
The Dynamic Interplay between Professional Identity, Threat and Context within Interprofessional Health Care Teams

Karen Anne McNeil

BComm, MBA(with Merit)

A thesis presented in fulfilment of the requirements
for the Degree of Doctor of Philosophy in
Management

University of Newcastle

September, 2014

Declarations

Statement of Originality

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968.

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Dated

(Karen A McNeil)

Thesis by Publication

I hereby certify that this thesis is in the form of a series of published papers of which I am a joint author. I have included as part of the thesis a written statement from each co-author, endorsed by the Faculty Assistant Dean (Research Training), attesting to my contribution to the joint publications.

Signed

Dated

(Karen A McNeil)

Acknowledgments

The road travelled to completing a PhD is not an easy one, and I wouldn't have reached the destination without the ongoing support of my supervisors, colleagues and family.

I have been very fortunate to be guided by three excellent supervisors, Associate Professor Rebecca Mitchell, Associate Professor Suzanne Ryan and Professor Vicki Parker, who have been so generous with their time, have provided thoughtful feedback, and have been patient and reassuring when things have not progressed according to plan. I also wish to extend my appreciation to the other team members of the Rural Interprofessional Project, Michelle Giles, Professor Penny Paliadelis, Dr Glenda Parmenter and Yvonne Ahrens, who have been such a pleasure to work with.

Finally, I want to thank my family for their unfailing encouragement, and the daily reminders about the important things beyond research and writing. To my wonderful husband, David and my two lovely children, Ellen and Matthew, thank you for your warmth and understanding and your quiet confidence in my ability to complete my PhD. To my remarkably supportive parents, thank you for being such an important part of our lives; knowing that you are there makes the journey so much easier.

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2 List of Publications Included in the Thesis

Paper 1:

McNeil, K., Mitchell, R., & Parker, V. (2013). Interprofessional Practice and Professional Identity Threat. *Health Sociology Review* 22(3), 291-307. doi: 10.5172/hesr.2013.22.3.291

Paper 2:

Mitchell, R., Paliadelis, P., McNeil, K., Parker, V., Giles, M., Higgins, I., Parmenter, G. & Ahrens, Yvonne. (2013). Effective interprofessional collaboration in rural contexts: a research protocol. *Journal of Advanced Nursing*, 69(10), 2317-2326. doi: 10.1111/jan.12083

Paper 3:

Parker, Vicki, McNeil, Karen, Higgins, Isabel, Mitchell, Rebecca, Paliadelis, Penelope, Giles, Michelle, & Parmenter, Glenda. (2013). How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study. *BMC Health Services Research*, 13(1), 500. doi: 10.1186/1472-6963-13-500

Paper 4:

McNeil, K., Mitchell, R., & Parker, V. (2014). The paradoxical effects of workforce shortages on rural interprofessional practice. *Scandinavian Journal of Caring Sciences*, Article first published online: 21 Mar 2014. doi: 10.1111/scs.12129

The author's final versions of these publications have been included in Section 7 of this thesis.

3 List of Additional Publications

The following additional publications are relevant to the thesis and are referred to in discussion, but are not included in it.

Additional Publication 1:

Mitchell, R., McNeil, K., & Boyle, B. (2013). *Bridging professional boundaries through superordinate identity and transformational leadership*. Paper presented at the 27th Australian and New Zealand Academy of Management (ANZAM) Conference: Managing on the Edge, Hobart, Tasmania.

Additional Publication 2:

Mitchell, R., Boyle, B., Parker, V., Giles, M., McNeil, K., Joyce, P., & Chiang, V. (2014). *Making Good on a Threat: Leading Innovation across Professional Boundaries*. Paper presented at the British Academy of Management Conference: The Role of the Business School in Supporting Economic and Social Development, Belfast Waterfront, Northern Island.

The author's final versions of these publications have been included in Section 8 of this thesis.

4 Abstract

Interprofessional practice has garnered widespread attention in the literature, yet current evidence does not elucidate the key mechanisms and contextual factors that determine its outcomes. This thesis by publication, arranged in the form of an overview, four core publications and two ancillary papers, addresses the question of how professional identity, identity threat and context interact to impact on interprofessional working.

Professional identity underpins much of what occurs in interprofessional health care teams. Threats to valued professional identities can activate faultlines within teams and trigger tensions, conflict and underperformance, if not adequately managed. These threats can take the form of differential treatment of professional subgroups; divergent values and norms; and assimilation or devaluing of other professions. As the perception of threat is context dependent, this research focuses on rural settings where professional boundaries can be less distinct.

This study was part of a larger project investigating the enablers of, and barriers to, effective interprofessional practice in an Australian rural health care context. Health practitioners representing various settings, functions, locations and professional backgrounds were interviewed to gather data on the contexts, mechanisms and outcomes of interprofessional practice. Independent content and thematic analyses were integrated to present the findings.

The findings show that many rural clinicians were motivated to engage in interprofessional practice, and in doing so embraced flexible approaches and role overlap as a means to manage workforce pressures and overcome professional isolation. In contrast, interprofessional working was stymied by some practitioners who observed strict role boundaries and traditional hierarchies and who were reluctant to consider input from other health disciplines. However, workload sharing and role flexibility is limited in its application and cannot overcome continued skill deficits in rural health services. Moreover, extended role overlap or any hint of genericism is likely to provoke professional identity threat as individual professions need to maintain their distinctiveness and claims to unique expertise. Leadership strategies are required to balance a shared team identity with the salient professional identities characteristic of health care contexts.

This is one of the first studies to examine the interplay between professional identity, professional identity threat and context, with particular reference to interprofessional practice in rural settings. By employing a sociological lens to examine the mechanisms and contexts of interprofessional practice, it advances our knowledge of the nature of collaboration between the professions and how interprofessional activities translate in the workplace.

5 Glossary of Terms

Acronym	Definition
AMA	Australian Medical Association
ARC	Australian Research Council
BMC HSR	BMC Health Services Research
CEM	Categorisation-Elaboration Model
CMO	Context + Mechanism = Outcomes model
CNC	Clinical Nurse Consultant
GP	General Medical Practitioner
HSM	Health Services Manager
HSR	Health Sociology Review
IMO	Input, mediators and output model
IPE	Interprofessional Education
IPP	Interprofessional Practice
JAN	Journal of Advanced Nursing
JCR	Thomson Reuters Journal Citation Reports
LHD	Local Health District
MO	Medical Officer
MPS	Multi-Purpose Services
NSW	New South Wales
NM	Nurse Manager
NP	Nurse Practitioner
OT	Occupational Therapist
RN	Registered Nurse
SJCS	Scandinavian Journal of Caring Sciences

6 Thesis Overview

The following explanatory overview of the thesis links the published papers to the overall research thesis. It begins with an introduction that includes the study purpose and aims, research questions and an outline of the methodology, discussion and implications. This introductory section also describes the significance and contribution of the thesis, how the key concepts are integrated and how the thesis is structured. This is followed by the literature review which discusses the terminology used, teamwork and interprofessional practice in health care, the unique characteristics of rural interprofessional practice, and three theoretical approaches to understanding interprofessional practice. The remainder of the thesis overview outlines the research design and method informing the empirical papers, synthesises the findings and discussion from all the papers, and explains practice implications and potential future research.

6.1 Introduction

For over twenty years, interprofessional health care teams, comprising health practitioners from various disciplinary backgrounds, have been endorsed internationally in government health policies as being key to improving service delivery, patient outcomes and resolving service and sectorial gaps (Chesters, Thistlethwaite, Reeves, & Kitto, 2011; McDonald, Jayasuriya, & Harris, 2012; Pollard, Sellman, & Senior, 2005). Yet the existence of policy directives exhorting clinicians to engage in team-based care in collaboration with other health professions does not necessarily translate to effective practice (Hudson, 2002; Proenca, 2007). Teamwork and interprofessional practice are subject to local interpretation (Klarare, Hagelin, Fürst, & Fossum, 2013) and individual discretion (Hudson, 2002), and health policies are often not cognisant of the underlying professional differences that can contribute to interprofessional teams not achieving their desired outcomes (Kitto, Reeves, Chesters, & Thistlethwaite, 2011). The thesis of this research is that professional identity, professional identity threat and context together are crucial to understanding why interprofessional teams in health care continue to elicit inconsistent outcomes. An awareness and open discussion of these critical factors that underlie professional relationships in health care will enable health service managers and clinicians to more effectively avail themselves of the collective knowledge and skills of the team, and deliver improved services for their patients.

6.1.1 Study Purpose and Aims

The primary aim of the study was to explore the role of professional identity in interprofessional practice (IPP). In addition, the study aimed to uncover the elements related to professional identity and context through an examination of the factors and mechanisms contributing to effective interprofessional practice in rural areas.

6.1.2 Research Questions

- i. How does professional identity impact on interprofessional practice?
- ii. How do professional identity and contextual factors interact in rural health care centres?
- iii. How can the potentially negative impact of professional identity be mitigated in interprofessional teams?

6.1.3 Method

This study was part of a broader research project investigating the factors contributing to effective interprofessional practice in rural contexts. In recognition of the unique, informal and variable nature of rural health service delivery (Bourke, 2012; Brems, Johnson, Warner, & Roberts, 2006; Chipp, Johnson, Brems, Warner, & Roberts, 2008), a qualitative research design was adopted based on the Input-Mechanism-Output (IMO) model (Ilgen, Hollenbeck, Johnson, & Jundt, 2005) and the Context-Mechanism-Output (CMO) model (Pawson & Tilley, 1997). The research project was approved by the Hunter New England Human Ethics Committee (August 2010).

To overcome some of the inherent challenges in participant recruitment in rural settings, a sampling approach to capture the views and experiences of informants from a range of disciplines across various sectors, locations and hierarchical levels was used. The 22 participants were recruited from an Australian local health district (LHD) which covers urban, regional and rural settings in coastal and inland areas of New South Wales (NSW). Representatives from the medical, nursing, social work, speech pathology and occupational therapy professions were invited to participate.

Data collection entailed one-on-one interviews which included structured and non-structured elements (Cavana, Delahaye, & Sekaran, 2001). Interview questions were based on the IPP literature and related to: the benefits of IPP; how participants were engaged in IPP; the processes of IPP; the barriers to, and enablers of IPP; and their suggestions for change. Content and thematic analysis initially involved members of the research team independently coding the data using the following headings: contexts (who, what, where), mechanisms/processes (how, why, why not) and outcomes. These independent analyses were then synthesised, populated with representative quotes and endorsed by all members of the research team.

The candidate was part of an eight member research team and had a major role in the development and refinement of the research project's design and method, was one of three team members involved in data collection, and had a primary role in data analysis and synthesis.

6.1.4 Discussion

In essence, this thesis argues that the interplay between professional identity, professional identity threat and context is instrumental in determining interprofessional outcomes. Furthermore, appropriate leadership strategies can mitigate the tensions between salient professional identities and IPP, while elements of the rural context can assist in overcoming professional differences.

Although IPP has been widely researched, to date this has only provided limited data on the nature of collaboration between the professions in practice (Reeves, 2010). By drawing on social identity theory and social categorisation (Kreindler, Dowd, Dana Star, & Gottschalk, 2012; Tajfel, 1982b; Tajfel & Turner, 1986), this thesis demonstrates that when salient professional identities are threatened within interprofessional teams, then conflict and tension can ensue. By applying Chrobot Mason et al.'s (2009) typology in *Paper 1: Interprofessional Practice and Professional Identity Threat*, this thesis has identified a range of identity threat triggers, including: differential treatment of the health professions; divergent professional cultures, norms and modes of practice; devaluing or ignorance of the contribution that other professional groups can make to patient care; and where blurring of professional boundaries results in professions losing claims to their distinctive expertise. The analysis also recognises the impact of the broader socio-historical context on the interactions between the different professional groups in the workplace. Nevertheless, threats to professional identity are context dependent, and what might be construed as threatening in one context, may be perceived as positive or neutral in another (Kreindler et al., 2012).

The centrality of context led us to investigate IPP in rural health services in Australia, a setting which has received limited attention in the IPP literature (Blue & Fitzgerald, 2002; Mitchell, Paliadelis, et al., 2013). Our research, discussed in *Paper 3: How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study* and *Paper 4: The paradoxical effects of workforce shortages on rural interprofessional practice*, identifies a number of barriers to, and enablers of, IPP in the rural context, but it also reinforces the importance of the interaction between issues associated with professional identity and context. The study reveals that most informants were motivated to engage in IPP, and many adopted expanded and flexible roles to accommodate workforce pressures in rural settings. Flexibility and role overlap

enabled clinicians to share the load and provide mutual support to colleagues from other professions. However, some practitioners continued to observe strict role boundaries and traditional professional hierarchies and were reluctant to consult with other professionals in care decisions. Nevertheless, workload sharing between the professions was limited in its ability to overcome the impact of continuing vacancies and the absence of critical skills in the team. Additionally, there is a risk that if role overlap is pushed too far then threats to professional identity can be triggered.

Effective leadership strategies play a key role in moderating the negative impact of professional identity threats. These strategies are discussed in *Paper 1: Interprofessional Practice and Professional Identity Threat*; *Additional Paper 1: Bridging professional boundaries through superordinate identity and transformational leadership*; and *Additional Paper 2: Making Good on a Threat: Leading Innovation across Professional Boundaries*. The thesis argues that managers can lessen the likelihood of conflict by promoting a collective team identity while acknowledging and valuing the distinctive professional identities in the team (Callan et al., 2007; Hornsey & Hogg, 2000b; Lau & Murnighan, 1998; Mitchell, Parker, & Giles, 2011). Furthermore, transformational leaders can alleviate the negative consequences of professional identity salience by motivating and inspiring team members through positive emotion (Bass & Avolio, 1995; Dubinsky, Yammarino, Jolson, & Spangler, 1995); restoring a positive team climate following a negative experience (Pirola-Merlo, Härtel, Mann, & Hirst, 2002; Weiss & Cropanzano, 1996); and through promotion of collaboration and resilient interpersonal relationships (Farrell et al., 2005; Jung & Avolio, 2000). Notably, leader inclusiveness is also shown to harness the positive effects of professional identity threat by providing a context where professional subgroups are encouraged to voice and defend their viewpoints, and thus the team strives to produce innovative solutions which accommodate divergent opinions.

6.1.5 Implications

The implementation of IPP is complex and challenging (Brownie, Thomas, McAllister, & Groves, 2014; Loxley, 1997), and hence it is critical that health service managers are cognisant of the contexts and mechanisms influencing IPP, as well as the factors that contribute to its success and failure (Doran et al., 2002; Proenca, 2007). This thesis

highlights the importance of professional identity threats and context, and how appropriate leadership strategies can mitigate their negative consequences.

Threats to professional identity can occur in a number of ways in interprofessional teams. Our research reveals that one of the most persistent barriers to IPP is a lack of awareness of other health professions' roles and the expertise that they can bring to patient care. This ignorance can be borne by a perception that one profession's knowledge and skills are more 'valuable' than others (Baker, Egan-Lee, Martimianakis, & Reeves, 2011), which can be construed as insulting or humiliating, and thus trigger professional identity threat. In rural settings, this lack of interprofessional knowledge would be most effectively developed by team leaders on-the-job, given persistent resourcing challenges (Senate Community Affairs References Committee, 2012).

Silo-based education and enculturation processes have also resulted in the health professions developing diverse norms, values and cultures (Ajjawi & Higgs, 2008; Clark, 1997; Sharpe & Curran, 2011), as well as different views about what constitutes effective teamwork (Finn, 2008; Haddara & Lingard, 2013; Reeves & Lewin, 2004). Integration of these different perspectives within the interprofessional team can be facilitated by leader inclusiveness (Nembhard & Edmondson, 2006), as well as by providing the opportunity for the team to reflect upon collaborative processes (Nisbet, Lincoln, & Dunn, 2013; Ovretveit, 1997).

Our rural study also highlights the pivotal role of boundary spanners, such as general practitioners (GPs) and nurses in particular roles to bridge the gaps between the different professions and health sectors. However, GPs acting as gatekeepers to other health providers has been shown to be problematic due to ambiguous role definitions (Lockhart, 2006), perceived threats to professional status and power (McDonald et al., 2012), and poor communication and difficult working relationships (Harris et al., 2010). Nevertheless, GPs are already challenged by intense workloads in rural areas (Senate Community Affairs References Committee, 2012) and they lack the resources and time to keep abreast of the changing and often complex nature of community health services, or to foster and maintain relationships across disciplines and providers (Anderson & Larke, 2009a, 2009b; Masso & Owen, 2009; Wiese, Jolley, Baum, Freeman, & Kidd, 2011).

The unique characteristics of the rural health care context can foster IPP, although there is a limit to which these can overcome workforce shortages. Our research demonstrates that flexible working and role overlap enables clinicians to better manage some skill shortages, absences, the geographic spread of their client base, and professional isolation. However, extended role overlap is not viable as each profession needs to maintain its distinctiveness and claim to expertise (Kreindler et al., 2012; Wakefield, Boggis, & Holland, 2006), otherwise threats to professional identity may erupt. Similarly, the mooted introduction of the ‘generic’ health care worker (Bainbridge & Purkis, 2011) is likely to provoke professional identity threat.

Leadership strategies have been shown to be effective in maintaining a common team identity while acknowledging and valuing the different perspectives from professional subgroups, and thus minimising conflict and fostering innovation. Nevertheless, recent evidence indicates that many leaders are ill-equipped to manage social identity boundaries (Ernst & Chrobot-Mason, 2011). Furthermore, our research points to the need for managers to be able to foster informal learning within their team to enhance their interprofessional knowledge, yet this skill is often neglected in management development programs (Eraut, 2004).

6.1.6 Significance and Contribution

Although the research on IPP is extensive, this is one of the first studies to examine the interplay between professional identity, professional identity threat and context, with particular reference to how IPP is enacted in rural settings. Despite the attention given to interprofessional working in the literature, there is only a limited understanding of the nature of collaboration between the professions, and as such there has been a call for a greater focus on how interprofessional activities translate in the workplace, and how this actually enhances collaborative behaviour and delivery of care (McCallin, 2001; Reeves, 2010).

This thesis addresses two deficiencies in the literature. Firstly, it adds to the few critical sociological analyses of IPP (Chesters et al., 2011) by contributing to an understanding of how the professional barriers to interprofessional team functioning can be overcome. Secondly, it provides a more comprehensive analysis of the contextual factors influencing professional identity through its examination of IPP in rural settings. In

doing so, this research responds to calls for rural health research to move beyond a focus on limitations and challenges, to a closer examination of contexts and systems (Bourke, Humphreys, Wakerman, & Taylor, 2010a).

The significance of each of the publications that form the core of this thesis is explained in the following paragraphs.

The analysis within *Paper 1: Interprofessional Practice and Professional Identity Threat*¹ extends Chrobot-Mason et al.'s (2009) work on identity threat triggers by examining how the differential treatment of professional subgroups, conflicting values and threats to the status and power of the different health professions can stymie effective IPP. To date, there has been no other comprehensive examination of Chrobot-Mason et al.'s (2009) typology in the context of health care. This original approach to conceptualising the IPP literature provides important clues as to why interprofessional teams can fail.

