary tensions because of its pivotal role in the care of the hospital's most critically ill patients and in the management of critical care resources. In an environment charged with temporal, financial and professional tensions, learning how to get results collaboratively is a critical aspect of professional competence. This study explored how team members in the ICU interact to achieve daily clinical goals, delineate professional boundaries and negotiate complex systems issues. **METHODS:** Seven 1-hour focus groups were conducted with ICU team members in two hospitals. Participants consisted of four nursing groups (n = 27), two resident groups (n = 6) and one intensivist group (n = 4). Interviews were audio-recorded, anonymized and transcribed. With the use of a standard qualitative approach, transcripts were analyzed iteratively for recurrent themes by four researchers. **RESULTS:** Team members articulated their perceptions of the mechanisms by which team collaboration was achieved or undermined in a complex and high-pressure context. Two mechanisms were recurrently described: the perception of 'ownership' and the process of 'trade'. Analysis of these mechanisms reveals how power is commodified, possessed and exchanged as team members negotiate their daily needs and goals with one another. **CONCLUSION:** Our data provide a non-idealized depiction of how health care professionals function on a team so as to meet both individual and collective goals. We contend that the concept of 'team' must move beyond the rhetoric of 'cooperation' and towards a more authentic depiction of the skills and strategies required to function in the competitive setting of the interprofessional health care team.

Long, D., Forsyth, R., et al. (2006). "The (im)possibilities of clinical democracy." *Health Sociology Review* 15(5): 506-519.

In this article, we argue that homogenising discussions of medical dominance on the meta-level of professions do not fully capture the complexity that characterises current clinical care in multidisciplinary health care teams. We illustrate this through an empirical study of a multidisciplinary team attempting to enact their work in a clinically democratic way. The challenges that arose in putting this into practice highlight the depth and complexity of enculturated medical dominance in Australian hospital practice. Our study shows that effective facilitation of clinician reflexivity has the potential to challenge and change deeply embedded structures and behaviours.

Mann, K. V., Ruedy, J., et al. (2005). "Achievement of non-cognitive goals of undergraduate medical education: Perceptions of medical students, residents, faculty and other health professionals." *Medical Education* 39(1): 40-48.

BACKGROUND: Professionalism is increasingly emphasised in medical education. Non-cognitive goals, including values, attitudes and skills, remain challenging to define and measure. The purpose of this study was to better understand these goals and their achievement in the MD programme. **METHODS:** Graduating medical students, faculty preceptors, residents and other health professionals (OHPs) completed a systematically developed mailed survey, rating achievement of 25 attribute statements. Following analyses of means and standard deviations, factor analysis of responses was conducted. Responses were compared across respondent groups. **RESULTS:** The overall response rate was 50.1% (191/396), comprising 57.5% of the students, 54.1% of the faculty members, 30.9% of the residents and 50% of the OHPs. Five items received mean ratings over 4/5; none were below 3/5. Five factors explained 65% of variance. They were: 'Teamwork and interprofessional skills'; 'Duty and responsibility'; 'Communication and interpersonal skills'; 'Professionalism and values', and 'Trustworthiness and ethical behaviour'. The groups differed significantly on 2 factors: Teamwork and interprofessional skills ($P \leq 0.0001$) and Communication and interpersonal skills ($P \leq 0.001$). **CONCLUSIONS:** Important curriculum goals received high mean ratings. Ratings differed significantly across groups, suggesting differing perceptions of the extent to which goals were met. More study is needed to understand the basis of these perceptions.

McFadyen. A. K., Webster V. S. et al. (2006). "The test re-test reliability of a revised version of the Readiness for Interprofessional Learning Scale (RIPLS)." *Journal of Interprofessional Care* 20(6): 633 – 639.