Interprofessional practice has been identified as a key strategy for overcoming some of the challenges to rural health services (Australian Government Productivity Commission, 2005; McNair, 2005), however studies examining the particular characteristics of IPP within rural contexts are not common. *Paper 2: Effective interprofessional collaboration in rural contexts: a research protocol*² outlines a novel qualitative research design for investigating the factors that impact on rural IPP within a framework that considers contextual and professional variables, as well as mechanisms including leadership. *Paper 3: How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study*³ is one of the first to identify the barriers to, and enablers of, rural IPP in the Australian context. This is critical given the maldistribution of health professionals, high workloads, reduced access to care and poorer health outcomes that persist in rural settings (Bourke, Humphreys, et al., 2010a; Dussault & Franceschini, 2006; Merwin, Hinton, Dembling, & Stern, 2003; Paliadelis, Parmenter, Parker, Giles, & Higgins, 2012). *Paper 4: The paradoxical effects of workforce shortages on rural interprofessional practice*⁴ examines a critical challenge in rural health, and provides a unique understanding of

¹ From this point abbreviated as Paper 1: Professional Identity Threat

² From this point abbreviated as Paper 2: Research Protocol

³ From this point abbreviated as Paper 3: Rural IPP

⁴ From this point abbreviated as Paper 4: Workforce Shortages

how workforce issues can both facilitate and impede interprofessional working. The findings in both *Paper 3* and *Paper 4* reveal key insights into how IPP operates in rural settings, and offer rural health service managers important clues about the antecedents of IPP and how to manage interprofessional teams.

6.1.7 Integration of Key Concepts

The relationships between the key concepts underpinning each of these published papers are illustrated in Figure 1, on the following page. It should be borne in mind that this concept diagram does not consider all the variables that impact on IPP, but focuses particularly on professional identity and the context of practice. Figure 1 overleaf describes how diverse composition in interprofessional health teams makes professional identity salient and this in turn affects interprofessional team outcomes. Professional identity salience is explained by social identity theory and social categorisation (Kreindler et al., 2012; Tajfel, 1982b; Tajfel & Turner, 1986) and the history and sociology of the professions within health (Reeves, Macmillan, & Van Soeren, 2010). However, the relationship between professional identity salience and interprofessional team effectiveness is moderated by the existence of professional identity threat (*Paper 1: Professional Identity Threat*), context (*Paper 2: Research Protocol; Paper 3: Rural IPP and Paper 4: Workforce Shortages*) and by leadership of interprofessional teams (*Additional Papers*). Overall this provides a novel, multi-faceted explanation of the relationship between professional identity, context and interprofessional outcomes.

The concepts of professional identity and professional identity threat underpin *Paper 1: Professional Identity Threat* and reinforce the significance of identity threat in interprofessional working. In *Paper 2: Research Protocol* professional roles, norms and boundaries are identified as some of the factors related to interprofessional collaboration, and are thus used to inform data collection questions. The protocol also highlights the importance of the different professional roles, cultures and identity in rural IPP and hence a range of health professions are incorporated into the sampling framework. Professional identity issues are further explored in *Paper 4: Workforce Shortages*: in summary, the paper explains how rural workforce pressures may drive effective IPP, yet there is also the risk that severe workforce shortages can impair IPP causing tension and potential threats to professional identity.

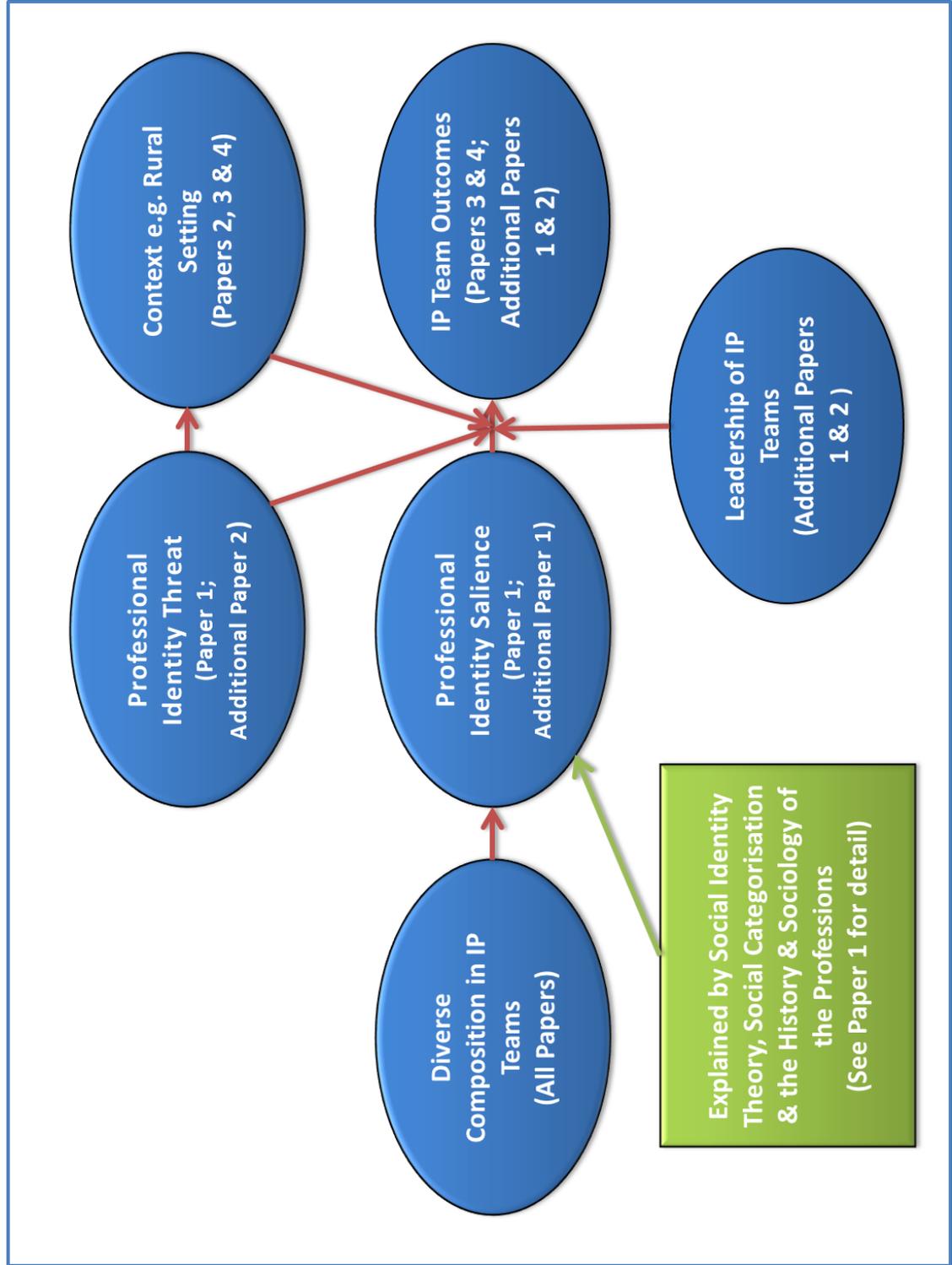


Figure 1: Key Concepts Underpinning the Thesis

The history and sociology of the professions also informs much of the conceptual framework of *Paper 1: Professional Identity Threat*. In particular, the paper explains how professional identity threats can be triggered by the differential treatment of professional groups, competing professional values, by overlapping professional boundaries, or emergent health roles which encroach on existing scopes of practice.

Such triggers can be explained by the literature relating to medical dominance, the largely silo-based education and training processes within health, and how the health professions have evolved and struggled to achieve institutional recognition of their expertise, and have competed with each other over jurisdictional boundaries.

6.1.8 Structure of the Thesis

Having provided an introduction in Section 6.1, the thesis overview then proceeds with a literature review in Section 6.2, which provides a context for the papers that form the main part of the thesis. It begins by explaining terminology and definitions, and then discusses the evolution of teamwork and IPP in health care, as well as recent evidence relating to the outcomes of interprofessional interventions. The literature review also highlights the importance of context and setting in influencing IPP, with particular attention given to the Australian rural health care context. It then moves to a discussion of three major approaches to understanding IPP: social identity theory and social categorisation; the history and sociology of the professions; and models of team dynamics and effectiveness.

Section 6.3 outlines the research design and method which was utilised to study the context, mechanisms and outcomes of rural IPP. Section 6.4 presents a synthesis and discussion of the study findings, while Section 6.5 reviews implications for policy and practice and interprofessional education. This is followed by Section 6.5 which outlines potential research in the field, and Section 6.7 which presents concluding statements.

Finally, Section 7 includes information regarding the criteria that was used in selecting the journals for publication, statements of contributions from co-authors, as well as an introduction to each of the four publications and a copy of the author's final version of each paper.

6.2 Literature Review

The following literature review provides the theoretical and empirical background that frames the published papers. Firstly, it establishes the terminology and definitions that will be used throughout this thesis. Secondly, it outlines the concept of teamwork, followed by a summary of the evolution of IPP in health care. It then discusses the mixed results of interprofessional working and how professional differences and the resilient professional identities that exist within health care underscore many of the obstacles that have been encountered in IPP. This focus is important as social or professional identities within health care have been mooted as pivotal in interprofessional interactions (Kreindler et al., 2012). The review moves on to a discussion of context and its impact on identity and interprofessional interactions. The rural context, and its influence in IPP and on professional roles and identity, is the focus of examination, a context which to date has been relatively underexplored in the IPP literature (Mitchell, Paliadelis, et al., 2013). Moreover, interprofessional working in rural and remote areas has been highlighted as a particular challenge in the Australian context (Reeves, Lewin, Espin, & Zwarenstein, 2010).

The literature review then considers three key theoretical approaches to understanding IPP. Firstly, it summarises how social identity theory and social categorisation together explain how the diverse values, approaches to patient care, and professional cultures associated with the different professional identities existing within health care have contributed to less than effective IPP (Kreindler et al., 2012; Pecukonis, Doyle, & Bliss, 2008). Secondly the review outlines how the history and sociology of the professions underpin the working relationships between health practitioners. Professional associations in the health sector have struggled to maintain and improve their status, power and jurisdictions, thus necessarily influencing the relationships between the professions at the individual and local level (McLaughlin, 2013; Reeves, Macmillan, et al., 2010; Salhani & Coulter, 2009). A discussion of both of these theoretical frameworks is important as the application of sociological theory in IPP research has been limited yet has been suggested as critical in unravelling key facets of IPP (Reeves, 2010). Finally, two models of teamwork that consider inputs as well as mechanisms of effect are discussed. Such models are essential in investigating IPP as simple cause and

effect explanations are inadequate in gaining an understanding of complex teams, interactions and contextual influences (Ilgen et al., 2005).

6.2.1 Terminology

Despite the relatively long history and debate surrounding interprofessional practice in health policy documents and the academic literature, the concept is confounded by a “terminological quagmire” (Leathard, 2003a, p. 5). Terms such as ‘interdisciplinary practice’, ‘interprofessional collaboration’, ‘collaborative practice’, ‘multi-disciplinary working’, ‘multi-professional working’, ‘interprofessional practice’, ‘transdisciplinary practice’ and ‘interprofessional working’ can mean very similar modes of working (McLaughlin, 2013), while the use of the same term does not guarantee that the teams described share any similar characteristics. For example, there are many permutations of interprofessional teams, each of which reflect the history of the professions and agencies involved, as well as the overarching government policy (Pollard et al., 2005). Some authors have distinguished between multidisciplinary or multiprofessional teams, where health care professionals treat patients independently and then share information, and interprofessional or interdisciplinary teams, where planning and evaluation is undertaken jointly and synergistically (McCallin, 2001; Mitchell, Parker, Giles, & White, 2010; Thylefors, Persson, & Hellström, 2005). Notably, however, such terms have been used inconsistently in the literature (Lemieux-Charles & McGuire, 2006; McCallin, 2001), although the term ‘interprofessional’ has been used more commonly in publications since 2000 (Paradis & Reeves, 2013). What has been highlighted is that the terms are relatively unimportant and that it is the team’s processes and the impact on service delivery and patient outcomes which is critical (McCallin, 2001).

Throughout this document the term interprofessional practice (IPP) will be utilised as far as possible, while acknowledging the use of alternate terms by other authors. The definition adopted will be that IPP is a team comprising a range of health care professionals from different specialities and disciplines who work closely together, share common goals and who provide mutual support and complementary input to patient care. In doing so, the aim of IPP is to minimise professional and organisational barriers so that the most appropriate and integrated care is delivered (Banks, 2010; Canadian Collaborative Mental Health Initiative (CCMHI), 2006; McLaughlin, 2012).

6.2.2 IPP in Health Care

Team work is generally viewed as the most effective means of providing services in a range of sectors and organisational settings (Cohen & Bailey, 1997; Mickan & Rodger, 2000; West & Poulton, 1997). The literature has defined teams as small groups of interdependent individuals who communicate regularly, are jointly accountable for outcomes and are viewed as a social entity by others in the organisation (Cohen & Bailey, 1997; Mickan & Rodger, 2005). In reality, however, a team can denote a myriad of things. It can be cohesive groups of individuals who work together regularly or it can be a group brought together in an ad-hoc manner for a specific project. A team may have a common manager but with little contact between the members; may be formal or informal; democratic or hierarchical; comprise a single professional group or draw from a number of disciplines (Pollard et al., 2005). The term is used so ubiquitously that ‘team’ members may have never met or have any idea of the identity of the other members (Øvretveit, 1997). Nonetheless, the team concept is deeply embedded within organisational culture, is perceived as being intrinsically good, and is increasingly promoted as a vehicle for achieving improvements in patient outcomes and integrating services across professional and organisational boundaries in the health care sector (Finn, 2008; Reeves, Lewin, et al., 2010).

The concept of interprofessional team working began to appear in the health care literature in the 1960s and 1970s, although this did not necessarily translate to practice (Pollard et al., 2005; Szasz, 1969). From the late 1980s and early 1990s, there was a significant growth in interest in interprofessional collaboration and teamwork in a number of countries (Baldwin, 1996; Pollard et al., 2005; Reeves, Lewin, et al., 2010). For example, in Australia a number of programs were implemented during the 1990s to foster teamwork between health care providers in primary health, the community and government organisations (McNair, Brown, Stone, & Sims, 2001), while in Canada there was a particular focus on implementing interprofessional primary care teams (Goldman, Meuser, Rogers, Lawrie, & Reeves, 2010; Meuser, Bean, Goldman, & Reeves, 2006). However, early on it was recognised in both countries that system issues, such as differing mechanisms of remuneration for clinicians (such as fee-for-service payments for physicians), are an impediment to collaboration (Fuller, Edwards, Martinez, Edwards, & Reid, 2004; Huntington, 1981; Oandasan et al., 2006; Taylor,

Blue, & Misan, 2001). Furthermore, changing scopes of practice and the role of professional identity were identified as issues in the implementation of family health teams in Canada (Goldman et al., 2010). In the United States, systems inertia and professional territoriality were noted as often mitigating IPP efforts (Baldwin, 1996). Despite such historical and systemic barriers to implementation, IPP which aims to resolve service gaps and conflict across professional and organisational boundaries continues to be a priority for health service managers, policy-makers and governments globally (Australian Government, 2009; Australian Government Productivity Commission, 2005; Canadian Health Services Research Foundation (CHSRF), 2007; Centre for the Advancement of Interprofessional Education (CAIPE), 2008; Chesters et al., 2011).

Many have extolled the virtues of interprofessional working and the positive impact on patient and organisational outcomes. Early studies have demonstrated that IPP more effectively utilises the skills of both specialist and unqualified staff through the delegation of more routine tasks; improves service provision and provides a more satisfying work environment (McGrath, 1991, cited in Leathard, 2003b). More recent research has shown that IPP can enhance innovation, reduce health care costs and waiting times, and lead to clinical improvements in patients and a more effective utilisation of resources (Canadian Health Services Research Foundation (CHSRF), 2007; Dietrich et al., 2004; Long, Forsyth, Iedema, & Carroll, 2006; Tieman et al., 2006). In addition, a small number of studies have found quality improvements, such as a reduction in patient complaints, improved patient satisfaction and the reduction in clinician burn out; however, it has been suggested that the rigour and quantity of this research is somewhat limited (Reeves, Lewin, et al., 2010).

The definition of IPP, noted earlier, incorporates the key elements of ‘working closely together’ and ‘shared goals’. However, these concepts can suggest a spectrum of working relationships dependent on context. For example, IPP can mean two or more clinicians actively sharing a case, or a coordinator overseeing the work of a team of professionals who only meet formally to report on and assess a case. Sharing goals suggests a joint assessment, plan and assignment of specific roles yet the practical implementation of such is subject to the vagaries of funding, organisational context and professional differences in status, world views and language (McLaughlin, 2013). The definition can also imply an “interchangeability of roles” (Banks, 2010, p. 281) or a

blurring of professional boundaries (Hudson, 2007; Masterson, 2002). However, for some commentators, overlapping health roles raises the potential for the creation of a cost-effective generic health worker, resulting in possible deprofessionalisation and homogeneity which could be at the expense of the expertise and creativity currently offered by heterogeneous health professions (McLaughlin, 2013; Pollard et al., 2005). Moreover, clinicians are faced with the tension between policy directives exhorting them to work interprofessionally across traditional discipline boundaries, and the historical focus on specialisation and differentiation of labour in health (Hudson, 2007).

While it has been commonly assumed that teams comprising different health care practitioners would naturally work cooperatively in an effort to provide integrated care; the reality is quite different (Finn, 2008; Finn, Learmonth, & Reedy, 2010; Øvretveit, 1986). Although some interprofessional teams have been able to deliver improvements in costs and patient care, many have encountered significant hurdles. In some instances, for example, team members have been ‘thrown together’ and expected to deliver improved outcomes in a relatively short time without adequate resourcing, support or training (Øvretveit, 1986). Health care teams face a fundamental paradox: the deeply entrenched specialisation, traditional hierarchies, distinct professional identities and divergent professional interests that exist within health care can be at odds with the notion of teamwork and professional integration, thus resulting in conflict and tension (Finn et al., 2010). Notably, an early report found that interprofessional interventions in primary health care were met with persistent retreats into uni-professional silos despite individual clinicians’ stated motivation to work interprofessionally (Øvretveit, 1990, as cited in Leathard, 2003a). While identity has been implicated in ongoing intergroup conflicts in organisations (Fiol, Pratt, & O’Connor, 2009), there are indications that interprofessional teamwork is more likely to be successfully implemented when social identities are taken into account (Kreindler et al., 2012).

Even very early in the history of IPP discourse, professional differences were identified as problematic in interprofessional working. In the late 1970s, Hunt (1979) observed that most studies have concluded that interprofessional teams are working below their potential. Furthermore, teamwork poses difficulties when team members possess divergent education backgrounds, values and language; when there are disparities in status and pay; role confusion and overlap; and prejudicial stereotypes about other health professions. Almost a decade later, Øvretveit (1986) concluded that the key

barrier to many interprofessional team problems relates to a lack of clarity around professional roles and accountabilities. In the 1990s, similar barriers to teamwork were acknowledged: professional issues related to competing values, ideologies and language; competition around scopes of practice and autonomy; threats to job security; and conflicting views about the patient (Hardy, 1992; Pietroni, 1992). These barriers persist, and are still being reported in recent studies. For example, perceived threats to professional status and a lack of knowledge of other health professionals' roles and expertise have been cited as impediments to IPP and IPE efforts (Baker et al., 2011; Cameron, 2011; Khalili, Orchard, Laschinger, & Farah, 2013; Suter et al., 2009).

Such barriers, in part, stem from how each practitioner is socialised in their particular discipline. The specific values, attitudes and norms of each health profession are reinforced during a largely uniprofessional education process and through on-the-job learning with clinical colleagues and supervisors (Ajjawi & Higgs, 2008; Clark, 1997; Sharpe & Curran, 2011). As a consequence of this socialisation process, each health discipline develops a different approach to problem solving, a different view of the patient and how successful treatment and care is defined (Clark, 1997; Mackay, Soothill, & Webb, 1995; Pecukonis et al., 2008; Sharpe & Curran, 2011). Divergent education and socialisation processes and limited exposure to practitioners from other disciplines can result in misunderstandings about other professions' skills and expertise, perpetuate myths and negative stereotypes (Khalili et al., 2013), as well as present a potential barrier to effective interprofessional communication (Hall, 2005).