The original version of the Readiness for Interprofessional Learning Scale (RIPLS) was published by Parsell and Bligh in 1999. The only aspect of reliability considered by the authors was the internal consistency. A revised version for use with undergraduate students was published in 2005 (McFadyen et al., 2005). That paper also reported internal consistency of the revised version. Subsequently a sample from one professional group (n = 65) was used to assess test-retest reliability, over a one week period, of each of the 19 items and of the sub-scale totals, using Weighted Kappa and the intra-class correlation (ICC) respectively, and these results are reported in the present paper. The test-retest reliability of the individual items using Weighted Kappa was satisfactory, with the exception of two items (Items 11 and 12). The ICC results for the sub-scale totals were all in excess of 0.60 with the exception of sub-scale two. This revised version of RIPLS would appear to have good reliability in three of its sub-scales but further research, with larger samples, is required before the fourth sub-scale can be reliably assessed.

McGrath, P., Holewa, H., et al. (2006). "Nursing advocacy in an Australian multidisciplinary context: Findings on medico-centrism." *Scandinavian Journal of Caring Sciences* 20(4): 394-402.

As a follow-up to a recent study which highlighted the existence of medical dominance in multi-disciplinary team (MDT) meetings, this paper presents research findings from an Australian study which shows that medico-centrism is a key cause of tension within MDTs. The findings are from a 1-year qualitative study in a regional hospital that explored the ethical decision-making of health professionals within an acute care medical unit. This exploration was conducted through an iterative, phenomenological, qualitative research methodology that consisted of open-ended interviews with a multi-disciplinary representation of health professionals and a sample of consumers for whom they care. The paper situates the notion of nursing advocacy within the context of medico-centrism and examines how the nursing profession interfaces with other disciplines. The findings indicate that the professional framework of nursing includes the language of advocacy, whilst the framework of doctors centres around the medical decision-making process. All professional groups made reference to the MDT as the modus operandi for patient-centred care. All participants noted that time and familiarity with patients and their families is essential for patient-centred care and this could be achieved through MDT collaboration. However, doctors who have scant time to spend with patients saw it as their responsibility to direct the decisions of the MDT and viewed the MDT as adding confusion to the decision-making process. Nurses reported that the limited amount of time spent by doctors in patient consultation translated into the need for advocacy. Professional and clinical confidence and experience are noted as necessary to successfully engage in the process of advocacy. The findings of this article indicate that the adoption of an advocacy role by nurses represents an important means through which MDT operation can be enhanced, medico-centrism limited and patient-centred care improved.

Mu, K., Chao, C. C., et al. (2004). "Effects of interprofessional rural training on students' perceptions of interprofessional health care services." *Journal of Allied Health* 33(2): 125-31.

Interprofessional training has been advocated in the education of students in health care professions to facilitate collaboration and cooperation among health care providers. This study reported on one facet of the outcomes of a larger grant project funded by the Department of Health and Human Services HRSA grant #1-D36 AH 10082-03, which aimed to develop a new and innovative model for interprofessional student training. Over the 3-year period of the project, a total of 111 students from allied health professions including occupational therapy, physical therapy, and pharmacy participated in the project training. Participants' perceptions on interprofessional service were assessed before and after they participated in the project by the Interprofessional Education Perception Scale. Results of a univariate repeated measures two-way analysis of variance revealed a significant increase in participants' positive perceptions regarding interprofessional practice after they participated in the project ($p < 0.05$), and the significant increases were independent of the duration of the training ($p < 0.01$ for short-term and long-term training). A significant interaction between the duration of the training and pretest and

posttest scores of the participants was found ($p < 0.05$) and students who participated in long-term training reported more positive attitudes on the posttest. These encouraging findings are supported and strengthened further by the qualitative data of the study, suggesting the training project has a significant impact on allied health students' perceptual attitudes toward interprofessional service delivery. Findings of the study are discussed related to the improvement of quality care and to the recruitment and retentions of health care providers in rural and underserved areas.

Oandasan, I. and Reeves, S. (2005). "Key elements for interprofessional education. Part 1: The learner, the educator and the learning context." *Journal of Interprofessional Care*. Special Issue: Interprofessional Education for Collaboration Patient-Centred Care Canada as a Case Study 19(Suppl1): 21-38.