Professional socialisation within the health disciplines also helps shape the construction of a robust professional identity (Ajjawi & Higgs, 2008; Clark, 1997; Sharpe & Curran, 2011). A professional identity is a form of social identity which results in each practitioner strongly identifying with their own disciplinary group, while differentiating themselves from other health professions (Coyle, Higgs, McAllister, & Whiteford, 2011; Schein, 1978). This identity can be more distinctive and salient than an organisational identity (Callan et al., 2007) or an identity based on gender, age, race or nationality (Adams, Hean, Sturgis, & Clark, 2006; Hogg & Terry, 2000). A valued identity, such as professional membership, can become highly salient when threatened, potentially manifesting in intergroup conflict (Hornsey & Hogg, 2000a); stereotyping of other groups (Voci, 2006); uncooperative team interactions; and poor performance (Helmreich & Schaefer, 1994). Organisational reforms such as IPP can be perceived as

a threat to traditional professional groups (Callan et al., 2007), particularly if such reforms are construed as devaluing the power, norms or status of a professional identity (Steele, Spencer, & Aronson, 2002).

Paper 1: Professional Identity Threat draws on the widely-accepted theories of social identity and social categorisation (Lloyd, Schneider, Scales, Bailey, & Jones, 2011; Tajfel, 2010; Tajfel & Turner, 1986), and demonstrates how poor outcomes in interprofessional health care teams can be explained by threats to professional identity. It discusses how a salient professional identity can be threatened by triggers such as the differential treatment of professional groups, conflicting professional values, blurring of professional roles or where new health roles encroach on existing scopes of practice. This original conceptualisation of the interprofessional literature advances the understanding of IPP by providing a framework that elucidates why it is successful in some contexts and not in others. The relevant aspects of social identity theory and social categorisation are explained more fully in Section 6.2.4.1.

Professional identity, and how practitioners interact in a team environment, also reflects a broader socio-historical context related to how the health professions have evolved and contested jurisdictional boundaries (Reeves, Macmillan, et al., 2010; Styhre, 2011). While professional associations often reinforce that they are in possession of a distinct body of knowledge, they are primarily concerned with defending challenges to their power, privileges, scopes of practice and, thus, their professional identity (Styhre, 2011). The professional cultures within the health sector, the values, beliefs, attitudes, customs and behaviours of each practitioner group (Hall, 2005), have been held responsible for stifling job design evolution, reinforcing professional boundaries and discouraging interprofessional working and the development of new models of care. Further, the entry rules and codes of conduct of the professional associations, which are directed at maintaining quality and safety standards, can perpetuate entrenched practices while protecting income and role boundaries of professional communities (Australian Government Productivity Commission, 2005). The literature on the professions (for example, Abbott, 1988; Johnson, 1972; Willis, 1983) helps explain how professional identity is affected by socio-political factors, and provides a framework for understanding how the territorial disputes between professional groups within the broader context of the health sector can influence the effectiveness of IPP at the workplace level. *Paper 1: Professional Identity Threat* also draws on these concepts in

its examination of professional identity threats. The literature on the historical development and competition between the different health professions is discussed further in Section 6.2.4.2.

Context is another factor which plays a key role in IPP and professional identity. For example, social identity theory affirms that modifying structures, working practices and the organisational environment has the potential to alter patterns of intergroup interactions. Moreover, what can be perceived as threatening to a valued professional identity in one context may be viewed as positive in another (Kreindler et al., 2012). Interprofessional practice has been examined in a variety of settings in the last twenty years: for example, in tracheostomy teams (Mitchell, Parker, & Giles, 2013); in palliative care (Klarare et al., 2013); in elder care (Duner, 2013); in integrative health care clinics (Gaboury, Lapierre, Boon, & Moher, 2011); in the care of patients with chronic kidney disease (Dixon, Borden, Kaneko, & Schoolwerth, 2011); in family health teams (Goldman et al., 2010); in cardiac rehabilitation (Seneviratne, Stone, & King, 2009); and in acute care (Reeves & Lewin, 2004). There are significant differences between urban and rural health services (Bourke, 2012), and these differences are likely to have a substantial impact on professional identity and the effectiveness, structure and features of IPP. While there have been a number of interprofessional studies conducted in rural contexts internationally (see Reeves, Abramovich, Rice, & Goldman, 2007), there has been little published research exploring successful IPP in Australian rural settings (Goss, Paterson, & Renalson, 2010; Laurence et al., 2004; McConigley, Platt, Holloway, & Smith, 2011; Schofield, Fuller, Wagner, Friis, & Tyrell, 2009).

The remaining three papers included as part of this thesis explore the impact of the rural context on IPP. *Paper 2: Research Protocol* outlines the original research design which seeks to investigate the barriers to, and enablers of, rural IPP. The empirical *Paper 3: Rural IPP* presents findings which reveal how professional identity and role issues are among a number of factors that facilitate and disrupt IPP effectiveness. To our knowledge, this is the first study to explore IPP across a number of rural settings, locations and professions within Australia (Mitchell, Paliadelis, et al., 2013). The final empirical *Paper 4: Workforce Shortages* examines rural workforce pressures in particular and the impact on professional roles, practice boundaries and identity. This research focus provides new insights into rural IPP and reinforces the important role

that identity issues play in interprofessional working. The literature related to IPP in the rural context is discussed more comprehensively in the following section.

6.2.3 Rural IPP

While the literature on IPP is extensive, IPP in a rural context can be markedly different to what is experienced in metropolitan centres, and it poses particular challenges for clinicians. Rural health is distinguished by geographic isolation, major workforce shortages, lower health status for rural residents and more generalist approaches to health care (Bourke, Humphreys, et al., 2010a). Typically, urban models of health care do not translate well to rural settings, and accordingly they need to be modified to cater for local conditions and workforce limitations (Bourke, 2012; May, Cooper, Magin, & Critchley, 2008). Moreover, there is no single template for teamwork in rural health care as practitioners need to adapt their practice to each unique setting (Bourke et al., 2004). Interprofessional practice has been promoted as an antidote to addressing some of the challenges of rural health (Australian Government Productivity Commission, 2005; Schofield et al., 2009; Wakerman, 2009). In particular, commentators have argued that IPP and collaborative practice are more critical in rural settings as they can reduce professional isolation and enhance patient outcomes (Brems et al., 2006; Charles, Bainbridge, Copeman-Stewart, Art, & Kassam, 2006; Schofield et al., 2009). Indeed, interprofessional and team-based work, flexible roles and responsibilities and task delegation have been found to be germane to rural practice (Rygh & Hjortdahl, 2007). Despite this significant and potential role in rural health care, there is a limited understanding of IPP in rural contexts (Blue & Fitzgerald, 2002).

It is clear that the rural context has a fundamental impact on professional roles, and thus on professional identity. Health professionals working in rural settings experience significantly different conditions to their urban counterparts and are likely to provide a greater range of services; have a heavier after-hours workload; and be inadequately supported in terms of locum coverage, specialist referral services and professional development and mentoring (Australian Government Productivity Commission, 2005). Flexibility and blurring of traditional role boundaries are thus a feature of rural practice, necessitated by human resource shortages and the need to “get the job done” (Kelley, 2007, p. 145). Examples of such flexibility can entail an expansion of existing professional roles, as occurred with pharmacists and district nurses in rural Scotland

(Tolson, McIntosh, Loftus, & Cormie, 2007); the training of local people as therapy assistants to support an outreach allied health service in Northern Queensland (Battye & McTaggart, 2003); or utilising allied health professionals as ‘physician extenders’ to allow the medical practitioner more time for consultations in rural Canada (Burnham, Day, & Dudley, 2010). Shortages in the allied health area has led to some cross skilling between occupational therapists and physiotherapists in remote areas (Australian Government Productivity Commission, 2005); professional social workers have been replaced by lower paid workers and volunteers due to the removal and reduction of rural services (Alston, 2007); and radiography work may be performed by rural nurses or GPs, so called remote x-ray operators, where a radiographer is unavailable (Smith & Jones, 2007). In the latter case, radiographers were sensitive to the impact on their professional identity and status and that sharing their skills with other professions detracted from the “mystique of radiography” (Smith & Jones, 2007, p. 296). Further, it has been suggested that other health professions may be partly substitutable for physicians where physicians are in short supply (Battersby et al., 2007; Bourgeault & Mulvale, 2006), thus raising issues of boundaries between medicine and the other health professions. These examples illustrate how such flexibility and blurring of roles poses questions, in terms of professional identity and potential challenges to the health professional associations’ defence of jurisdictional domains.

Skills shortages in rural and remote areas have been one of the key drivers for the development of new roles in the health sector which again can provoke boundary issues. For example, the tight market for medical practitioners has been the impetus for the development of the role of Nurse Practitioner (NP), the trialling of the roles of Physician’s Assistant and Perioperative Nurse Surgeon’s Assistant and the examination of the broadening of the role of the paramedic in Queensland (Australian Government Productivity Commission, 2005). In particular, the NP is a specialised role which enables nurses to exercise broader clinical powers, including the ability to prescribe certain medications, order diagnostic tests and refer clients to other health practitioners (Germov, 2005). However, evidence demonstrates a gap between the rhetoric of policy to introduce the role of NP and the reality of implementation in rural and remote Australia (Turner, Keyzer, & Rudge, 2007). While some individual GPs have been supportive of the NP model (MacLellan, Higgins, & Levett-Jones, 2014), it appears both medical and non-medical colleagues still struggle to comprehend the NP role

within the existing health care structure (MacLellan et al., 2014; Turner et al., 2007). Indeed, the Australian Medical Association (AMA) has strongly opposed this new role based on the premise that “Nurses do not substitute for general practitioners”, that this move would offer less than the best possible care, and that short term replacement of doctors with health practitioners with different skill sets and training would neither be safe or sensible (Australian Medical Association (AMA), 2005a, n.p.; 2005b). Appel and Malcolm (2002) have highlighted that the impetus for the establishment of NPs has been the shortage of medical practitioners in rural and remote areas of Australia, a shortage which has persisted despite a number of incentives and strategies which have been directed at the problem. They contend that the medical profession’s opposition appears spurious, given that the NP position is a legitimisation of the range of functions that rural and remote nurses have typically performed in the absence of other available health professionals. In short, the doctors’ opposition appears to be borne out of fear of encroachment on their traditional boundaries of practice, their traditional power base and a threat to their source of income (Appel & Malcolm, 2002; Turner et al., 2007). Such negative responses to changing roles can be explained by social identity theory, social categorisation, and the history and sociology of the professions, which are discussed in the following Sections 6.2.4.1 and 6.2.4.2.

6.2.4 Major Approaches to Understanding IPP

6.2.4.1 Social Identity Theory and Social Categorisation

The literature reveals how professional identity, power relations, values, attitudes and norms, identity salience and context interact to influence the effectiveness of IPP within health care. Social identity and social categorisation together offer a framework to understand the interplay between these factors and identify viable mechanisms for overcoming barriers to change (Kreindler et al., 2012). It is likely “that every problem involving interactions within or among health care groups probably has a social identity dimension” (Kreindler et al., 2012, p. 366).

The social identity perspective (incorporating social identity theory and its extension, social categorisation) offers a widely-accepted, empirically-tested framework for understanding social identity and intergroup relations (Oliver, 2013). Social behaviour can be determined by interpersonal or intergroup relationships, or some combination of the two. At one end of the spectrum, interactions between two or more individuals

may be based purely on personal characteristics with no reference at all to the social categories to which the individuals belong. At the alternate end of the spectrum, social behaviour is determined only by an individual's membership of a group and not by the relationships between individuals. Examples of relationships that reflect the extreme ends of the interpersonal-intergroup spectrum, however, are rare in reality (Tajfel & Turner, 1986). Social identity theory focuses on an individual's self-concept based on their membership of a valued and emotionally significant social group. This identity is essentially relational and comparative: individuals endeavour to maintain a positive social identity by making favourable comparisons between 'us' (their own in-group) and 'them' (a distinct out-group). If a social identity does not meet expectations, then individuals may choose to leave their current social group and join what they perceive as a superior group, or attempt to positively differentiate their existing group from other groups (Tajfel, 1982b; Tajfel & Turner, 1986).

Intergroup behaviour cannot exist without individuals being categorised into groups, labelled social categorisation (Tajfel, 1982b). Considerable evidence exists that the mere awareness of distinct groups is sufficient for in-group members to favour their own group and engage in discrimination against the out-group (Tajfel & Turner, 1986). Such discriminatory intergroup effects commonly occur as a means to preserve or enhance the positive distinctiveness of the in-group, and therefore the social identity of its members (Tajfel, 1982b). Increased salience of a social identity is associated with a greater focus on the common attributes rather than on the personal characteristics of individual in-group members, and to greater in-group favouritism (Kreindler et al., 2012). Further, there is a tendency for an in-group to assume that members of an out-group are relatively homogenous, while in the case of acute tension between groups where relations are positioned closer to the intergroup end of the interpersonal-intergroup spectrum, 'depersonalisation', 'dehumanisation' and stereotyping of the out-group members can occur (Tajfel, 1982b; Tajfel & Turner, 1986).

The stability of power and status structures also affects intergroup behaviour. Where status relations are viewed as fixed, then social identity is perceived as secure. However, if differences in power and status are viewed as unstable or illegitimate then there is the potential for conflict. As an example, the dominant group may respond to a threat from an out-group in a highly discriminatory manner. It is possible that if the in-group's

efforts to maintain their positive distinctiveness is thwarted, then the outcome may be overt conflict between the two groups (Tajfel & Turner, 1986).

Individuals can hold multiple social identities but identify with the one that is most salient in a given context (Hogg & Smith, 2007; Oliver, 2013). A social identity influences attitudes, behaviour and world views (Hogg & Smith, 2007; Kreindler et al., 2012), while identification with a valued social group can enhance feelings of security, camaraderie, attachment and well-being (Bartunek, 2011). Members of valued social groups are also likely to mobilise to combat perceived threats to the group's status, norms or positive distinctiveness. However, as social identity is context dependent, there is the potential to modify group behaviour by altering organisational structures, working practices or conditions (Kreindler et al., 2012). Social identity, social categorisation and intergroup behaviour to combat perceived threats to status and power are pertinent to IPP.

Within the health care context, and particularly within interprofessional teams, professional identity is a highly salient form of social identity (Fitzgerald & Teal, 2004; Kreindler et al., 2012; Mitchell et al., 2010). Increasing specialisation in the health workforce has resulted in a large number of different professions who are educated separately, and thus have formed their own professional cultures with divergent ideologies, value systems, customs and views of what constitutes 'good' health care practice (Duckett, 2005; Pecukonis et al., 2008). Each health profession is associated with a body of knowledge which forms a key part of the professional identity. "Novices are socialized into a profession in such a way that they will assume an identity similar to that of their mentors, thus perpetuating the profession as it is" (Guy, 1985, p. 12) through a process which has been termed 'professional cloning' (Stelling & Bucher, 1979). Even prior to commencing their education, health and social care students exhibit strong professional identities (Adams et al., 2006), while a medical student's education and professional socialisation contribute to a professional identity which becomes a central part of their self-concept (Cohen, 1981).

A professional identity can be more resilient and dominant than other forms of social identity (Adams et al., 2006; Callan et al., 2007; Hogg & Terry, 2000), while society permits higher status professional identities to prevail over other social identities (Cohen, 1981). Additionally, researchers argue that salience is dependent on the

accessibility of the social categorisation in a given context. In other words, the social categorisation needs to easily account for the similarities and differences among people and the stereotypes associated with that categorisation need to readily explain why people behave in different ways (Hogg & Smith, 2007). Given the varied cultures, language, norms and behaviours associated with the different health professions (Clark, 2013), it is very likely that professional identity will be the salient social categorisation within professionally diverse teams (Adams et al., 2006; Bartunek, 2011).

There are examples of where health practitioners and students use stereotyping of neighbouring professions to accentuate the positive distinctiveness of their own professions. One study found that nurses' simplistic construction of surgeons' attitudes and motivations was at odds with the surgeons' perception of themselves as 'efficiency advocates' and 'team players'. Similar discrepancies existed in the other direction; while nurses viewed themselves as integral to the operating team, surgeons considered that they "were always disappearing" and residents described them as "'gophers', people who 'we get to do our dirty jobs'" (Lingard, Reznick, DeVito, & Espin, 2002, p. 731). Although a study of undergraduate student perceptions revealed some positive stereotypes of other professions, medical students believed that nurses had "a tendency to be 'do-gooders'", while nursing students perceived doctors as "'detached', 'arrogant' and 'poor communicators'" (Carpenter, 1995, p. 156). In other research, some medical colleagues considered their skills and expertise to be more valuable than that of their non-medical colleagues. Physicians also justified their dominant position in the hierarchy and their resistance to 'negotiating' with other professions by referring to their extended years of training, the financial investment in gaining their qualifications and their ultimate accountability for patient outcomes (Baker et al., 2011). A very recent study points to the remarkable resistance of such negative stereotypes: first-year health profession students rated their own profession consistently highly on most attributes and much more favourably than they did other professions (Michalec, Giordano, Arenson, Antony, & Rose, 2013). Students' attitudes to other health professions are further cultivated during their training, where senior colleagues and tutors reinforce negative stereotypes (McNair, 2005). If the maintenance of a positive professional identity relies too heavily on negative narratives and stereotypes of other health professions, then this is likely to be at the cost of effective IPP (Wackerhausen, 2009).

Evidence also points to the adverse impact that professional identity threat has on interprofessional working. Threats to a valued social identity can lower self-esteem, trigger poor performance and resistance to organisational change (Petriglieri, 2011), and can prompt negative affective responses (Cottrell & Neuberg, 2005). Identity threat is more likely to occur when the value, meaning or representation of an important identity is repeatedly subject to potential harm (Petriglieri, 2011). Interprofessional collaboration can be associated with the diminution of expert status, indistinct roles and blurred professional boundaries, which in turn can engender professional identity threat (Oliver, 2013). Those with a strong professional identity are more likely to fight to defend their in-group in response to a threat to the group's objectives, status, distinctiveness or norms (Kreindler et al., 2012). A common response to such threats is for team members to retreat to their professional silos and to derogate other professional groups to boost their own group's self-esteem (Oliver, 2013; Petriglieri, 2011). Perceived threat to professional expertise is likely to circumscribe sharing of interprofessional knowledge, and consequently effective interprofessional decision making (Mitchell et al., 2010).

Doctors, for example, can perceive IPP efforts as a threat to their professional identity. An analysis of medical practitioners' lack of engagement in IPE initiatives in one study pointed to the possibility that they viewed IPE as a threat to their dominant role in the health hierarchy, while non-medical staff considered that IPE was a means to improve their professional status (Baker et al., 2011), a phenomenon reported elsewhere in the literature (Kuper & Whitehead, 2012). Furthermore, a lack of interprofessional knowledge exhibited by physicians is perceived to devalue the role of other practitioners, thus interfering in collaborative learning efforts (Baker et al., 2011). Interprofessional working suggests that practitioners need to share power and decision-making responsibilities, yet this logically asks the medical profession to accept and manage a reduction in their status and decision making power (Mackay et al., 1995; Whitehead, 2007), which is an obvious threat and an impediment to collaboration. Moreover,

a reason that doctors determine, and, in some circumstances, constrain, the input of clinicians in other roles into patient care is because doctors are socialized, in tertiary education and at work, through legal, organizational and cultural structures, to see themselves as key decision-makers about patient care and the patient pathway through a

health service. (Nugus, Greenfield, Travaglia, Westbrook, & Braithwaite, 2010, p. 908).

Even when individual physicians verbally support the philosophy of shared leadership and power within interprofessional teams, their actions reflect the inherent difficulty they have in relinquishing their leadership role (Lingard et al., 2012; Long et al., 2006). In essence, it is difficult for them to eschew their education and professional socialisation and the influence of a health care system that reinforces doctors' privileged status in the hierarchy, and a medical-legal system where medical practitioners bear the greater burden of legal and professional liability (Lingard et al., 2012).

It is thus not surprising that the American Medical Association has very recently asserted the medical profession's leadership role in interprofessional teams:

[The American Medical Association] believes that the ultimate responsibility of patient medical care rests with the physician and thus advocates that physicians maintain authority for patient care in any team-care arrangement to ensure patient safety and quality. This report affirms that policy, moving toward physician-led, coordinated care models. (American Medical Association (AMA), 2014, n.p.).

Nonetheless, organisational changes that may be perceived as threatening to a valued professional identity in one context may be construed as identity affirming in another. Accordingly, interprofessional change efforts need to be cognisant of the key role that professional identity and identity threat play in team effectiveness (Kreindler et al., 2012).

As discussed earlier, professional identities within health care are the product of socialisation processes that occur during education and are reinforced whilst on-the-job. Such socialisation processes are framed by legal, political and cultural structures which have a long and complex history. The following section explains how professional identity plays out on the larger socio-political stage in terms of how the health professions have evolved and competed for power, status and over jurisdictional boundaries.

6.2.4.2 History and Sociology of the Health Professions

Professional roles within the health sector have been shaped by historical processes influenced by power structures that have contributed to a hierarchically-based division of labour. In fact it has been suggested that there "is nothing 'natural' about the current

divisions of labour” where the epistemological tradition of the medical profession has dominated (Bainbridge & Purkis, 2011, p. 34). The persistent challenges associated with interprofessional working and the associated conflicts between the professional identity groups need to be considered within the broader socio-historical evolution of the health professions (Chrobot-Mason et al., 2009; Reeves, Macmillan, et al., 2010).

This evolution can be understood through the lens of the sociology of the professions (Reeves, Macmillan, et al., 2010). The closure theorists (e.g., Freidson, 1970a) argue that occupational groups attempt to professionalise by utilising ‘closure’ strategies to secure a monopoly in the marketplace for their skills and expertise, therefore enhancing their status and maximising economic rewards. Such ‘closure’ strategies include maintaining a system of entry barriers to the profession, professional standards and work practices. Conflicts can arise when one professional group is seen to be encroaching upon another professional group’s area of expertise (Baker et al., 2011; Reeves, 2011b).

Gieryn (1983) defines the concept of ‘boundary-work’ as a tool utilised by the professions to expand or monopolise their authority or protect their autonomy. Echoing social identity theory and social categorisation, boundary-work may take the form of reinforcing the contrast between the professions or occupations in a positively biased way when the goal is expansion into the domains or expertise of other professions; and excluding rivals by labelling them as ‘pseudo’, ‘deviant’ or ‘amateur’ when the goal is to secure a monopoly over an area of work. It may also place the blame on scapegoats outside the profession and exempt its own members from responsibility when the objective is to protect autonomy over existing areas of expertise. Pertinent examples exist in the AMA’s response to new occupations, such as NPs, their denouncement of complementary and alternative medicine and their resistance to the mooted expansion of the traditional scopes of practice of pharmacists. For example, the AMA has suggested that an independent NP is a second-rate health provider and should not act outside the supervision of a medical practitioner (Australian Medical Association (AMA), 2005a). Another example of attempting to exclude rivals by denouncing them as ‘pseudo’, ‘deviant’ or ‘amateur,’ is the very recent formation of the powerful lobby group in Australia, the Friends of Science in Medicine. This group, comprising doctors, medical researchers and scientists, is pressuring universities to discontinue offering degrees in complementary and alternative medicine, arguing that universities were derailing their

academic reputation as institutions and were giving “undeserved credibility to what in many cases would be better described as quackery” (Burke, 2012, n.p.). Very recently, the AMA has expressed strong objections to the possibility that pharmacists may expand their scope of practice:

In their search for more revenue, pharmacists have mounted a controversial and increasingly aggressive push to expand their range of practice to include administering vaccinations and possibly undertake routine health checks ... [it] could put the health of patients at risk because pharmacists were not trained to provide such treatment. (Australian Medical Association (AMA), 2014, n.p.).

The AMA’s response to NPs, pharmacists and complementary and alternative medical practitioners potentially encroaching on their scope of practice has been to positively differentiate their profession from others, and intimate that non-medical professions are ‘amateur’, ‘pseudo’ or untrained to take on such critical roles.

Abbott (1988) has asserted that the professions are involved in constant jurisdictional disputes and thus changes in the scope of practice of one profession will necessarily impact on the domain of neighbouring professions or in the creation of new occupations. In contrast to the closed system of functional specialisation inferred by the closure model, his analysis highlights how the system of professions is in flux where the professions are interdependent and are constantly redrawing their social boundaries (Lamont & Molnár, 2002). Within the context of this competitive environment, the health professions have struggled to define the boundaries of their work (Hall, 2005). Territorial disputes may be over who should be included or excluded within particular jurisdictions, as well as more general contests over the control of occupational fragments (for example, between chiropractors and physiotherapists, naturopaths and chiropractors or optometrists and ophthalmologists) (Coburn, 1994). This reinforces that health professions define the boundaries of their neighbouring professions (Nancarrow & Borthwick, 2005), and that health workers are not free to change their boundaries or scope of practice but are constrained by the influence of other disciplines, legislative frameworks and their ability to convince funding bodies and consumers to purchase their services (Freidson, 1974).

The concept of the health professions ‘defending their territories’ can be obscured by other arguments. For example, in a New Zealand Royal Commission of Inquiry into the role of chiropractors, both the medical profession and chiropractors professed that they

were acting in the public interest. It could be argued, however, that the medical profession was defending its scope of practice while the chiropractic profession was pursuing an expansion into the health services market (Dew, 2000).

Health care professions do not have equal power to diversify their domains (Nancarrow & Borthwick, 2005). Historically, the ability of other health professions to diversify has been constrained by the power of the medical profession (Johnson, 1972; Kenny & Adamson, 1992; Larkin, 1983). Medicine has traditionally been acknowledged as the most dominant profession in the health sector (Benoit, Zadoroznyj, Hallgrimsdottir, Treloar, & Taylor, 2010; Freidson, 1970b; Hallinan & Mills, 2009; Larkin, 1983; Witz, 1992), yet it only makes up a small fraction of the total Australian health workforce (Australian Institute of Health and Welfare (AIHW), 2011). In his seminal work, Willis (1983) observes that the phenomenon of medical dominance is a key characteristic of the Australian health care system, with the medical profession dominating economically, politically and socially. The medical profession has operated relatively autonomously yet has been able to exert control over the work of other health professions and the allocation of health resources, health policy and the management of hospitals. This dominance has been sustained through the support of the state and of the profession's own collective organisation, the Australian Medical Association (Willis, 2006). A key feature of medical dominance is that doctors retain the right to determine what occupational and technical resources are required by a patient and, furthermore, they are not subject to evaluation or review by any other health profession (Freidson, 1970a).

In the years since Willis wrote his original account, significant socio-political changes, such as the corporatisation of medicine, proletarianisation and deprofessionalisation, have posed challenges to the dominance of medicine in Australia (Broom, 2006; Kenny & Duckett, 2004). Proletarianisation represents the erosion of professional autonomy resulting from the influence of organisational and managerial developments (Hardey, 1999); whilst in the context of medicine, deprofessionalisation has been associated with the demystification of medical knowledge and an increasing community scepticism surrounding the work of health professionals (Broom, 2006). The autonomy of doctors has been challenged by the collection of health data, which has given some transparency to the workings of the profession; the focus on evidence-based medicine, which is a response to increasing levels of litigation; increasing consumer awareness, and the

subsequent demand of patients to be actively involved in the management of their health; and the increasing corporatisation of health where doctors may be employees of third party companies. Moreover, there has been a decline in the authority that the medical profession has been able to exert over other health professions and there are indications that the state is no longer prepared to unreservedly support the dominance of medicine over other health professions (Coburn, 2006; Willis, 2006).

Despite these challenges, there is evidence that some elements of the authority and dominant status of the medical profession still persist (Germov, 2005). For example, compared to medicine, the nursing and allied health professions have struggled to achieve comparable levels of autonomy, status or power within the health sector (Germov, 2005). Additionally, it has been argued that medicine has influenced the education and practice of nurses, and thus the nursing profession has found it difficult to establish its professional identity (Blue & Fitzgerald, 2002). The allied health professions have encountered similar challenges to the extent that they have been described as ‘invisible’ compared to the more prominent nursing and medical fields (Boyce, 2006). In the Australian context, allied health professions typically include audiology, dietetics, hospital pharmacy, medical imaging, occupational therapy, orthoptics, orthotics and prosthetics, physiotherapy, podiatry, psychology, social work and speech pathology (Lowe & O’Kane, 2004). The term ‘allied health’ has become increasingly utilised in Australia and New Zealand since the early 1990s, although this generic term has not been associated with a diminution in the professional identity of the individual practitioner groups. Each profession within the allied health group has maintained separate associations and have strongly defended their scopes of practice and areas of expertise (Boyce, 2006). The dominance of the medical profession over allied health professions has been categorised in a number of ways: firstly, the work and knowledge of allied health stems from medicine and is approved by physicians; the medical profession assists in diagnosis and treatment; the work of allied health clinicians is usually requested and supervised by the medical profession and allied health do not enjoy equal status (Freidson, 1974). There is evidence to suggest that many allied health practitioners are dissatisfied with their professional status, income and relationship with doctors, and despite their increased autonomy, feel that the medical profession still dominates the health system (Kenny & Adamson, 1992). Although there is more recent evidence that the influence of medicine is declining and

that there has been a subsequent shift in some of their power to nursing and allied health professions, the shift is uneven, and allied health is less well represented at key management and decision making levels, compared to nursing and medicine (Long et al., 2006). Moreover, physicians retain their dominance as “important gatekeepers to the most effective, critical and desired technologies”, particularly in relation to new pharmaceutical products (Dingwall, 2008, p. 136).

Rank and file practitioners can pursue strategies of occupational control at the micro-level within teams and organisations which replicate the professional projects of their associations at the political macro-level (Cant & Calnan, 1991; Norris, 2001). For example, a study of health practitioners involved in treating musculo-skeletal disorders in New Zealand (including medical specialists, GPs, physiotherapists, chiropractors and a range of allied and alternative therapists), highlighted how there were few differences and significant overlap between treatments offered by these practitioners, thus making it difficult to distinguish themselves to potential patients (Norris, 2001). On an individual level, these practitioners did boundary work highlighting the differences between themselves and other practitioners, “not necessarily by describing real observed differences in practice, but by recounting stereotypes” (Norris, 2001, p. 28). It has been argued that the professional associations can only successfully pursue their macro-level strategies as long as practitioners are able to develop and sustain their professional identity at the micro-level, and work to distinguish themselves from other professional groups (Norris, 2001). In summary, the complexities of interprofessional working can only be fully understood within a framework of competition and political power, and that remediation tactics to improve interprofessional working will be unsuccessful if they are not cognisant of “the competitive and politically constituted system of professions and interprofessional working”(Salhani & Coulter, 2009, p. 1226). Moreover, the professions are unlikely to willingly engage in IPP unless their profession derives some benefit, thus creating a hurdle for effective interprofessional working (McLaughlin, 2013).

6.2.4.3 Models of Team Dynamics and Effectiveness

Teams have been described as “complex, adaptive, dynamic systems” (McGrath, Arrow, & Berdahl, 2000, p. 95), and interprofessional teams are further confounded by the multifaceted nature of the health care systems in which they operate (Jaca, Viles, Tanco, Mateo, & Santos, 2013; Kuipers, Ehrlich, & Brownie, 2014). An exploration of

interprofessional health care teams thus needs to be cognisant of team inputs, mechanisms and outputs in order to gain an understanding of their contexts and effectiveness (Ilgen et al., 2005; Mitchell, Paliadelis, et al., 2013). Therefore, two analytical models have been used to inform the theoretical framework for *Paper 2: Research Protocol*: the input-processes/mediator-output (IMO) model (Ilgen et al., 2005) and the theory of realistic evaluation (Pawson & Tilley, 1997).

Early models of teamwork were conceptualised as a linear unidirectional relationship between the inputs, processes and outputs of the team (also known as the I-P-O framework of team effectiveness) (Ilgen et al., 2005; Mathieu, Maynard, Rapp, & Gilson, 2008). The inputs or antecedent factors include the characteristics of team members; team-level factors, such as leadership and task structure; and organisational and contextual factors. Processes describe the activities or behaviours of the team, while the outcomes are the team results and outputs (Jaca et al., 2013; Mathieu et al., 2008). However, this oversimplified and static model does not adequately reflect the complex, non-linear and changing nature of team processes (McGrath et al., 2000) or the various types of team processes (Mathieu et al., 2008).

More recent models have recognised that teams are open, multilevel, complex systems which evolve over time (McGrath et al., 2000). The most widely discussed of these has been the input, mediators and output (IMO) model which was developed by Ilgen et al. (2005). This framework considers inputs, behavioural mediators (e.g., information sharing, information seeking, and communicating) in addition to emergent affective and cognitive states that develop during the life of the team. Examples of affective states include members' mutual trust or team climate, while cognitive states can include the team's shared mental model, collective knowledge or team learning. Importantly, it is acknowledged that the relationships between team inputs, mechanisms or mediators and outputs are not necessarily linear or additive (Ilgen et al., 2005; Jaca et al., 2013).

Similar models have been utilised elsewhere in teamwork research and reviews in health care. Jaca et al. (2013) utilise Ilgen et al.'s (2005) framework in their comparative exploration of the inputs, mediators and outputs of effective teamwork in the health care and manufacturing industries, while Lemieux-Charles and McGuire (2006) employ a similar model in their review of the literature relating to health care team effectiveness. Other literature has highlighted the importance of various team inputs, mediators and

outputs in determining interprofessional team effectiveness. For example, inputs such as team structure, size and composition have been shown to be important in determining interprofessional team outcomes (Xyrichis & Lowton, 2008), while behavioural mediators, such as information exchange, and affective mediators, such as the development of mutual trust, have been identified as critical in effective collaboration (D'Amour, Goulet, Labadie, Martin-Rodriguez, & Pineault, 2008; Suter et al., 2009).

The theory of realistic evaluation (Pawson & Tilley, 1997) also provides a useful framework to investigate causal relationships in interprofessional teams. In a similar fashion to Ilgen et al.'s IMO model (2005), realistic evaluation provides a framework to investigate complex, multicomponent health care systems (Berwick, 2008). Realistic evaluation argues that evaluation methods need to move beyond the simplistic positivist approach (Pawson & Tilley, 1997) that dominates research design in evidence-based medicine (Berwick, 2008). In its place it suggests that causation in the social world should be viewed in terms of context + mechanism = outcomes, also known as a CMO model. Realistic research design employs no standard formula but produces more detailed answers to questions of why an intervention works, for whom, and in what circumstances. More specifically “programs work (have successful ‘outcomes’) only insofar as they introduce the appropriate ideas and opportunities (‘mechanisms’) to groups in the appropriate social and cultural conditions (‘contexts’)” (Pawson & Tilley, 1997, p. 57).

The application of realistic evaluation in health systems research is relatively recent and very limited (Marchal, van Belle, van Olmen, Hoeree, & Kegels, 2012; Tolson et al., 2007). In the IPP arena, the approach has been used to assess interdisciplinary practice development in a rural primary care setting in Scotland (Tolson et al., 2007); to evaluate perceptions and outcomes of a new IPP program in Britain that challenged traditional organisational and health care boundaries (Pittam, Secker, & Ford, 2010); and as the basis of a protocol to explore contexts, mechanisms and outcomes of interdisciplinary cancer teams (Tremblay et al., 2014). In IPE, it has been used to assess the effectiveness of practice-based IPE (Steven, Dickinson, & Pearson, 2007); in a systematic review of IPE efforts (Hammick, Freeth, Koppel, Reeves, & Barr, 2007); and has been proposed as the most suitable method to evaluate the effectiveness of an interprofessional team training intervention (Reeves, Kitto, & Masiello, 2013).

Paper 2: Research Protocol utilises the principles of both the IMO and CMO models to construct a novel research design to explore IPP in a rural setting, and to examine context in terms of institutions and environments, participant perceptions about the mechanisms influencing IPP and expected and observed outcomes. This paper and the research design for the study are discussed in the following section.

6.3 Research Design and Method

This section discusses the research design and method of the larger research project investigating the factors and mechanisms influencing outcomes of rural IPP. The planned protocol for the study is detailed in *Paper 2: Research Protocol*, while the research method is covered in-depth in the two empirical publications, *Paper 3: Rural IPP* and *Paper 4: Workforce Shortages*. Hence this section will provide an overview of the key facets, as well as a brief discussion of the elements of the protocol which necessarily required modification during the research process.

6.3.1 Background

Recent commentary has noted that it is important that rural health research moves from its current focus on problems, populations and resource limitations to a more comprehensive examination of rural health contexts and systems (Bourke, Humphreys, et al., 2010a). Models of health care often need to be modified in rural settings to accommodate resource challenges and the local environment (Bourke, 2012; May et al., 2008), and this highlights the need to examine how rural context impacts on IPP. For example, rural health practitioners often utilise informal and dynamic work practices to manage workforce limitations and to provide services to a geographically dispersed population (Brems et al., 2006; Chipp et al., 2008). However, such informality and variability can make it more difficult to unravel the mechanisms underpinning effective IPP (Mitchell, Paliadelis, et al., 2013). Together these characteristics of rural health care reinforce the significance of contextual factors, mechanisms and outcomes associated with rural IPP.

6.3.2 Research Aim and Objectives

The principal aim of the broader research project was to investigate the factors contributing to effective interprofessional practice in rural contexts. The research objectives were to:

1. Explore approaches to interprofessional practice in health care in the context of rural health care centres.
2. Examine the ways interprofessional practice can be instrumental in overcoming challenges identified by clinicians working in rural hospitals and community health settings.
3. Understand the factors that make interprofessional practice in rural contexts successful and effective.

6.3.3 Research Design

The complex and unique characteristics of rural health care reinforce the utility of employing a modified research design based on the Input-Mechanism-Output (IMO) (Ilgen et al., 2005) and the Context-Mechanism-Output (CMO) (Pawson & Tilley, 1997) models. Similar frameworks have been used elsewhere in reviews and studies of interprofessional work (Jaca et al., 2013; Lemieux-Charles & McGuire, 2006; Reeves et al., 2007; Tremblay et al., 2014). Based on a review of the extant literature, with a particular focus on IPP in rural contexts, a range of factors were identified, including the policy and institutional context, professional and organisational settings, as well as potential mechanisms such as leadership, team dynamics and role clarity.

6.3.4 Ethical Considerations

Potential respondents were provided with a detailed information sheet explaining the purpose of the research and how anonymity and confidentiality would be maintained. Only those who provided informed written consent were included in the study. Approval to undertake this study was granted by the Hunter New England Human Ethics Committee (August 2010). A copy of this approval is included in Appendix 1.

Confidentiality and anonymity was maintained throughout the research process by using code numbers to replace names. Very limited demographic information about the

participants has been published to protect the identity of those involved. This was considered critical given the close-knit nature of the rural communities studied.

6.3.5 Sampling and Recruitment

Participant recruitment also presents particular challenges in rural settings (Cudney, Craig, Nichols, & Weinert, 2004; Lim, Follansbee-Junger, Crawford, & Janicke, 2011), while heavy workloads and a lack of time can be disincentives for rural clinicians to participate in research (Asch, Connor, Hamilton, & Fox, 2000; Foster et al., 2010). Hence, the research team adopted a novel sampling approach in an effort to overcome some of these challenges.