This paper is the first of two that highlights key elements needed for consideration in the planning and implementation of interprofessional educational (IPE) interventions at both the pre and post-licensure qualification education levels. There is still much to be learned about the pedagogical constructs related to IPE. Part 1 of this series discusses the learning context for IPE and considers questions related to the "who, what, where, when and how" related to IPE. Through a systematic literature review that was conducted for Health Canada in its move to advance Interprofessional Education for Patient Centred Practice (IECPCP), this paper provides background information that can be helpful for those involved in an interprofessional initiative. A historical review of IPE sets the international context for this area and reflects the work that has been done and is currently being initiated and implemented to advance IPE for health professional students. Much can be learned from the literature related to the pedagogical approaches that have been tried and the issues that need to be addressed related to the learner, the educator and the learning context which this paper examines.

Pearson, D. and Pandya, H. (2006). "Shared learning in primary care: Participants' views of the benefits of this approach." *Journal of Interprofessional Care* 20(3): 302-313.

This is a study exploring participants' views regarding a series of shared or interprofessional learning sessions carried out in a primary care setting in Bradford, UK. One-hundred-and-twenty-four participants including doctors, practice nurses, nurse practitioners and health visitors attended six expert-led, case-based learning sessions on clinical topics relevant to their work. The evaluation of the sessions is presented, from questionnaire feedback including open responses. Participants had high expectations of shared learning, which was largely met in terms of sharing ideas regarding professional roles and sharing clinical knowledge and skills. Variations between professionals, and between sessions, are noted and discussed. It was concluded that shared or interprofessional learning in the workplace is valued by clinicians, can help improve understanding of professional roles and also enhance clinical learning.

Pullon, S. and Fry, B. (2005). "Interprofessional postgraduate education in primary health care: is it making a difference?" *Journal of Interprofessional Care* 19(6): 569-578.

This paper explores attitudes to, and perceptions of, the impact of interprofessional postgraduate education for primary health care professionals, based on a postal survey of 153 primary health care professionals undertaking postgraduate qualifications in New Zealand. The response rate was 75% (114/153 responses); comprising 79 doctors, 28 nurses, 7 other health professionals. As a result of their postgraduate education, 92% (104/113) reported improvement in their own practice; 68% (72/106) reported a positive influence on their workplace practice. Forty-eight percent (53/111) increased their understanding of their own professional role; 79% (77/98) increased their understanding of another professional groups' skills and competencies. Twenty-two percent (25/114) perceived increased career opportunities within a year; 56% (64/114) in the longer term. Only 12% (14/114) perceived future increases in income as a result of their study. Interprofessional postgraduate qualification study for primary health care professionals in New Zealand resulted in personal and professional benefit for individuals and their clinical practice, and increased understanding about their own and other health professionals' roles. The interprofessional nature of the education was seen as positive, contributing to a modest increase in collaboration between health professional groups. Barriers to furthering participation in

interprofessional learning and increasing intersectorial collaboration in the workplace are identified and discussed.

Salvatori, P. S., Berry, S. C. and Kevin, E. W. (2007). "Implementation and evaluation of an inter-professional education initiative for students in the health professions." *Learning in Health and Social Care* 6 (2): 72–82.

This paper reports the results of a 2-year pilot study that involved 136 students from various health professions in 13 interprofessional education projects in north-western Ontario, Canada. The educational model was based on principles of problem-based, self-directed, small group learning and combined a clinical placement with a series of interprofessional tutorials and other shared learning experiences. Project evaluation entailed the use of both quantitative and qualitative outcome measures. Student ratings revealed a high level of learner satisfaction. There was no change in student perceptions of interprofessional collaboration between pre-test and post-test. A difference was observed between professions, with rehabilitation students having more positive perceptions than medical students. Qualitative analysis of student journals revealed four major themes: (i) new insights into interprofessional roles and the potential for collaboration; (ii) increased understanding of aboriginal culture, spirituality and health beliefs; (iii) new insights into healthcare system issues in rural and remote regions; and (iv) reflections on the benefits and challenges to interprofessional learning. Although barriers to implementing interprofessional education exist, the need to overcome them is critical in order to better prepare health professional students for collaborative practice within a changing healthcare system. Lessons learned and strategies for success are discussed.

Scherpereel, C. M. (2006). "Decision orders: A decision taxonomy." *Management Decision* 44(1): 123-136.

Purpose: The proper identification of a decision problem is paramount to finding a course of action or solution. This paper attempts to capture the general laws or principles that define decision problems. These principles are then used to establish a decision classification system called the decision-order taxonomy. Design/methodology/approach: The decision-order taxonomy is developed by performing a content analysis on the seminal literature in the natural, social, and applied sciences. By identifying the semantic descriptors used to partition various domains, an implicit taxonomy for proper identification of decision problems is hypothesized. Findings: The multidimensional taxonomic classification system and defined nomenclature, together with the identification process, comprise the complete decision-order taxonomy developed in this paper. While applying the decision-order taxonomy to an actual decision problem, insights are exposed which will guide the decision maker toward appropriate solution methodologies. Research limitations/implications: The theoretical foundation developed can be used to promote future research in decision classification. By providing a theoretically derived model, rich opportunities to test the taxonomy empirically are offered. Researchers are also given a foundation upon which they can build interdisciplinary decision models. Practical implications: For practitioners, the decision-order taxonomy provides a new paradigm for communicating decision problems across disciplinary boundaries. The taxonomy also provides guidance to the practitioner as they search for appropriate solution methodologies in unfamiliar disciplines. Originality/value: The establishment of a useful decision-problem taxonomy is a significant contribution to understanding the multidimensional interdisciplinary nature of real world decision problems. The original classifications will promote cross disciplinary communication, a central element in business success.

Schmitt, M. (2006). "Interprofessional approaches to creating safe, high quality health care." *Journal of Interprofessional Care* Special Issue: Interprofessional Approaches to Patient Safety 20(5): 455-457.

The goal of this themed issue is to highlight conceptual and empirical work focusing on interprofessional approaches to and best practices for creating safe, high quality, health care. Seven papers comprise the themed portion of this issue. The first three are about safety in the operating theatre. Research and practice efforts to improve the interprofessional teamwork aspects of patient safety in surgical settings depend on the ability to validly and reliably measure

and, subsequently, assess interprofessional working in the processes of care. One of the papers describes an experimentally-designed Norwegian pilot educational research project to teach small, interprofessional groups of learners aviation-based Crew Resource Management (CRM) theory and approaches to patient safety. Two excellent commentaries accompany the issue. The diversity of the contributions to this edition of the journal bears witness to the vibrancy of thinking and development aimed at providing safe, high quality, collaborative care for patients and clients around the globe.

Scholes, J. and Vaughan, B. (2002). "Cross-boundary working: implications for the multiprofessional team." *Journal of Clinical Nursing* 11(3): 399-408.

This paper explores cross-boundary working and the impact it may have on the manner in which multiprofessional teams function. It draws on data collected for a study commissioned by the Department of Health, Human Resource Initiative entitled Evaluating New Roles in Practice (ENRiP). A series of case studies formed one part of the study that aimed to map the process of implementation of new roles in practice, identify the organizational barriers and levers that affected the implementation process and explore the meaning of the new roles from the perspective of postholders, patients and stakeholders. A naturalistic approach to enquiry was taken using a combination of participant observation, interviews and reflection. The article includes an overview of the current context in which cross-boundary work is developing, a review of current literature related to multiprofessional issues and team-working, a brief description of the typology of new roles that emerged as one strand of the ENRiP study, and the impact that these roles had on both interprofessional and multiprofessional working. It concludes with a discussion of the implications for practice and the need to ensure that both education and policy are considered in planning for the future.