Participants were recruited from health care services within an Australian local health district (LHD) which covers urban, regional and rural settings in coastal and inland areas of New South Wales (NSW). Interviews were triangulated across acute and community care sectors, across roles and hierarchical levels in the organisation and across professional disciplines, to assure rigour in the data.

Although the research group designed a research protocol to facilitate participant recruitment, we still experienced difficulties in securing adequate numbers to join the study. This was not entirely unexpected given the heavy workloads, workforce shortages, lack of locum coverage, and the geographic dispersion of health providers in rural health services (Australian Government Productivity Commission, 2005; Senate Community Affairs References Committee, 2012). For the same reasons, it became increasingly evident during the data collection process that it would not be realistic to be able to arrange focus groups of 5 to 8 rural clinicians in the one location. Consequently the research group made the decision to abandon inclusion of focus group data for this project, and to rely on interview data that was sourced from a range of sectors, locations, roles, levels and professions within the LHD. Similarly, the collection of documentary data of patient charts and interprofessional meetings was abandoned due to inadequate resources within the LHD and in the research group.

6.3.6 Participants

The 22 participants included consultants, managers, policy makers and clinicians who were located in a range of settings (area management, acute care and community health)

and locations (community health centres, hospitals, individual practices and multipurpose services). The health professions represented in the sample included medicine, nursing, social work, speech pathology and occupational therapy, with the latter three being categorised as allied health professionals (AHPs) to preserve the anonymity of the participants.

6.3.7 Data Collection

Data collection involved one-on-one interviews, comprising structured and non-structured components (Cavana et al., 2001). Questions were based on the IPP literature, and related to: the benefits of IPP; how participants engage in IPP; the processes and mechanisms of IPP; the perceived barriers to, and enablers of, IPP; and suggestions for improvements. The interview protocol has been included in Appendix 2 and includes instructions to the interviewer ensuring compliance with ethical conduct. The interviews were conducted by the author and two other university-based research team members over a period of twelve months during 2011 and 2012. Electronic recordings of the interviews were transcribed by an external transcription service.

6.3.8 Qualitative Analysis

The initial stages of the analysis were carried out by all eight members of the research team. This involved gaining a preliminary impression of the data and then consensus was reached on the codes which would be used for the analysis. These codes were grouped under the following headings to provide a framework for further analysis: contexts (who, what, where), mechanisms/processes (how, why, why not) and outcomes. The research team then independently reread the transcripts, coded the data and noted exemplars. The final stages of analysis involved the author and another team member synthesising the separate analyses and then developing themes by means of an iterative process of reading, reflecting and writing (Sandelowski & Leeman, 2012). The themes were populated with representative quotes to ensure grounding in the data. Finally, this textual representation of the data was then endorsed by all research team members.

Although it was envisaged that the research team would use NVivo to conduct the analysis of the qualitative data, this became impractical as the team was geographically dispersed and most members were unfamiliar with the software. Given the relatively

small number of respondents, it was considered satisfactory to conduct the content and thematic analysis manually.

6.4 Discussion

This study set out to explore the role of professional identity in IPP, with particular emphasis given to its influence in rural IPP within the Australian health care context. The central argument of this thesis is that professional identity, professional identity threat and context together are pivotal in determining the success or failure of IPP interventions. The thesis also draws attention to how the issue of professional identity is closely linked to the evolution of existing health roles and the emergence of new ones, as well as the mutable role boundaries and scopes of practice that exist formally and informally within health care. Additionally, the thesis highlights that the tensions between professional identity and IPP can be mitigated through leadership strategies which recognise and value the skills and knowledge that each health professional brings to patient care and, to some extent, through the conditions which exist in the rural context.

Although IPP has received extensive coverage in the literature, its implementation continues to challenge health care managers and produce inconsistent results (Atwal & Caldwell, 2005; Bourke, Coffin, Taylor, & Fuller, 2010; D'Amour, Ferrada-Videla, San Martin-Rodriguez, & Beaulieu, 2005). In employing a sociological lens to this conundrum, this thesis responds to calls to more closely examine the nature and mechanisms of interprofessional collaboration between health professionals in IPP (Reeves, 2010). Moreover, it has been argued that “sociology can provide some much needed critical framing of interprofessional activities to understand how micro interactions between professions are enacted within larger political, social and economic structures.” (Reeves, 2010, p. 218). While social identity theory provides some clues as to the behaviour of the professional subgroups within interprofessional teams (Kreindler et al., 2012), *Paper 1: Professional Identity Threat* provides a more comprehensive analysis and explains that it is the presence of threat that is critical to understanding problematic interactions within interprofessional teams (McNeil, Mitchell, & Parker, 2013). The identity threat triggers that can precipitate faultlines between professional subgroups in the team can include: inconsistent treatment of the different disciplines;

conflicting values, cultures and norms; devaluing or disregard of other professions; the emergence of new health roles or where there is overlap or confusion over role boundaries; or, in rare cases, where there is simple contact between the different professions. Our analysis of threat also recognises how socio-political tensions between the professional associations in the health sector can filter down to impinge on interactions between the professions at the team and organisational level. In sum, our adaptation of Chrobot-Mason et al.'s (2009) typology of identity threat triggers advances our understanding of why faultlines develop in interprofessional teams and why professional identity threat can adversely affect team outcomes.

Contextual factors also play a crucial role in interprofessional relationships. As social identity is collectively experienced, it is context dependent (Chrobot-Mason et al., 2009). A salient social identity is one that is most valued and important in a given context (Hogg & Smith, 2007; Oliver, 2013). The largely uniprofessional education and socialisation processes that operate within the health sector mean that individual clinicians are likely to highly value their own profession and work to distinguish themselves from other professions in the team (Coyle et al., 2011). Consequently, professional identity is highly salient in interprofessional teams (Fitzgerald & Teal, 2004; Kreindler et al., 2012; Mitchell et al., 2010). Members of valued identity subgroups are likely to react negatively to threats to their group's status or norms; however, what might be perceived as threatening in one context, may be viewed as positive or neutral in another (Kreindler et al., 2012). Thus, in combination, professional identity threat and context are central to interprofessional team outcomes.

The importance of context led us to focus our study on IPP in rural health services, a setting which remains relatively unexplored in the interprofessional literature (Blue & Fitzgerald, 2002; Mitchell, Paliadelis, et al., 2013). To our knowledge, this research is among the first to examine the factors determining effective IPP, how IPP happens, and to also identify the barriers to, and enablers of, IPP in the Australian rural context. Such studies are important, given the distinctive challenges encountered in rural health care, the unique characteristics of rural settings and the evidence to indicate that IPP offers a viable mechanism to address some of those challenges (Mitchell, Parker, et al., 2013; Parker et al., 2013). Although health infrastructure and rural contexts vary substantially between countries, our study has relevance internationally, as similar issues challenge

rural health services in Canada, United States, New Zealand, United Kingdom and parts of Europe (Bourke, 2012).

The findings from the two empirical papers in this thesis (*Paper 3: Rural IPP* and *Paper 4: Workforce Shortages*) reinforce the importance of the relationship between professional identity and the rural context in interprofessional teams. The majority of our respondents were motivated to engage in IPP, yet that engagement is reliant on how clinicians interpret IPP within their particular setting or location. Informants recounted examples where the roles of GPs and nurses were expanding to include responsibility for initiating and maintaining collaboration across professional and organisational boundaries. In contrast, some clinicians were noted as adhering to traditional professional boundaries and hierarchies and not readily engaging with other health professionals in the care of their patients. This was associated with the non-valuing of other health professionals in the team and was seen to be the consequence of silo-based education and socialisation processes in health. The proximity and colocation of clinicians often found in rural health services promoted formal and informal knowledge sharing between the professions as well as the valuing and understanding of other health professionals' perspectives.

Workforce pressures in the rural health context can also motivate clinicians to adopt flexible modes of working, resulting in some blurring of professional boundaries. Such flexibility enables them to better manage their workloads and provide mutual support to their colleagues from other health professions. However, excessive workload shortages and the long term absence of key personnel were found to hamper IPP due to the absence of specific clinical skills. Overlap of scopes of practice has some limited application, but if pushed too far then such flexibility can become untenable and risk triggering threats to professional identity (McNeil et al., 2013). In combination these findings highlight the effect of contextual influences on professional identity and the related issues of role boundaries, traditional hierarchies in health and professional education and socialisation.

Leadership strategies also play a significant role in managing the negative effects of professional identity in IPP. *Paper 1: Professional Identity Threat* explains how team leaders can promote a team identity to help reduce social identity salience and thus reduce the likelihood of conflict between professional subgroups (Jehn & Bezrukova,

2010). Nonetheless, it is critical for managers to balance adoption of a superordinate team identity while valuing and respecting the identities of the relevant professional subgroups (Callan et al., 2007; Hornsey & Hogg, 2000b; Lau & Murnighan, 1998; Mitchell et al., 2011). Team leader reflexivity can assist in challenging professional cultures and norms and the differential treatment of the health professions, and so moderate identity threats (Long et al., 2006). However, team leaders are often members of the dominant identity group and thus need to be aware of the identity threat triggers that could provoke conflict within the team (Chrobot-Mason et al., 2009). *Paper 4: Workforce Shortages* reinforces the importance of team managers facilitating respect and understanding between the different health professions, and how the team can best utilise the skills and expertise available (Nisbet et al., 2013).

The additional papers in this thesis (Section 8) also reinforce the importance of leadership in managing professional subgroups and achieving improved interprofessional outcomes. *Additional Paper 1: Bridging professional boundaries through superordinate identity and transformational leadership* proposes that the mechanism of transformational leadership will minimise the emergence of conflict within interprofessional teams both directly and indirectly. Firstly, the paper explains that transformational leaders of interprofessional teams will foster a salient superordinate or team identity through the articulation of an inspiring vision, which in turn will reduce conflict. The Dual Identity Model (Dovidio, Gaertner, Niemann, & Snider, 2001; Dovidio, Gaertner, & Saguy, 2007) explains that it is possible for individuals to categorise themselves as part of the larger group while retaining their salient subgroup identity. Maintenance of a dual identity is important for health practitioners, who may view any diminution of their distinctive professional identity as a threat which can potentially generate conflict and resistance (Crisp, Stone, & Hall, 2006). The paper also proposes that transformational leadership will directly moderate the relationship between professional identity salience and affective conflict through the use of positive emotion to motivate and inspire team members (Bass & Avolio, 1995; Dubinsky et al., 1995); ‘repairing’ the mood of a team affected by negative events (Pirola-Merlo et al., 2002; Weiss & Cropanzano, 1996); and by fostering strong interpersonal and collaborative relationships (Farrell et al., 2005; Jung & Avolio, 2000). This paper adds to the body of knowledge on IPP through its examination of the

underexplored influence of transformational leadership on interprofessional team effectiveness (Bryant, 2003; Dionne, Yammarino, Atwater, & Spangler, 2004).

The quantitative study in *Additional Paper 2: Making Good on a Threat: Leading Innovation across Professional Boundaries* confirms the importance of leadership in determining IPP outcomes. The study analyses survey data from 75 acute interprofessional health care teams using the constructs of leader inclusiveness; threat to professional identity; professional identification; and team innovation. Leader inclusiveness is defined as a leader's active valuing and encouragement of contributions from all team members regardless of the differences in status or power, particularly in situations where the voices of lower status or less powerful members might otherwise not be heard (Nembhard & Edmondson, 2006). The analyses reveal that leadership inclusiveness facilitates innovation in interprofessional teams via the mediator of professional identification, contingent upon the presence of professional identity threat. Leader inclusiveness and strong professional identities within the team together provide a context where team members strive to express and defend their professional position and search for original solutions to team objectives that accommodate divergent opinions. The results demonstrate that inclusive leaders reinforce professional identification by valuing and encouraging each team member's professionally-based viewpoint, thus fostering knowledge sharing and integration. This analysis also finds support in the theory of dual identity: that a superordinate identity needs to be balanced with a focus on subgroup or professional identities (Hornsey & Hogg, 2000b; Mitchell et al., 2011) in order to achieve innovative solutions. This study extends our understanding of the relationship between leadership and social identity in predicting successful collaboration across professional boundaries, and the positive role that professional identity plays in generating active dissent, and hence fostering innovation in teams.

In conclusion, this thesis argues that professional identity, professional identity threat and context are instrumental in determining interprofessional outcomes. The analysis of identity threat in the literature in *Paper 1: Professional Identity Threat* explains how different salient professional identities within the team plus the events or actions which trigger an identity threat have the potential to engender conflict and tension. The qualitative analysis of data from our rural study in *Paper 3: Rural IPP* and *Paper 4: Workforce Shortages* reinforces that the factors influencing professional identity -

formal scopes of practice, flexible role boundaries, traditional hierarchies and professional education and socialisation processes – interact to affect IPP outcomes. The findings from our research also confirm the importance of context in IPP: the unique characteristics of the rural context can facilitate interprofessional working through sharing of knowledge, workload and responsibilities; yet intense workforce pressures can act to suppress effective collaboration between the professions, and potentially trigger professional identity threat. Additionally, this research, together with the analysis from the additional papers in this thesis (*Additional Paper 1: Bridging professional boundaries through superordinate identity and transformational leadership* and *Additional Paper 2: Making Good on a Threat: Leading Innovation across Professional Boundaries*), highlight that the negative impact of professional identity can be moderated by leadership strategies that value and encourage input from each health discipline within the team.

6.5 Implications

Governments and organisations may prescribe IPP as a policy directive, but they often fail to acknowledge how clinicians can use their discretion in interpreting and implementing such policies. Individual professional discretion can thus undermine potential success (Carrier & Kendall, 1995; Hudson, 2002). For example, evidence from our rural study suggests that IPP is primarily driven by the recognition that it benefits both clinicians and patients, rather than as a response to organisational policy. The reality of IPP implementation is not easy (Brownie et al., 2014; Loxley, 1997); therefore it is crucial that managers and policy makers are conscious of how context and mechanisms influence interprofessional teams (Proenca, 2007), as well as the factors that contribute to successful IPP outcomes (Doran et al., 2002). Awareness of potential threats to identity and contextual factors, and adoption of appropriate leadership strategies to manage these, are each critical to achieving success in interprofessional teams.

Threats to professional identity can manifest themselves in several ways and affect interprofessional outcomes. One of the most consistent themes that emerged from our qualitative study and the review of the IPP literature is that some clinicians are ignorant of the roles and potential contributions of other health professionals. Such ignorance can

be perceived as devaluing of, or insulting to, other members of the team (Baker et al., 2011), and can trigger professional identity threat. IPP is fostered by clinicians understanding the expertise and capabilities of other disciplines and how they can contribute to patient care. This knowledge can be developed during IPE, as well as on-the-job, as clinicians share knowledge with other professions (Interprofessional Education Collaborative Expert Panel, 2011). Moreover, the development of trust and willingness to engage in IPP is dependent on valuing the input of other health professionals (McDonald et al., 2012). Trust is based on the perceived competence of other health professionals and is fostered through professional and social interaction (D'Amour et al., 2008) which can be strengthened by the leadership strategies discussed later in this section.

Overcoming this lack of interprofessional knowledge can be challenging in rural areas. Given continuing and persistent workforce shortages (Bourke, Coffin, et al., 2010), the most viable solution to address role understanding and respect between the professions is through on-the-job facilitation of learning. The ageing of the rural health workforce (Senate Community Affairs References Committee, 2012) means that most practising clinicians would not have been exposed to IPE during their initial education; in addition, most continuing professional development is delivered to uniprofessional groups (Nisbet et al., 2013). In rural areas, inadequate locum coverage (Senate Community Affairs References Committee, 2012) means that attendance at external training is problematic. Thus, managers would be best to focus on facilitating learning to enhance their own team members' knowledge of other health professions' skills and knowledge, and how best to use the broad expertise within their team (Nisbet et al., 2013).

The existence of different values, world-views and perspectives on patient care within interprofessional teams can also provoke identity threat. Team leaders and managers need to appreciate that while practitioners may share a common purpose to provide health care to their clients, this does not necessarily equate to a common set of values or models of practice (Coyle et al., 2011). Additionally, the nature of interprofessional collaboration and teamwork may be understood quite differently by the different health professions (Finn, 2008; Haddara & Lingard, 2013; Reeves & Lewin, 2004). Such divergent outlooks are a consequence of uniprofessional education and socialisation processes (Ajjawi & Higgs, 2008; Clark, 1997; Sharpe & Curran, 2011).

Accommodation of these different viewpoints and values can be facilitated by leader inclusiveness (Nembhard & Edmondson, 2006), as well as setting aside time for the team to reflect and improve upon collaborative processes (Nisbet et al., 2013; Ovretveit, 1997).

Evidence from our rural study highlights the importance of boundary spanning roles (for example GPs and Hospital Discharge Planners) to enable IPP and facilitate communication across professions and sectors. However, GPs acting as boundary spanners can be associated with threats to professional identity. There is evidence that collaboration between GPs and other health professionals have not been successful because of poor role clarity (Lockhart, 2006) and a lack of trust, as well as perceived threats to autonomy and independence (McDonald et al., 2012). In Australia, multidisciplinary care plans that were introduced in the 1990s as a part of the Medicare-funded 'Team Care Arrangement' enabled patients with chronic, complex conditions to access Medicare rebates for a limited number of visits to allied health practitioners. Although these measures were supposed to support integration between GPs and private allied health clinicians, there is evidence of poor communication and strained working relationships between these providers (Harris et al., 2010). GPs already have to manage the needs of a broad spectrum of patients, so adding to the complexity for a small subgroup of patients who have to be referred to other services adds considerable pressure to their already significant workloads (Masso & Owen, 2009). Additionally, evidence from Canada and Australia suggests that most GPs do not have the time to keep up to date with the changeable and complex nature of community health services, nor do they have the resources to maintain the connections across disciplines and providers (Anderson & Larke, 2009a, 2009b; Masso & Owen, 2009; Wiese et al., 2011).

An example of the differential treatment of health professions can occur in terms of legal liability issues. Medical practitioners have direct legal accountability for patients under their care (Long et al., 2006; Nugus et al., 2010) and can be vicariously liable for the actions of other health professionals within the team (May et al., 2008). This can create uncertainty and potentially provoke identity threat. If the medical profession bears a greater accountability for patient outcomes, then efforts to implement shared decision-making and power within interprofessional teams are likely to be met with resistance (Chesters & Burley, 2011). This greater accountability reaffirms medicine's

dominant status in the health hierarchy (Lingard et al., 2012). However, recent developments in the Canadian courts have signalled that the legal system may be willing to embrace a broader definition of legal accountability, one that recognises that team members should be able to rely on their colleagues to practice to their individual profession's standard of care (Lingard et al., 2012). Until this is clarified in the Australian courts, however, team leaders need to navigate this contentious and complex issue.

Elements of the rural context can act to stimulate effective interprofessional relationships, however there is a limit to which these can mitigate resource challenges. For example, our study demonstrated that IPP was facilitated by nursing staff and AHPs who were willing to share responsibilities and blur professional boundaries as a means to manage workforce shortages, absences, the geographic dispersion of clients and to minimise professional isolation. These examples of 'role bending' reflect a flexibility and a willingness to work in a different way (Hudson, 2007). Moreover, it has been noted that flexibility in roles, work practices and targeted services to meet rural needs is likely to be more viable than expending additional efforts on recruitment (Allan, Ball, & Alston, 2007). However, such flexibility has a limit, and any hint of genericism can engender professional identity threat (Cameron, 2011; McNeil et al., 2013). Individual health professions need to maintain their distinctiveness (Kreindler et al., 2012; Wakefield et al., 2006), and therefore it is important to reinforce each profession's unique skills and expertise within the team (Booth & Hewison, 2002). Other authors have argued that collaboration should not encompass blurring of professional boundaries (Wakefield et al., 2006), with the risk that informal blurring of roles can lead to role confusion, patient anxiety and misunderstanding (Loxley, 1997). There is also the danger that managers will feel compelled to combat workforce shortages by moving towards a 'generic' health care worker, who can work across a range of disciplines but "with no particular professional identity or affiliation" (Bainbridge & Purkis, 2011, p. 34), with concerns that there would be a subsequent erosion in the expertise of some health professions (Pollard et al., 2005). Overall, if threats to identity are not managed effectively, then conflict and tension are likely to subvert interprofessional objectives (McNeil et al., 2013).