Stokols, D. (2006). "Toward a Science of Transdisciplinary Action Research." *American Journal of Community Psychology* 38(1-2): 63-77.

This paper offers a conceptual framework for establishing a science of transdisciplinary action research. Lewin's (1951) concept of action research highlights the scientific and societal value of translating psychological research into community problem-solving strategies. Implicit in Lewin's formulation is the importance of achieving effective collaboration among behavioral researchers, community members and policy makers. The present analysis builds on Lewin's analysis by outlining programmatic directions for the scientific study of transdisciplinary research and community action. Three types of collaboration, and the contextual circumstances that facilitate or hinder them, are examined: (1) collaboration among scholars representing different disciplines; (2) collaboration among researchers from multiple fields and community practitioners representing diverse professional and lay perspectives; and (3) collaboration among community organizations across local, state, national, and international levels. In the present analysis, transdisciplinary action research is viewed as a topic of scientific study in its own right to achieve a more complete understanding of prior collaborations and to identify strategies for refining and sustaining future collaborations (and their intended outcomes) among researchers, community members and organizations.

Tunstall-Pedoe, S., Rink, E., et al. (2003). "Student attitudes to undergraduate interprofessional education." *Journal of Interprofessional Care* 17(2): 161-72.

Interprofessional education in health care has been the focus of increasing attention in recent years. However, there is still great debate about when and how to introduce it in undergraduate studies. St George's Hospital Medical School with the Joint Faculty of Health Care Sciences of Kingston University was ideally placed to introduce, as part of its 1996 new curriculum, a Common Foundation Programme (CFP). This incorporated degree students in medicine, radiography, physiotherapy, and nursing learning together for the first term of their courses. As part of the evaluation of the CFP, students' attitudes to the course and each other were surveyed at the beginning and the end of the term, for the 1998 and 1999 intakes. The results showed that students arrive at university with stereotyped views of each other, and that these views appeared to become more exaggerated during the CFP. Students felt that the CFP would enhance interprofessional working, but there were concerns that it forced them to learn irrelevant skills.

Students whose parents worked as health care professionals, held stronger stereotyped views. Our findings challenge any notion that students arrive without preconceived ideas about the other professions. Further work is needed to determine how best to break down stereotypes, and to advance our understanding of the most appropriate models for interprofessional education, to enable graduates to work effectively in today's environment.

Verma, S., Medves, J., et al. (2006). "Demonstrating interprofessional education using a workshop model." *Journal of Interprofessional Care* 20(6): 679-681.

The authors developed a programme of education and research called the Queen's University Inter-professional Patient-Centred Education Direction (QUIPPED). The two-hour workshop described in this paper was an early outcome of the QUIPPED inter-professional education (IPE) approach to faculty development and was part of an international conference hosted by IECPCP in Canada. The workshop described herein provided discrepant experiences in relation to realistic case studies: participants were prompted to reflect upon the limitations in their inter-professional knowledge as they assumed the roles of health care providers from professions other than their own. A literature search revealed 46 English language papers that reported the results of inquiries into IPE based on action research, but none of those studies used the critical Action Research paradigm described in this paper. There were 17 workshop participants: physicians, nurses, and others from a variety of disciplines. Questions solicited information regarding ease of communication among health care professions, benefits of inter-professional health care, and functioning of inter-professional teams. The data indicated that the workshop enlarged participants' knowledge of the attitudinal stances needed to promote effective inter-professional functioning, particularly the necessity for equitable communication and collaboration.

Verma, S., Paterson, M., et al. (2006). "Core competencies for health care professionals: what medicine, nursing, occupational therapy, and physiotherapy share." *Journal of Allied Health* 35(2): 109-115.

This paper describes the amalgamation of the core competencies identified for medicine, nursing, physical therapy, and occupational therapy and the "harmonization" of these competencies into a framework for interprofessional education. The study was undertaken at a Canadian university with a Faculty of Health Sciences comprised of three schools (namely, medicine, nursing, and rehabilitation therapy). Leaders in interprofessional education began to identify the common standards for the core competencies expected of learners in all three schools at commensurate levels to facilitate the integration of educational curricula aimed at interprofessional education across the Faculty. The model that was created serves as a basis for curriculum design and assessment of individuals and groups of learners from different domains across and within the four professions. It particularly highlights the relevance of cross-disciplinary competency teaching and 360-degree evaluation in teams. Most importantly, it provides a launch pad for clarifying performance standards and expectations in interdisciplinary learning.

Wilcock, P. M., Campion-Smith, C., et al. (2002). "The Dorset Seedcorn Project: interprofessional learning and continuous quality improvement in primary care." *British Journal of General Practice* 52 Suppl: S39-44.

There is a need to develop models of practice-based learning that are effective in bringing about improvement in the quality of care that patients receive. This paper describes a facilitated practice-based project where five general practices in Dorset formed interprofessional teams that worked over a six-month period using a continuous quality improvement (CQI) approach to make a change in areas of importance to them. All the teams completed the project and planned and implemented demonstrable changes. Qualitative enquiry showed changes in relationships and teamworking that extended beyond the specific topic of the project with teams reporting an enhanced sense of competence and achievement. The project facilitators were able to develop a model of learning that acknowledges and utilises the depth of experience and understanding within interprofessional practice teams. Protected time and an environment and processes that encourage full participation of a wide range of team members is essential.

Zwarenstein, M. and Reeves, S. (2006). "Knowledge translation and interprofessional collaboration: Where the rubber of evidence-based care hits the road of teamwork." *Journal of Continuing Education in the Health Professions* 26(1): 46-54.

Knowledge-translation interventions and interprofessional education and collaboration interventions all aim at improving health care processes and outcomes. Knowledge-translation interventions attempt to increase evidence-based practice by a single professional group and thus may fail to take into account barriers from difficulties in interprofessional relations. Interprofessional education and collaboration interventions aim to improve interprofessional relations, which may in turn facilitate the work of knowledge translation and thus evidence-based practice. We summarize systematic review work on the effects of interventions for interprofessional education and collaboration. The current evidence base contains mainly descriptive studies of these interventions. Knowledge is limited regarding the impact on care and outcomes and the extent to which the interventions increase the practice of evidence-based care. Rigorous multimethod research studies are needed to develop and strengthen the current evidence base in this field. We describe a Health Canada-funded randomized trial in which quantitative and qualitative data will be gathered in 20 general internal medicine units located at 5 Toronto, Ontario, teaching hospitals. The project examines the impact of interprofessional education and collaboration interventions on interprofessional relationships, health care processes (including evidence-based practice), and patient outcomes. Routes are suggested by which interprofessional education and collaboration interventions might affect knowledge translation and evidence-based practice.