This thesis has shown that leadership can be pivotal in overcoming identity threats within teams. Firstly, it is important that the leaders of interprofessional teams, who are

often members of the dominant professional group, are sensitive to the context and history of identity conflicts and the types of identity threats that can trigger conflict in their team (Chrobot-Mason et al., 2009). Secondly, transformational leaders can minimise the negative consequences of professional identity salience through the development of a common team identity, while maintaining the distinctiveness of valued professional identities. Transformational leadership also has a direct role in minimising conflict through the development of strong interpersonal relationships and promoting open-minded interaction within teams. Thirdly, this thesis argues for a positive role for identity threat which, coupled with inclusive leadership, can motivate team members to strongly defend their professional opinions, therefore facilitating innovative solutions that incorporate the divergent viewpoints within the team. Hence, leadership has a significant role to play in balancing development of a common team identity while accommodating the distinctive identities within the team. However, this guidance on leadership of interprofessional teams comes with two important caveats. Recent evidence points to managers being inadequately equipped to manage across social identity boundaries (Ernst & Chrobot-Mason, 2011). Additionally, we have emphasised the importance of managers utilising informal workplace learning to develop their team members' understanding of the skills, expertise and perspectives of other health professions (Nisbet et al., 2013; Ovretveit, 1997); unfortunately, this competency is rarely addressed in management development training (Eraut, 2004).

This analysis has highlighted the importance of professional identity, identity threat and context in influencing interprofessional team outcomes. Furthermore, it reinforces the importance of leadership strategies in managing and acknowledging different professional identities within a team, minimising the negative consequences of threat, and harnessing its positive impact on innovation. Although the transferability of our study's findings may be limited by our focus on the Australian rural context, it does affirm the significance of the contextual factors and mechanisms that underpin interprofessional working, and that determine whether the potential benefits of IPP to patients, clinicians and the organisation are attainable.

6.6 Future Research

This study signals a number of areas for potential future research. These centre on triggers of professional identity threat and IPP in the rural context.

The typology developed in *Paper 1: Professional Identity Threat* provides a conceptual framework to more comprehensively investigate the triggers of professional identity conflict within interprofessional teams. For example, future studies could investigate specific triggers such as differences in professional values, remuneration or autonomy to gauge the strength of their effect in teams. Identity threat triggers could be examined and compared across different contexts, such as urban versus rural health services, or across various settings such as acute, community health and general practice. Future studies could also investigate which triggers provoke stronger faultlines and are thus more difficult to manage (Thatcher & Patel, 2011). For example, differential treatment is in part a function of broader institutional forces, and therefore could be problematic to modify. However, triggers based on different values could be overcome by inclusive leadership through a focus on patient-centred care (Nembhard & Edmondson, 2006; Thatcher & Patel, 2011), or through on-the-job learning and reflection (Nisbet et al., 2013). A deeper analysis of these professional barriers to effective collaboration will provide valuable information for health service managers.

The two empirical papers, *Paper 2: Rural IPP* and *Paper 3: Workforce Shortages*, provide a solid platform for future research investigating IPP in the rural context. Firstly, a more in-depth examination of a number of single health care settings, plus an analysis of diary records, would provide a more detailed picture of how workload sharing and flexibility in role boundaries plays out in individual teams over time. A longitudinal study of IPP finds support in earlier research which demonstrates that interprofessional teamwork becomes more effective as teams mature (Farrell, Schmitt, & Heinemann, 2001; Hudson, 2002). Inclusion of a broader range of clinicians, such as Practice Nurses and NPs, as well as emerging health roles such as Allied Health Assistants and Nursing Assistants (Duckett, Breadon, & Farmer, 2014), would provide a more complete picture of rural IPP. In particular, an analysis of the impact of new health roles on professional identity would provide important information regarding

potential identity threats. Finally, a study of patients' perspectives of interprofessional care would provide key additional data on interprofessional effectiveness.

6.7 Conclusion

Professional diversity in interprofessional teams, in itself, is not a recipe for failure; however, collaboration across professional boundaries is not easy. The distinct and valued professional identities that exist within health care can be subject to threats which are not always acknowledged as barriers to effective interprofessional collaboration. Identity threat triggers can engender faultlines when professional subgroups are afforded different benefits and status; when the contribution of any of the professions is devalued or overlooked; or when a profession's exclusive claim to specialist knowledge is threatened by an emerging or adjacent health care role. Nevertheless, the perception of such identity threats is context dependent. Elements of the rural context can facilitate interprofessional working, yet chronic workforce pressures or extended role overlap can prompt identity threat and thus challenge interprofessional initiatives. However, adherence to strict role boundaries and traditional ways of working, and the devaluing of other professions' contributions, continues to undermine IPP, even in rural settings. Armed with this knowledge, team leaders can overcome the negative effects of professional identity by promoting informal collaborative learning, by developing a common team identity, and ensuring that the unique contributions of each profession is valued and encouraged. In doing so, they are far more likely to harness the benefits that professionally diverse teams can bring to patient care.

7 Published Papers

7.1 Criteria for Journal Selection

The topic of this thesis broadly fits within the field of health services management, and thus draws on literature from sociology, management, nursing, medicine, organisational behaviour, human resource management, and psychology. The decision to publish in each of the following journals was determined by the scope and the status of the journal and the interdisciplinary nature of the research topic. Both the Australian Research Council's (ARC) ERA 2010 Rankings and Thomson Reuters Impact Factors have been used as gauges of journal status. These measures are explained in Appendices 3 and 4.

7.1.1 Health Sociology Review (HSR)

This international scholarly journal explores sociological issues in relation to health policy and practice, and was therefore a logical choice for *Paper 1: Professional Identity Threat*, a conceptual paper which is largely informed by sociological and psychological theory. There is only one other journal that focuses on health and sociology (*Sociology of Health & Illness*), thus reinforcing its importance in this field of research. Submissions to the journal undergo a blind review with 50 per cent gaining acceptance. Cabell's Directory (2014) ranks the difficulty of acceptance in this journal as 'rigorous' (in the top 10 per cent of journals) in Nursing and in Health Administration. Additionally, Cabell's Directory classifies the journal as having high influence. It is ranked ERA (B), with an impact factor of 0.456 and a 5 year impact factor of 0.848 (2013). These measures combine to point to the quality and influence of this journal in a range of disciplinary fields and to the rigorous process of evaluation to which submissions are subject.

In earlier issues, HSR has examined the history and sociology of the health professions with some emphasis on the traditional dominance of the medical profession within the health hierarchy. This paper draws on this knowledge as well as the general literature on IPP and social identity theory. It employs Chrobot-Mason et al.'s (2009) typology of triggers of social identity conflicts to develop a conceptual model which explains how identity threat influences the effectiveness of interprofessional teams within health care. Thus, this is an innovative and important extension of the literature within the journal and of Chrobot-Mason et al.'s (2009) work, which helps to unravel part of the puzzle of why interprofessional teams can be tainted by conflict and substandard outcomes.

7.1.2 Journal of Advanced Nursing (JAN)

This highly-ranked international journal has an intended readership which includes researchers and practitioners from nursing and researchers from other disciplines with an interest in interprofessional collaboration. According to JAN's aims and scope, "Papers published in JAN are increasingly cited in reviews of evidence and used by other health care professionals, policy-makers, commissioners and users of services to inform their decision-making and practice" (Wiley Online Library, 2014a, n.p.). JAN is ranked ERA (A*), with an impact factor of 1.685, with Cabell's Directory (2014) classifying it as 'high influence' in Nursing. In the Journal Citation Reports (Web of Science, 2014) it is ranked 18/104 in Nursing (Social Science), and 19/106 in Nursing (Science). It is notable that there is only one other higher ranked journal (*International Journal of Nursing Studies*) which considers submissions relating to broad health services and management, and specifically target their readership to include disciplines outside nursing. Overall, this reinforces the importance of JAN in both nursing and interdisciplinary research and its influence in informing health policy and management, therefore making it an appropriate outlet for the paper. Submissions to JAN are double-blind peer reviewed, with an acceptance rate of only 20 per cent (which is rated by Cabell's as 'difficult'), and this reflects the rigorous process to which papers are subject prior to publication.

Paper 2: Research Protocol builds on the body of research within JAN that relates to interprofessional practice and to research protocols which consider both context and mechanisms of effect. Notably, this paper is the first, to our knowledge, to extend this work by developing a protocol which seeks to identify the enablers of, and barriers to, rural interprofessional practice. The protocol also aims to overcome some of the challenges of recruitment of health service providers in rural research, which have been noted elsewhere (Asch et al., 2000; Foster et al., 2010).

7.1.3 BMC Health Services Research (BMC HSR)

BMC HSR is a highly-ranked open-access journal which considers papers on a wide range of topics relating to health services research and management, thus making it particularly relevant for *Paper 3: Rural IPP*. Cabell's Directory (2014) classifies this journal as of 'significant influence' (in the top 20 per cent of journals) in Nursing and of

‘high influence’ in Health Administration. This journal has an impact factor of 1.659 (Web of Science, 2014), which makes it the second highest ranked broad-based journal with ‘Health Services’ embedded within its title. It is ranked as an ERA (B). Each of these measures point to BMC HSR’s prominence in the field of health services research. Paper submissions receive an expert peer and/or editorial review and publication is dependent upon “scientific validity and coherence” and “whether the work represents a useful contribution to the field” (Biomed Central, 2014, n.p.). The reported journal acceptance rate is 68 per cent, which is rated as ‘difficult’ (Cabell’s International, 2014).

Paper 3: Rural IPP adds to a substantial body of work that already exists within BMC HSR which relates both to interprofessional health practice and to rural health services. Significantly, the study appears to be the first to examine the barriers to, and enablers of, rural IPP across a number of settings and locations within the Australian context.

7.1.4 Scandinavian Journal of Caring Sciences (SJCS)

SJCS is an established journal with “an outstanding international reputation” (Wiley Online Library, 2014b, n.p.) and a strong focus on interprofessional team issues, thus making it a highly relevant outlet for *Paper 4: Workforce Shortages*. Cabell’s Directory (2014) classifies this journal as of ‘high influence’ in Nursing. Thomson Reuters Journal Citation Reports indicate that it has an impact factor of 1.162, and is ranked 32/104 in Nursing (Social Science) (Web of Science, 2014). It is also ranked ERA (A*). These measures highlight the SJCS’s importance in the health and nursing fields. Manuscripts are subject to a double-blind peer review with 45 per cent of submissions being published. Cabell’s Directory (Cabell’s International, 2014) classifies the difficulty of acceptance as ‘difficult’.

The paper builds on a considerable body of work relating to IPP and professional roles within SJCS which includes two important studies within the field (Atwal & Caldwell, 2002, 2005). Notably, the paper offers a novel perspective on the relationship between rural workforce shortages and effective interprofessional practice.

7.2 Paper 1: Professional Identity Threat

Full Citation:

McNeil, K., Mitchell, R., & Parker, V. (2013). Interprofessional Practice and Professional Identity Threat. *Health Sociology Review* 22(3), 291-307. doi: 10.5172/hesr.2013.22.3.291

7.2.1 Statement of Contribution of Others

A copy of the relevant signed statement appears on the following unnumbered page.

Statement of Contribution of Others

We, **Rebecca Mitchell**, **Vicki Therese Parker** and **Karen McNeil**, attest that PhD candidate, **Karen McNeil**, had the primary and lead role in the overall conception, drafting and final revision of the publication entitled:

McNeil, K., Mitchell, R., & Parker, V. (2013). Interprofessional Practice and Professional Identity Threat. *Health Sociology Review* 22(3), 291-307. doi: 10.5172/hesr.2013.22.3.291. (Also known as Paper 1)



Rebecca Mitchell (Co-Author)

Date: 4 August 2014



Vicki Therese Parker (Co-Author)

Date: 14 August 2014



Karen Anne McNeil (Candidate)

Date: 14 August 2014



Frank Agbola (Acting Assistant Dean Research Training (Faculty of Business and Law))

Date: 02/09/2014

7.2.2 Introduction

Interprofessional teams comprising clinicians from a range of disciplines have long been advocated as a solution to a myriad of health service challenges, yet the literature is littered with examples where such teams have not met expectations. This conceptual paper offers a novel explanation as to why interprofessional teams can be successful in some domains, yet not successful in others, by explicating how IPP initiatives can be obstructed by interprofessional conflicts related to threats to professional identity. The analysis addresses a gap in the literature by extending Chrobot-Mason, Ruderman, Weber, and Ernst's (2009) typology of triggers of social identity conflict to explore how faultlines appear in interprofessional teams and why professional identities become salient and impair team functioning. The triggers that can activate faultlines within a health care team can include the differential treatment of professional groups, competing professional values, and where confusion and tension arises from overlapping or new health roles, or possibly by virtue of simple contact between the different professions.

The study relies on two of the major approaches to understanding IPP reviewed earlier in this thesis: social identity theory and the history and sociology of the professions. Firstly, drawing on social identity theory, the paper explains how an individual's professional identity can be more valuable and salient than a social identity based on gender, age, race or nationality (Adams et al., 2006; Hogg & Terry, 2000). This professional identity is formed during education and professional socialisation processes, which mean that the different health professions develop divergent values, ideologies, practices and discourses about the patient (Clark, 1997; Mackay et al., 1995; Pecukonis et al., 2008; Sharpe & Curran, 2011). Consequently, the different health professions are likely to view their own and other professional groups as significantly different (Coyle et al., 2011). Social categorisation clarifies how health care teams comprising different professions can operate at suboptimal levels, where individuals favour those in the same profession (in-group members) and discriminate against other professions (out-group members) (Mitchell et al., 2010; Tajfel & Turner, 1986; van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). Categorisation processes resulting in intergroup biases or conflict are not automatic in teams comprising different identity subgroups, but are context dependent, and are more likely to erupt when a

salient social identity is threatened (van Knippenberg, De Dreu, & Homan, 2004). However, the literature points to the salience of professional identity in interprofessional teams (Fitzgerald & Teal, 2004; Mitchell et al., 2010), and how the need for different professions to share power and responsibility for decision-making can pose a threat to individual clinicians (Baker et al., 2011; Kuper & Whitehead, 2012).

The second approach, the history and sociology of the professions, reveals how IPP needs to be examined in the light of how the health professions have evolved and continue to adopt strategies aimed at cementing and growing their status, power and domains. In particular, an examination of professional identity threat needs to be cognisant not only of the immediate work context, but of the broader societal context and the history of tensions between the professions (Chrobot-Mason et al., 2009). Sociologists have described how the competition between professional associations helps to define the power relations in the health sector (Coburn, 2006), and how disputes between neighbouring professions over jurisdictional boundaries means that the system of professions is in constant flux (Abbott, 1988; Lamont & Molnár, 2002). This highlights how macro-level disputes between professional associations are likely to filter down to contentious relationships between the different professions at the micro-organisational and team level.

Activated 'faultlines' between identity subgroups within larger workgroups can result in behaviours which impair team performance and member satisfaction (Bezrukova, Jehn, Zanutto, & Thatcher, 2009; Lau & Murnighan, 1998; Thatcher & Patel, 2011). Chrobot-Mason et al. (2009) have identified a typology of triggers that activate faultlines, and thus result in conflict between identity groups. Utilising this typology, this paper explicates how each of these triggers (differential treatment, different values, assimilation, insult or humiliating action, and simple contact) are relevant to interprofessional working. In IPP, differential treatment is pertinent to the dominance of the medical profession (Reeves, 2011a) and, for example, the superior recognition and rewards that medical specialists attract compared to their non-medical colleagues (Nancarrow & Borthwick, 2005) as well as the greater levels of authority and autonomy afforded the medical profession (Bourgeault & Mulvale, 2006; Germov, 2005). The different values held by the different health professions resulting from divergent education and socialisation processes (Clark, 1997; Mackay et al., 1995; Pecukonis et al., 2008; Sharpe & Curran, 2011) can contribute to social and cognitive boundaries

which impede the transfer of knowledge (Ferlie, Fitzgerald, Wood, & Hawkins, 2005), conflicting perspectives of teamwork (Cott, 1998) and a poor understanding of other health roles' scopes of practice and expertise (Sharpe & Curran, 2011). Blurring of professional boundaries can be interpreted as insulting or devaluing of the expertise of health professions and can provoke identity threat (Brown, Crawford, & Darongkamas, 2000), potentially resulting in ambiguity and tension within the team (Scholes & Vaughan, 2002). The emergence of new health roles has also been construed as a threat to the medical profession and has been met with significant opposition (Appel & Malcolm, 2002; Turner et al., 2007). Simple contact has the potential to engender conflict between salient professional subgroups, however the evidence suggests that this rarely occurs. Importantly, each of these triggers are dependent on the particular work context (Chrobot-Mason et al., 2009).

There are various strategies which can be implemented to overcome the harmful consequences of social categorisation. For example, superordinate team goals can reduce the likelihood of conflict between identity subgroups, although it is critical that individual professional identities are respected (Callan et al., 2007), while transformational leadership can enhance the performance of diverse teams by, among other things, fostering a collective identity (Kearney & Gebert, 2009).

This analysis of the IPP literature utilising Chrobot-Mason et al.'s (2009) typology provides a conceptual framework to further investigate the triggers of professional identity conflict within interprofessional teams, and it offers useful insights for health managers and team leaders.

This paper contributes to the overall thesis by reinforcing the critical role that professional identity and professional identity threat play in IPP effectiveness. It further highlights the importance of context in triggering professional identity threat: both in the immediate work context and on the broader political and socio-historical stage, where the health professions have competed over role boundaries and scopes of practice. The significant relationship between professional identity, context and IPP effectiveness is also examined in *Paper 4: Workforce Shortages*. It reveals how the rural context can both facilitate and hamper effective IPP, dependent upon resource availability. Furthermore, various issues linked to professional identity, including role overlap, blurring of professional boundaries, respect and understanding of the skills and

expertise of other professions in health care, and the persistence of traditional boundaries and hierarchies are each shown to be important factors influencing rural IPP. Both of these papers make a significant contribution to our understanding of the role of professional identity and context in interprofessional working.

Paper 1's important contribution to the existing IPP literature is reinforced by the following comment from one of the journal's (HSR) reviewers:

This article addresses an important issue in IPP, namely the factors that are associated with the failure of IPP implementation. The authors use a typology framework of social identity conflicts and this is a novel application to the field of IPP literature. I believe this paper makes a valuable theoretical contribution to the IPP area, particularly in applying the concepts of faultlines and triggers of identity conflict.

7.2.3 Publication

Interprofessional Practice and Professional Identity Threat

Abstract

The implementation of interprofessional practice (IPP) within healthcare appears to be fraught with difficulties, despite the attention it has received in the literature. Although there are examples where IPP has reaped significant benefits, it has also been shown to impede team performance. We demonstrate that a key cause of failure in IPP can be attributed to interprofessional conflicts based on threats to professional identity, and provide insight into how professional identity faultlines have the potential to be activated and conflict induced when there is differential treatment of professional groups, different values between professions, assimilation, insult or humiliating action and simple contact within the team. This has significant implications for the management of interprofessional healthcare teams and provides information for team leaders and health managers.