Appendix 1: Research instruments from journal articles cited as at July 2007

Research Instruments	Author	Journal Details
Attitudes to Health Professionals Questionnaire	Lindqvist S. et al. (2005)	Journal Interprofessional Care 2005;9(3):269-279
Bales Interaction Process Analysis Tool	Atwal, A, and Caldwell, K. (2005)	Scandinavian Journal of Caring Science 2005;19:268–273
Barnes et al stereotyping tool	Hean et al. (2006)	Journal Interprofessional Care 2006;20(2):162-181
Barr categorisation of IPE models	McNair R et al. (2005)	Journal Interprofessional Care 2005;19(6):579-594
Campbell's Phased Approach	Cooper H. and Spencer-Dawe E. (2005)	Journal of Interprofessional Care 2005;19(5):492-508
Collaboration and Satisfaction About Care Decisions Scale	Russell L et al. (2006)	Journal Interprofessional Care 2006;20(1):29-39
Communication and Teamwork Scale	Pollard K. et al. (2006)	Health & Social Care in the Community 2006;14 (6):541-552
Communities of Practice	Lathlean J, and Le May A. (2002)	Journal of Clinical Nursing - May 2002 11(3):394-398
Complexity Theory	Cooper H, Spencer-Dawe E. (2005)	Journal of Interprofessional Care 2005;19(5):492-508
Convergent Interviewing Technique	Driedger S. M. et al. (2006)	Qualitative Health Research 2006;16(8):1145-1157
Crew Resource Management CRM	Schmitt M. (2006)	International Approaches to Patient Safety 2006;20(5):455-457
Degeling et al Questionnaire	Horsburgh M. et al. (2006)	Journal of Interprofessional Care 2006;20(4):425-431
Delphi Technique	Bray J, and Howkins, E. (2006)	Work Based Learning in Primary Care 2006; 4(3): 223-235
D'Eon's Frameworks for IPE	D'Eon M. (2005)	Journal Interprofessional Care 2005;(Suppl1):49-59
Diffusion of Innovation Framework	Rodehorst T. K, and Wilhelm S.L. (2005)	Journal of Professional Nursing 2005; 21(3):159-166
Downstate Team Building Initiative (DTBI)	Hope J. M. et al. (2005)	Patient-Centred Care 2005; 80(1):74-83
Entry-Level Interprofessional Questionnaire (ELIQ) Interim (IIQ), Final (FPQ)	Pollard K.C. et al. (2006)	Health and Social Care in the Community 2006;14(6):541-552
Felsher and Ross Survey	Insalaco D, et al. (2006)	Journal of Allied Health 2006;35(3):142-146
Generic Role Perception Questionnaire	Mackay S. (2004)	Journal of Interprofessional Care 2004;18(3):289-302
Grounded Theory Analysis	Barker K, et al. (2005)	Journal of Interprofessional Care 2005;(Suppl1):166-176
Group Emotional Intelligence Questionnaire	Amundson S. J. (2005)	Health Care Manager 2005;24(3):216-224
Health Care Stereotypes Scale	Hind M. et al. (2003)	Journal of Interprofessional Care 2003;17(1):21-34

Research Instruments	Author	Journal Details
Healthy Teams Model	Mickan S, and Rodger S. (2005)	Journal of Interprofessional Care 2005;19(4):358-370
Interprofessional Education Perception Scale	Mu K. et al. (2004)	Journal of Allied Health 2004;33(2):125-131
Interprofessional Interaction Scale	Pollard K.C. et al. (2004)	Health & Social Care in the Community 2004;12 (4):346-358
J. Richard Hackman's Framework on team effectiveness	Martin E. R. (2006)	Journal of Medical Library Association 2006;94(3):274-278
Jefferson Scale of Attitudes Towards Physician Nurse Collaboration	Hojat M. et al. (2003)	International Journal of Nursing Studies 2003;40(4):427-435
Kirkpatrick Barr et al. Framework	Carpenter J, et al. (2006)	Journal of Interprofessional Care 2006;20(2):145-161
Kirkpatrick's Model of Educational Outcomes	Oandasan I, and Reeves S. (2005)	Journal of Interprofessional Care 2005;(Suppl1):39-48
Martin's Framework of Culture	Braithwaite J. et al. (2005)	Social Science and Medicine 2005;60(5):1149-1162
Moos & Schaefer Organisational Climate Questionnaire	Kennard J. (2002)	Medical Teacher 2002;24(4):379-384
Nursing Role Perception Questionnaire	Mackay S. (2004)	Journal of Interprofessional Care 2004;18(3):289-302
Patchwork Text	Crow J, and Smith L. (2005)	Learning Health and Social Care 2005;4(3):117-128
Professional Identity Scale	Hind M. et al. (2003)	Journal of Interprofessional Care 2003;17(1):21-34
Quebec Community Health Care Centre Collaborative Model	Sicotte C. et al. (2002)	Social Science and Medicine 2002;55(6):991-1003
Reflective Analysis and Team Building Guide	Mickan S, and Rodger S (2005)	Journal of Interprofessional Care 2005;19(4):358-370
Readiness for Interprofessional Learning Scale (RIPLS) Revised	McFadyen A.K. et al. (2006)	Journal Interprofessional Care 2006;20(6):633-639
Rokeach Value Survey	Ledbetter B.L. (2006)	Humanities and Social Sciences 2006;67(4-A):1429
Schwartz 2 Dimensional Model of Value Domains	Ledbetter B.L. (2006)	Humanities and Social Sciences 2006; 67(4-A):1429
System for the Multiple Level Observation of Groups (SYMLOG)	Cashman S, and Reidy, P. (2004)	Journal Interprofessional Care 2004;18(2):183-196
Teamwork in Healthcare Inventory	Mickan, S. & Rodger, S. (2005)	Journal Interprofessional Care 2005;19(4):358-370
The Contact Hypothesis	Hean S, and Dickinson C. (2005)	Journal Interprofessional Care 2005;19(5):480-491
Tuckman's 4 Stage Team Development Stages	Hope J.M. et al. (2006)	Academic Medicine 2006;80(1):74-83