Keywords: interprofessional, teams, sociology, professional identity, identity threat, medical dominance

Introduction

Interprofessional practice (IPP) aims to bring together a range of health care professionals from different specialities and disciplines so that patients receive the highest quality care. In doing so, IPP requires that those involved acknowledge and value the contribution and expertise that other health care professionals can bring to patient care (World Health Organization (WHO), 2010; Zwarenstein, Goldman, & Reeves, 2009). This collaboration across professional boundaries to deliver integrated services and solve complex healthcare problems, is a priority for health service management, policy-makers and governments internationally (Australian Government, 2009; Australian Government Productivity Commission, 2005; Canadian Health Services Research Foundation (CHSRF), 2007; Centre for the Advancement of Interprofessional Education (CAIPE), 2008; Chesters et al., 2011). The drive to adopt interprofessional practice (IPP) in part stems from recognition that the management of chronic conditions requires the skills and inputs from a wide range of health professions (Chesters & Burley, 2011; Duckett, 2005). However, despite the considerable time over which interprofessional learning and IPP have been promoted, discussed and researched, its translation to the workplace has produced mixed results. When successful, IPP has been shown to reduce service duplication, enhance patient outcomes, increase staff satisfaction and hospital efficiency (Canadian Health Services Research Foundation (CHSRF), 2007; Lemieux-Charles & McGuire, 2006; Long et al., 2006; Tieman et al., 2006). However, IPP has also been found to trigger conflict, information withholding and poor team performance (Adams, 2004; Caldwell & Atwal, 2003; McNair, 2005).

Where IPP has not succeeded, a key cause of failure can be attributed to interprofessional conflicts based on differences associated with, and threats to

professional identities. Professional identification has been found to play a key role in IP team success and teams reporting high levels of identity threat demonstrate poor performance (Mitchell et al., 2011). Understanding the factors that contribute to professional identity threat is critical to successful IPP.

Within the framework of social identity theory and its extension, professional identity theory, we argue that threat to professional identity emerges consequent to differential treatment of professional groups, different values between professions, assimilation, insult or humiliating action and simple contact (Chrobot-Mason et al., 2009). By understanding the mechanisms underpinning the development of identity threat, we provide insight as to why translation of IPP in the workplace has produced mixed results. Thus the purpose of this paper is to address a significant gap in the literature by extending Chrobot-Mason et al.'s (2009) typology to explore the triggers of professional identity conflicts, to understand why faultlines appear in interprofessional teams and why professional identities become salient and impair team functioning.

The paper proceeds with an introduction to IPP and a summary of the varying results from workplace studies. A summary of social identity and professional identity theory is provided as a background to the types of actions and events that trigger professional identity threats. We then discuss the extant literature on IPP within the framework of Chrobot-Mason et al.'s (2009) typology highlighting how the underlying themes of medical dominance, differing processes of professional socialisation, the blurring of roles and the advent of new health occupations are potential triggers of professional identity conflicts within healthcare teams. This is followed by a review of the implications of the research findings for improving practice.

Mixed Results in IPP Research

Interprofessional practice (IPP) or collaboration is a team-based, patient-centred approach to the delivery of health care that synergistically draws on the varying skills and expertise of a range of health professionals so that patients receive optimal care (Hoffman, Rosenfield, Gilbert, & Oandasan, 2008). Despite the consistent promotion of IPP as a mechanism to address a range of issues within the health sector (for example, Australian Government, 2009; Australian Government Productivity Commission, 2005), the evidence for the effectiveness of interprofessional teams is mixed. On the one hand, the implementation of such health-care teams is shown to enhance innovation, reduce health care costs and waiting times, and lead to clinical improvements in patients and more effective utilisation of resources (Canadian Health Services Research Foundation (CHSRF), 2007; Dietrich et al., 2004; Long et al., 2006; Tieman et al., 2006). On the other hand, interprofessional teams can be dogged by negative emotions, information withholding, conflict, impeded diffusion of innovation and poor team outcomes (Adams, 2004; Caldwell & Atwal, 2003; Ferlie, Fitzgerald, McGivern, Dopson, & Exworthy, 2010; McNair, 2005). These inconsistent research findings in IPP research can in part be explained by the categorisation-elaboration model (CEM) (van Knippenberg et al., 2004).

The CEM has integrated and reconceptualised two different analytical perspectives on team diversity and performance, explaining how diverse composition can potentially generate both positive and negative effects (van Knippenberg et al., 2004). First, the information/decision-making perspective holds that heterogeneous groups can produce higher quality outcomes through access to a wider range of knowledge, skills and viewpoints (Ancona & Caldwell, 1992; Bantel & Jackson, 1989; De Dreu & West, 2001). In contrast, social identity theory and social categorisation reveal how diverse

composition within the team can provoke group members to categorise others as either in-group/similar or out-group/dissimilar, potentially resulting in the formation of identity-based subgroups and impairing group processes (Mitchell et al., 2010; van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). The CEM clarifies how negative outcomes in diverse groups can be provoked by intergroup bias flowing from social categorisation processes thus disrupting the effective exchange and integration of information (van Knippenberg et al., 2004). However, such intergroup biases are context dependent and are most likely to arise when salient social identities are threatened or challenged (van Knippenberg et al., 2004). Recent literature points to the salience of professional identity within interprofessional health care teams (Fitzgerald & Teal, 2004; Mitchell et al., 2010) and to how the perception of professional identity threat plays a moderating role in the relationship between professional diversity and team performance (Mitchell et al., 2011). The salience of professional identity and the occurrence of professional identity threats in IPP are explored in the following sections.

Professional Identity and Professional Identity Threats

Professional identity is considered to be a relatively enduring form of social identity which manifests itself in terms of how members of a profession categorise and differentiate themselves from members of other professions (Schein, 1978). A person's professional identity can in fact be more pervasive and salient than their identity based on gender, age, race or nationality (Adams et al., 2006; Hogg & Terry, 2000). At the macro-level – the 'public face' of the profession - professional identity relates to the status, privileges, duties and self-image of the profession, whilst at the micro or individual level it can refer to the tacit behavioural norms of the profession (Wackerhausen, 2009). Professional identity is also a function of the narratives promulgated by its members which often emphasise the profession's "virtues, victories,

or unjust suffering and their (the other professions’) vices, failures and undeserved victories” (Wackerhausen, 2009, p. 460). The health workforce comprises a large number of separate professions who are generally educated separately from one another and as a result have established different ideologies and practice frameworks (D’Amour & Oandasan, 2005; Duckett, 2005). This professional socialisation and education process means that individuals are likely to strongly identify with their own professional group and perceive significant differences with other health professions (Coyle et al., 2011). The salience of professional membership can be heightened in the context of reforms to introduce IPP, when the reforms are interpreted as a threat to traditional professional groups and identities (Callan et al., 2007).

Where a valued social identity is threatened within diverse groups such as interprofessional teams, the tendency towards social categorisation and stereotyping can be exacerbated (Voci, 2006) potentially resulting in defensive actions and conflict (Hornsey & Hogg, 2000a). Professional identity may be construed as being threatened when there is a perceived risk of the marginalisation or devaluation of the profession’s role or expertise (Steele et al., 2002). Within interprofessional teams, perceptions of other professions’ roles, values and motivations can be at odds with that profession’s construction of themselves, even to the extent of being harsh or even unjustly negative (Lingard et al., 2002) whilst simplistic and misrepresentative constructions of other professions have engendered hostile, unco-operative interprofessional interactions and poor performance (Helmreich & Schaefer, 1994). Social identity threat has been empirically related to a range of negative affective responses (Cottrell & Neuberg, 2005) which in turn may result in the withdrawal of team members or the withholding of information (Amason, 1996). All these factors contribute to limiting the effectiveness of diverse groups.

Furthermore, an analysis of social or professional identity threat must recognise the broader societal context as well as historical conflict between identity groups (Chrobot-Mason et al., 2009). Any conflict existing between social identity groups reflects both current circumstances and the results of historical tension and disputes. Historical influences on current tensions can be powerful and are referred to as ‘intergroup anxiety’, a phenomenon that intensifies behavioural responses to out-group members, amplifies biases and stereotypes and contributes to feelings of social identity threat (Stephan & Stephan, 1985). ‘Intergroup anxiety’ is relevant to interprofessional teams as health care practitioners have been known to cling to their professional history during periods of organisational change (Bainbridge & Purkis, 2011). For example, the relationship between doctors and nurses reveals “a history of conflict and domination by medicine over nursing” (Blue & Fitzgerald, 2002, p. 315). Sociologists have variously described how professional associations engage in professionalisation and occupational control strategies (for example, Abbott, 1988; Johnson, 1972; Willis, 1983). The professions have been described as actors striving to maintain and expand their domains of work and scopes of practice in a market of competing professional groups which ultimately defines the power relationships within the health sector (Coburn, 2006). Thus changes in the scope of practice of one profession will impact on the domain of neighbouring professions (Abbott, 1988). This is important in reinforcing that current disputes between professional associations will likely influence IPP at the workplace level.

Faultlines & Triggers of Professional Identity Conflict

The construct of ‘faultlines’ was introduced by Lau and Murnighan (1998) to explain how social identity differences may engender conflict within organisations. Faultlines are defined as “hypothetical dividing lines that may split a group into subgroups based

on one or more attributes” (Lau & Murnighan, 1998, p. 328). Activated faultlines can lead to the formation of salient and recurrent subgroups via the process of social categorisation, fuelling relationship conflict, political infighting and withholding information from other subgroups thus marring performance and satisfaction (Bezrukova et al., 2009; Lau & Murnighan, 1998, 2005; Thatcher & Patel, 2011). The faultline construct was extended by Chrobot-Mason et al. (2009) to identify a typology of events, behaviours or triggers that precipitate faultlines provoking conflict between identity subgroups, resulting in negative work outcomes. These triggers are both dependent upon intergroup anxiety (Stephan & Stephan, 1985) and on the particular work context. For example, a managerial decision may result in two identity groups receiving differential treatment or it may not recognise the values associated with one particular identity group. Such a decision can heighten the affronted group members’ awareness of whether social identity is influencing the behaviour of others in the organisation. If such an event is significant or meaningful within the broader societal context, then social identity threat may be precipitated. Chrobot-Mason et al. (2009) define such an event as a trigger if it involves two or more people from different identity groups and “ignites a replication of societal-based identity threat in an organisation” (p. 1770). Even small events can act as triggers in groups with strong faultlines (Steele et al., 2002). Table 1 defines each of Chrobot-Mason et al.’s (2009) triggers of social identity conflict along with explanatory examples from their comprehensive study. Table 2 summarises our analysis of professional identity threat triggers within interprofessional teams using examples sourced from extant IPP research.

Differential Treatment

This category in the typology is a classic representation of the in-group being favoured over the out-group and is the most common trigger for identity threat in Chrobot-Mason

et al.'s (2009) study. For example, should the in-group receive preferential treatment in terms of status, pay, opportunities or recognition within an organisation then this is likely to heighten the salience of professional membership as a social identity, trigger professional identity threat within interprofessional groups and produce inferior work outcomes.

In the context of health care, differential treatment is most often discussed in terms of dominance of the medical profession. For example, although it makes up a small fraction of the total Australian health workforce (Australian Institute of Health and Welfare (AIHW), 2011), the medical profession has been traditionally acknowledged as the most dominant profession in the health sector (Benoit et al., 2010; Freidson, 1970b; Hallinan & Mills, 2009; Larkin, 1983; Witz, 1992). Despite a number of significant socio-political changes challenging the dominance of medicine in recent years (Broom, 2006; Coburn, 2006; Kenny & Duckett, 2004; Willis, 2006), there is evidence that the medical profession still exerts significant influence and authority (Germov, 2005; Nugus et al., 2010; Schofield, 2009) and that “the traditional ‘health care hierarchy’ remains intact with medicine occupying the dominant position in terms of social, economic and political advantage” (Reeves, 2011b, p. 9). This medical dominance and consequent differential treatment of medical versus non-medical clinicians has manifested itself at the workplace level in various ways: in formal and informal communication (Long et al., 2006; Nugus et al., 2010; Reeves et al., 2009); in terms of ‘waiting hierarchies’ and budgetary valuations (Long et al., 2006; Schofield et al., 2009) and with regard to the recognition of specialist expertise (Nancarrow & Borthwick, 2005) and in the autonomy and authority afforded doctors over others (Bourgeault & Mulvale, 2006; Boyce, 2006; Germov, 2005; Long et al., 2006; Nugus et al., 2010; Schofield, 2009).

The medical voice can be dominant even where the doctor has recognised its impact and there has been a concerted effort to overcome entrenched ways of operating. In an ethnographic study by Long et al. (2006), the medical specialist who instigated the interprofessional team was unintentionally dominant during team meetings, procedures and case conferences. In contrast, informal corridor discussion was more evenly distributed between the various practitioners (Long et al., 2006). In another study, physicians related to other health professions in a terse, unidirectional manner, whereas the exchanges within their own profession were richer, of longer duration and included social content (Reeves et al., 2009). Communication during case conferences in a study of acute settings was primarily dominated by doctors, followed by nursing staff whereas other clinicians only spoke when invited to do so (Nugus et al., 2010).

Medical time has been revealed to be more valued than the time of nursing and allied health staff, regardless of workload levels (Long et al., 2006; Schofield, 2009). This differential treatment of the value of each clinician's time is clearly described below:

In clinic, there were distinct waiting hierarchies: surgical waits for no-one, medical waits for surgical, but not for allied health or nursing, physiotherapist and occupational therapist wait for medical and surgical, but not for nursing, social work, peer support or dietician. Nursing waits for surgical, medical, physiotherapist and occupational therapist and occasionally for social work and dietician, but not for peer support. Social work, dietician and peer support most frequently do their work when everyone else is finished, or when the team are waiting for people further up the hierarchy to arrive. (Long et al., 2006, p. 513)

This differential valuation of time was also formally recognised in the manner that the clinicians' time was accounted for in hospital budgets (Long et al., 2006). Similar structural issues are reflected in specialisation and associated recognition. Specialisation in medicine has traditionally been associated with greater professional autonomy, higher levels of compensation and greater prestige and security. In contrast, such benefits are typically not conferred on specialists in other health related disciplines (Nancarrow & Borthwick, 2005).

Although organisational reforms in health care have reduced the medical control of management structures, clinical decision making is still dominated by medical practitioners (Boyce, 2006; Schofield, 2009). Furthermore, medical dominance has been structurally embedded within public funding and institutional arrangements of health services in a number of countries, where significant medical supervision of collaborative care has been often required (Bourgeault & Mulvale, 2006). Hence, it is not surprising that the nursing and allied health professions have struggled to achieve similar levels of autonomy or power as medicine (Germov, 2005). Within acute settings, doctors have been found to be the key decision makers regarding a patient's care and pathway through the health service and are more likely to circumscribe the work of allied health practitioners; within community settings collaborative decision making involving a range of clinicians is more likely to occur (Nugus et al., 2010). Even where the medical team leader has been committed to democratic decision making within an interprofessional team in a hospital setting, other clinicians continue to view the doctor as a team leader and actively resisted devolvement of leadership (Long et al., 2006). Consequently, Long, Lee and Braithwaite (2008) conclude that moving beyond medical dominance and shifting professional identities to engender a more clinically democratic

arrangement in the context of “deeply enculturated beliefs, values and behaviours” is problematic (Long et al., 2008, p. 252).

The various forms of differential treatment outlined above can engender professional identity conflict particularly amongst the non-medical health professions. Nonetheless, the medical profession has direct legal accountability for patients under their care (Long et al., 2006; Nugus et al., 2010) and this confounds IPP. From the perspective of doctors, interprofessional working and shared decision making is understandably threatening when they have the ultimate responsibility for patient care. (Braithwaite & Westbrook, 2005; Nugus et al., 2010) If the decisions of interprofessional teams are not subject to the same legal scrutiny as individual doctors, then the medical profession will be justifiably reluctant to share power (Chesters & Burley, 2011) and this could kindle professional identity threat amongst doctors.

Medical dominance underscores much of the potential professional identity conflict triggered by differential treatment of the health professions. Our analysis highlights that professional identity faultlines have the potential to be activated within interprofessional teams given the various ways that differential treatment occurs: muting of non-medical voices, little or no recognition of non-medical specialisation, the lower value given to non-medical time, the greater autonomy and authority granted to medical practitioners and the ultimate legal responsibility for patient care placed on doctors. Thus, differential treatment has the potential to make professional identity salient and a team could subsequently split along professional identity faultlines.

Different Values

This category of triggers occurs when social identity groups have conflicting beliefs or values. Within interprofessional teams this is particularly relevant given the divergent education and socialisation processes experienced by the different health practitioners. The values, beliefs, attitudes, customs and behaviours of each practitioner group are passed on via the process of professional socialisation and are responsible for stifling job design evolution, reinforcing professional boundaries and discouraging interprofessional working and the development of new models of care (Australian Government Productivity Commission, 2005; Hall, 2005; Reeves, Lewin, et al., 2010). Professional socialisation is both an individual's acquisition of knowledge and skills as well as an enculturation process during which norms, values, roles, patterns of language and attitudes are internalised to construct a professional identity (Ajjawi & Higgs, 2008; Clark, 1997; Sharpe & Curran, 2011). Socialisation occurs during interactions with lecturers, tutors, clinical supervisors and with other clinicians during professional practice (Richardson, 1999; Sharpe & Curran, 2011). As a result of this process, each health occupation develops its own world-view and thus its own view of the patient and what constitutes health and successful treatment (Clark, 1997; Mackay et al., 1995; Pecukonis et al., 2008; Sharpe & Curran, 2011). Professional socialisation creates fundamentally different approaches to problem solving by different professions. For example, medical schools tend to focus more on the reductionist/scientific approach over the humanistic; nursing is characterised by a more humanistic, holistic orientation whereas the training of social workers focuses on feelings and relationships that take account of the psychosocial and economic dimensions of illness (Clark, 1997). It has been suggested that the socialisation process and the internalisation of professional values blurs the distinction between professional identity and personal identity for some

health professionals (Clark, 2011), thus reinforcing the potential for social categorisation of other health practitioners to occur. Different world-views of the professions and a lack of common understanding of values presents a potential barrier to interprofessional communication (Hall, 2005).

The problematic effect of different socialisation processes and values in IPP are well documented: subordination of the values of non-medical practitioners (Atwal & Caldwell, 2005; Miller et al., 2008); differences in approaches to care and treatment (Clark, 1995); and disagreements regarding the translation of evidence based practice (Ferlie et al., 2005). Nursing staff, in accepting the values associated with the medical model, are found to withhold information regarding the social aspects of care during multidisciplinary team meetings (Atwal & Caldwell, 2005). Similarly, interprofessional teams may fail to acknowledge the importance of caring as a core value of the nursing profession without which nurses consider patient care to be compromised (Miller et al., 2008). In another example, a review of empirical research in geriatric care demonstrated that nursing staff are more interested in issues of care compared to physicians who consider treatment to be more important and can become disinterested if a cure cannot be achieved (Clark, 1995).

Strong social and cognitive boundaries between and within health professions have been found to impede the flow of knowledge and the translation of evidence-based practice within the workplace (Ferlie et al., 2005). Cognitive boundaries are reinforced by different epistemologies, research cultures and agendas within interprofessional teams. For example, acute care doctors are more wedded to the randomised clinical trial (RCT) paradigm whereas primary care doctors adopt a more holistic approach to research evidence as they often treat patients with multiple pathologies and this limits the relevance of RCT evidence. The research of nursing and allied health professions tends

to adopt a sociological line of enquiry, utilise qualitative methods and concern both service delivery and clinical outcomes. Thus, "...evidence or knowledge underpinning the innovations did not readily flow across the professions: rather, it 'stuck'" (Ferlie et al., 2005, p. 130). Hence these cognitive boundaries can frustrate the implementation of new or joint work practices within teams and in turn activate faultlines.