Appendix 2: Main purpose for research tools and methods identified

Type	Authors	Attitudes & perceptions	Communication	Decision making	Education & learning	Groups, teams, collaboration	Practice, climate, values
Action Research	Atwal and Caldwell 2005					√	√
	Hardacre and Keep 2003				√		√
	Lathlean and Le May 2002		√			√	√
Frameworks, approaches, classifications	Braithwaite and Westbrook 2005		√			√	√
	Carpenter et al 2006				√		
	Cooper et al. 2005				√	√	
	D'Eon 2005				√	√	
	Hean and Dickinson: 2005	√			√	√	
	Hope and Lugassy et al:2005	√			√	√	
	Martin 2006					√	
	Rodehorst and Wilhelm et al 2005				√		√
	Schmitt 2006					√	√
Interviews & surveys	Barker, Bosco and Oandasan: 2005		√		√	√	√
	Cashman, Reidy et al :2004				√	√	
	Driedger and Gallois:2006						
	Insalaco et al. 2006	√				√	√

Type	Authors	Attitudes & perceptions	Communication	Decision making	Education & learning	Groups, teams, collaboration	Practice, climate, values
	Ledbetter: 2006	√		√			√
	Russell et al 2006			√	√		
	Sicotte et al.2002				√	√	√
	Stew 2005				√		
Models	Amundson 2005	√				√	√
	Carpenter and Reeves 2005				√		
	Hope et al. 2005				√	√	
	Ledbetter 2006						√
	McNair et al. 2005				√		√
	Mickan and Rodger 2005	√	√			√	√
	Oandasan and Reeves 2005				√		√
Questionnaires	Amundson, 2005					√	
	Braithwaite and Westbrook 2005	√			√	√	√
	Crow and Smith, 2004				√	√	
	Hean et al. 2006	√			√		
	Heinemann et al, 1999	√					
	Hind et al: 2003	√			√	√	√
	Hojat and Nasca et al 2001	√					√
	Hope and Lugassy 2006	√				√	√
Scales	Horsburgh et al, 2006	√					
	Kennard, 2002	√			√	√	√
	Lindqvist, 2005	√					

Type	Authors	Attitudes & perceptions	Communication	Decision making	Education & learning	Groups, teams, collaboration	Practice, climate, values
	Mackay, 2004	√					
	McFadyan and Webster, 2007				√		
	Mu, Chao et al 2004	√			√		
	Parsell and Bligh 1999	√			√		
	Pollard et al, 2006	√				√	
	Pollard et al, 2004	√			√	√	
	Russell, L. et al 2006			√	√		
Techniques, observation	Atwal and Caldwell, 2005		√			√	√
	Braithwaite and Westbrook 2005	√			√	√	√
	Bray and Howkins, 2006.				√		
	Cooper, Spencer-Dawe et al, 2005					√	
	Hean et al, 2006	√			√	√	
	Schmitt 2006				√	√	