Members of interprofessional teams have different expectations of team membership and processes based on their professional socialisation and concomitant values. There is evidence to suggest that both doctors and nurses view teamwork as beneficial, yet their value systems mean that their understanding of team work is different. For example, physicians view nurses more as assistants than colleagues and as an extension of their own role within the team whereas nurses view the team process as more collegial (Cott, 1998). Moreover, few health professionals are sufficiently knowledgeable about other professions' scopes of practice, skills and expertise despite an understanding of other professions being one of the first steps in collaborative practice. This lack of interprofessional knowledge stems from socialisation processes and lack of collaboration during the educational process which can result in the development of negative stereotyping and naïve perceptions of other health professionals at the workplace (Sharpe & Curran, 2011).

The differing processes of professional socialisation within the healthcare occupations mean that there are divergent values and thus interpretations of what constitutes appropriate patient care and treatment, what is sound research evidence for translation into practice and the roles and processes in teamwork. Such divergent views present potential faultlines particularly when teams are dealing with such a fundamental issue as patient treatment and care. Similarly, varying opinions as to the nature of the roles within the team is a potential source of conflict.

Assimilation, and Insult or Humiliating Action

The third and fourth triggers have been combined under one heading as both are closely related to changing roles and scopes of practice within healthcare. The blurring of professional roles associated with health reform and interprofessional working can threaten professional identity if it is interpreted as an intolerance of professional differences or a requirement to blend into the dominant culture ('assimilation'). In a similar fashion, overlapping roles or the advent of new or 'generic' roles can be construed as devaluing the traditional health professions ('insult or humiliating action') particularly if the new or 'generic' roles are seen to encroach on existing roles and scopes of practice.

Significant reforms have meant that health roles and scopes of practice have become more fluid and the boundaries between the professions more flexible (Willis, 2006). Given the fact that the health care professions have struggled to define their jurisdictional domains (Hall, 2005), such health care reforms, particularly in the context of IPP, seek to blur professional boundaries and can provoke professional identity threat (Brown et al., 2000; Cameron, 2011). Whilst some clinicians have viewed the overlapping roles associated with interprofessional care as a positive initiative (Booth & Hewison, 2002; Nancarrow, 2004a), others have found the experience challenging. For example, unclear role boundaries and overlapping areas of practice cause ambiguity and tension (Scholes & Vaughan, 2002); create confusion over lines of accountability and responsibility (Brown et al., 2000); and pose a risk to professional identity particularly for newly qualified practitioners (Nancarrow, 2004b). Some limited role overlap has been identified acceptable beyond which territoriality and threats to professional identity and security come into play (Booth & Hewison, 2002). Moreover, in research within the National Health Service in the United Kingdom sharing of skills and tasks

between professions has been viewed as having a detrimental effect on autonomy (Leverment, Ackers, & Preston, 1998). An earlier study found that when nursing and social work roles overlap, patients view the roles as interchangeable and there is a resultant territoriality which leads to ineffective collaboration, duplication of effort and conflict (Lowe & Herranen, 1978).

Blurring of professional roles is seen as a first step in the development of multi-skilled, generic health workers who are able to undertake a variety of tasks at lesser cost. For example, in acute care in the UK, it has been proposed that a multi-skilled health worker could cover a range of duties including nursing, prescribing, some allied health roles and making decisions to admit and discharge patients (Duckett, 2005). Proposals for a more 'generic' healthcare worker educated in a range of allied health competencies including physiotherapy, occupational therapy and nursing (Brooks, 2003) has been viewed as potentially threatening to a range of professionals and raised concerns over the security of the individual professions (Booth & Hewison, 2002). Commentators have highlighted that such 'generic health' workers working across a range of health occupations will be at a disadvantage as they will have no particular professional identity or affiliation (Bainbridge & Purkis, 2011).

Medical and allied health skills shortages in rural and remote areas have been the driver for the development of new health occupations as well as the trigger for professional identity threat. For example, the tight labour market for medical practitioners has provided an impetus for the development of the role of Nurse Practitioner, the trialling of the roles of Physician's Assistant and Perioperative Nurse Surgeon's Assistant and the examination of the broadening of the role of the paramedic in Queensland (Australian Government Productivity Commission, 2005). In particular the Nurse Practitioner (NP) is a specialised role which enables nurses to exercise broader clinical

powers including the ability to prescribe certain medications, order diagnostic tests and refer clients to other health practitioners (Germov, 2005). It has been suggested that the significant medical opposition to independent NP's appears to be borne out of fear of encroachment on their traditional boundaries of practice, their traditional power base and a threat to their source of income (Appel & Malcolm, 2002; Turner et al., 2007). Such tensions and concerns about the devaluation of both medicine and independent NPs are likely to impede the ability of these clinicians to collaborate within interprofessional teams.

Interprofessional working has been defined as “a willingness to share and indeed to give up exclusive claims to specialized knowledge and authority if other professional groups can meet patient/client needs more efficiently and appropriately” (Masterson, 2002, p. 333). Such a definition reinforces the blurring of professional divisions and that clinicians are undertaking tasks previously within the domain of other professions (Masterson, 2002). Studies have highlighted that unclear role boundaries and overlapping areas of practice have resulted in confusion, tension and territoriality prompting threats to professional identity and potential conflict. Clinicians have also expressed concern that role blurring is a step towards ‘generic health worker’ often advocated in government policy (Cameron, 2011). As discussed earlier, new health occupations are also encroaching on the domains of the established health care professions. The medical profession’s strident response to the introduction of independent NPs is a powerful example of one profession’s resistance to encroachment on its scope of practice and how threats to the professional identities of both doctors and nurses could generate conflict within interprofessional teams.

Simple Contact

This trigger can occur when identity groups have been involved in an event within the broader societal context and thus mere contact with other social identity groups within the workplace activates a feeling of threat. In Chrobot-Mason et al.'s (2009) studies, this trigger occurred in only few cases and typically when there was a high level of intergroup anxiety. A recent study discovered a simple contact faultline that was activated when a rural hospital was undergoing major organisational change (Gover & Duxbury, 2012). In this case the conflict occurred between the management group whose members typically were new to the local area and the mostly local clinician group (comprising both physicians and nurses). Although a comprehensive review of the literature did not yield any direct empirical evidence of simple contact faultlines existing between the health professions in teams, there is certainly the potential for this to occur. For instance, intergroup anxiety fuelled by tensions between professional associations (for example, the AMA's strong resistance to independent NP's (Australian Medical Association (AMA), 2005a, 2005b; Harvey, 2011)) could also fuel conflict between individual practitioners within interprofessional groups. Although this is likely to only occur in a few instances given the results of Chrobot-Mason et al. (2009) research, it is worthy of further investigation in an organisational setting.

Implications for Interprofessional Practice

Although our analysis concentrates on the triggers to professional identity conflict and their relevance to interprofessional health teams, the inherent diversity within these teams is not an automatic recipe for failure. As explicated in the categorisation-elaboration model (van Knippenberg et al., 2004), professional diversity can potentially lead to both positive and negative outcomes under different circumstances (Mitchell et al., 2011). There is evidence that interprofessional teams

have access to a broader range of knowledge and skills (Canadian Health Services Research Foundation (CHSRF), 2007) and are able to generate more innovative solutions to problems than teams comprising a single profession (Fay, Borrill, Amir, Haward, & West, 2006). These benefits from interprofessional working are able to be facilitated if the negative effects of social categorisation processes can be managed (Brodbeck, Guillaume, & Lee, 2011).

Various strategies to overcome the damaging consequences of social categorisation have been advocated. A team identity helps to moderate the effects of strong faultlines within the group by reducing the salience of subgroup social categorisation and thus the likelihood that teams will divide into conflicting subgroups (Jehn & Bezrukova, 2010). Emphasising superordinate team goals can further relieve intergroup tensions, provided that the individual social or professional identities are respected and preserved (Callan et al., 2007; Hornsey & Hogg, 2000b; Lau & Murnighan, 1998; Mitchell et al., 2011). Diverse groups working towards a common goal as well as working on interdependent tasks that necessitate the acquisition of new knowledge also alleviates social identity threat (van Dick, van Knippenberg, Hägele, Guillaume, & Brodbeck, 2008). Facilitation of team leader reflexivity can challenge norms of medical dominance and differential treatment of medical and non-medical practitioners and so minimise identity threats (Long et al., 2006). However, this requires team leaders, often members of the dominant professional group, to be aware of the social or professional identity threat triggers that provoke conflict (Chrobot-Mason et al., 2009). Moreover, transformational leadership has been shown to play a positive role in improving the performance of diverse teams via elaboration of task-relevant information and promoting a collective identity (Kearney & Gebert, 2009).

Building on their earlier research, Ernst and Chrobot-Mason (2011) identify six 'boundary spanning practices' that leaders can utilise to overcome social identity boundaries within organisations. However, Ernst and Chrobot-Mason's (2011) recent survey data highlights the importance of 'boundary spanning practices' in managing diverse teams: whilst 86 per cent of senior executives believe that managing across social identity boundaries is critical, only 7 per cent believe that they are effective at doing so. Given our earlier discussion on professional identity boundaries and faultlines, this reinforces the critical nature of leadership practices in managing interprofessional teams in health care.

Conclusion

IPP implies a willingness to share knowledge and decision making and to defer to another profession should it be in the best interests of patient care (Owens, Carrier, & Horder, 1995). Despite the inherent logic in interprofessional working, the reality is fraught with obstacles. Much of the literature on interprofessional teams identifies that the key barrier to team functioning lies in the nature of the health care professions: among them medical dominance, lack of respect between the professions and professional stereotyping (Cashman, Reidy, Cody, & Lemay, 2004; McCallin, 2001; Mickan & Rodger, 2005; Sargeant, Loney, & Murphy, 2008; Xyrichis & Lowton, 2008). We have demonstrated how these barriers relate to the overarching theme of professional identity.

We have analysed and categorised the literature on IPP in an innovative way by extending Chrobot-Mason et al.'s (2009) typology of triggers of social identity conflicts to the sphere of health care and interprofessional teams. Our adaptation of Chrobot-Mason et al.'s work in the context of professional identity threat provides

important clues as to why the potential benefits of IPP can be overshadowed by conflict between the different health professions within a team. The analysis describes how professional identity faultlines have the potential to be activated and conflict induced when there are inequities in how the different professions are treated within the team; when there are divergent values and thus interpretations of appropriate patient treatment and care; when there is confusion and tension regarding overlapping and new roles within the team and even possibly by virtue of simple contact between the various professions within the team. This has implications for the management and training of interprofessional healthcare teams and provides insights for team leaders and health managers. Our analysis of the IPP literature further highlights the need to empirically investigate the barriers and enablers to interprofessional team success, the triggers of professional identity conflicts and the leadership strategies that are able to bridge professional identity faultlines.

To date, there has been no other comprehensive analysis of each of the five triggers in the Chrobot-Mason et al. (2009) typology. Although other authors have referred to the study (Carton & Cummings, 2012; Ernst & Chrobot-Mason, 2011; Fairhurst, 2009; Gover & Duxbury, 2012; Kaczmarek, Kimino, & Pye, 2012; Mitchell et al., 2011; Nishii & Mayer, 2009; Nkomo & Kriek, 2011; Rico, Sanchez-Manzanares, Antino, & Lau, 2012; Thatcher & Patel, 2011; Tukiainen, 2012 ; van der Kamp, Tjemkes, & Jehn, 2012; Vora & Markóczy, 2011; Yip, Twohill, Ernst, & Munusamy, 2010), only one of these (Gover & Duxbury, 2012) has examined a single trigger of identity conflict (simple contact) in their qualitative work.

Our analysis of the Chrobot-Mason et al. (2009) typology is intended to provide an initial investigation of its potential applicability in professionally-diverse teams. The current exploration suggests that professional identity threat is likely to be triggered by

both organisational and professional antecedents. Health care organisations precipitate perceptions of inequity, which has been linked to professional identity threat, through professionally-based variation in compensation and autonomy. Within health care systems, professions contribute to interprofessional tension through, for example, divergent professional values. Our analysis therefore provides a sound platform for future research in professional identity threat. In addition to the investigation of specific triggers, for example, exploration of the role of perceived differences in compensation, autonomy and authority in engendering threat, we suggest that comparative analysis will provide health care leaders and educators with valuable information regarding the most significant barriers to interprofessional collaboration. Within this analysis, the role of moderating variables, such as location (for example, rural versus metropolitan) and context (for example, primary versus acute care) will further our understanding of the circumstances under which different triggers generate stronger or weaker effects. There is also merit in investigating the strategies that are capable of mitigating against each of the triggers that we have identified. For example, past research points to the value of inclusive leadership in reducing the effects of perceived status differences, however its role in identity threat remains unexplored (Nembhard, Alexander, Hoff, & Ramanujam, 2009; Nembhard & Edmondson, 2006). Similarly, transformational leadership has been shown to reduce the perception of differences and associated conflict in diverse teams (Mitchell, Parker, & Giles, 2012), which suggests its potential in the support of interprofessional interaction. It is also suggested that future study investigate the extent to which some triggers engender stronger faultlines and are more difficult to manage than others (Thatcher & Patel, 2011). For example, differential treatment of the healthcare professions stems, in part, from broader organisational and societal norms and thus will be particularly difficult for team leaders to overcome; whereas triggers

based on different values could be managed by inclusive leadership, for example, through a focus on patient-centredness (Nembhard & Edmondson, 2006; Thatcher & Patel, 2011). With these priorities in mind, it is likely that future empirical investigation of threats to professional identity will help unravel the puzzle of contradictory outcomes in interprofessional practice in health care organisations.

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Table 1 - Triggers of Social Identity Conflict

<p>Differential Treatment</p> <p>Group polarisation can occur when groups receive unequal opportunities in the workplace or receive unequal treatment. The dominant and non-dominant group members may see the treatment differently with the dominant group members perceiving differences in treatment as a demonstration of loyalty and non-dominant groups perceiving it as favouritism. The treatment may have to do with distribution of resources such as promotions, pay, opportunities or praise or disciplinary actions.</p>
<p>Different Values</p> <p>Decidedly different beliefs or values can trigger a social identity conflict. There is a clash of fundamental beliefs regarding what is right and wrong or normal and abnormal. The values may be religious, moral or political. Values can also trigger a conflict when a particular job responsibility may violate deeply held values or beliefs.</p>
<p>Assimilation</p> <p>These triggers occur when the majority group expects that others will act just like them. It represents an intolerance of cultural, religious, or gender differences. There is an expectation on the part of the dominant groups that the non-dominant groups will assimilate and blend into the dominant culture.</p>
<p>Insult or Humiliating Action</p> <p>Comments or behaviours that devalue one group relative to another. An offensive comment, insult, slur, or humiliation of someone from another identity group can make identity highly salient. The insultee clearly feels hurt by the incident. Others take sides.</p>
<p>Simple Contact</p> <p>When intergroup anxiety is high, simple contact between these groups can be polarizing. Simply bringing these group members together can trigger polarisation and conflict.</p>

(Chrobot-Mason et al., 2009, pp. 1775-1777, 1784)

Table 2 - Triggers of Professional Identity Conflict

Differential Treatment

Professional polarisation can occur when the professions/occupations receive unequal opportunities in the workplace or receive unequal treatment. The dominant and non-dominant professions may see the treatment differently with the dominant profession members perceiving differences in treatment as a demonstration of loyalty and non-dominant professions perceiving it as favouritism. The treatment may have to do with distribution of resources such as promotions, pay, opportunities or praise or disciplinary actions.

Examples: (1) Medical time was more valued than the time of nursing and allied health staff, regardless of workload levels (Long et al., 2006; Schofield, 2009). This differential valuation of time was also formally recognised in the manner that the clinicians' time was accounted for in hospital budgets (Long et al., 2006). (2) Specialisation in medicine has traditionally been associated with greater professional autonomy, higher levels of compensation and greater prestige and security. In contrast, such benefits are typically not conferred on specialists in other health related disciplines and historically systems for recognising specialist expertise in nursing and allied health have been less formal or absent (Nancarrow & Borthwick, 2005)

Different Values

Decidedly different beliefs or values can trigger a professional identity conflict. There is a clash of fundamental beliefs regarding what is right and wrong or normal and abnormal determined by the values or mindset held by particular professions. Values can also trigger a conflict when a particular job responsibility may violate deeply held values or beliefs.

Examples: (1) Strong social and cognitive boundaries (based on divergent research paradigms) between and within health professions were found to impede the flow of knowledge and the translation of evidence-based practice within interprofessional teams (Ferlie et al., 2005). (2) In geriatric care, physicians and nurses have divergent views about how the quality of life is defined (Clark, 1995)

Assimilation

These triggers occur when the dominant profession expects that others will act just like them and represents an intolerance of professional differences. There is an expectation on the part of the dominant profession that the non-dominant professions or occupations will assimilate and blend into the dominant culture.

Example: (1)The Australian Medical Association has strongly argued against the

introduction of independent Nurse Practitioners (Australian Medical Association (AMA), 2005a, 2005b) based on the premise that “nurses do not substitute for general practitioners”, that this move would offer less than the best possible care and that short term replacement of doctors with health practitioners with different skill sets and training would neither be safe or sensible (Australian Medical Association (AMA), 2005a).

Insult or Humiliating Action

Comments or behaviours that devalue one profession relative to another. An offensive comment, insult, slur, or humiliation of someone from another professional group can make professional identity highly salient.

Simple Contact

When interprofessional anxiety is high, simple contact between these professions can be polarizing. Simply bringing these professions together can trigger polarisation and conflict.

Example: (1) A simple contact faultline was activated when a rural hospital was undergoing major organisational change (Gover & Duxbury, 2012). In this case the conflict occurred between the management group whose members typically were new to the local area and the mostly local clinician group (comprising both physicians and nurses). Examples of conflict arising from simple contact between the health professions were not found in the literature.

Adapted from (Chrobot-Mason et al., 2009, p. 1775)

7.3 Paper 2: Research Protocol

Full Citation:

Mitchell, R., Paliadelis, P., McNeil, K., Parker, V., Giles, M., Higgins, I., Parmenter, G. & Ahrens, Yvonne. (2013). Effective interprofessional collaboration in rural contexts: a research protocol. *Journal of Advanced Nursing*, 69(10), 2317-2326. doi: 10.1111/jan.12083

7.3.1 Statement of Contribution of Others

A copy of the relevant signed statement appears on the following two unnumbered pages.

Statement of Contribution of Others

We, **Rebecca Mitchell, Penelope Paliadelis, Vicki Parker, Michelle Giles, Isabel Higgins, Glenda Parmenter, Yvonne Ahrens** and **Karen McNeil** attest that the PhD candidate, **Karen McNeil**, contributed to the publication entitled:

Mitchell, R., Paliadelis, P., McNeil, K., Parker, V., Giles, M., Higgins, I., Parmenter, G. & Ahrens, Yvonne. (2013). Effective interprofessional collaboration in rural contexts: a research protocol. *Journal of Advanced Nursing*, 69(10), 2317-2326. doi: 10.1111/jan.12083 (Also known as Paper 2).

in the following way:

- a major role in the development and refinement of the research project's design and method
- a major role in the overall conception of the paper
- considerable input into the contents of the paper; with
- a supporting role in the drafting and final revision



Rebecca Mitchell (Co-Author)

Date: 4 August 2014



Penelope Paliadelis (Co-Author)

Date: 4 August 2014



Vicki Parker (Co-Author)

Date: 14 August 2014



Michelle Giles (Co-Author)

Date: 11 August 2014



Isabel Higgins (Co-Author)

Date: 4 August 2014



Glenda Parmenter (Co-Author)

Date: 1 September 2014



Yvonne Ahrens (Co-Author)

Date: 5 August 2014



Karen Anne McNeil (Candidate)

Date: 1 September 2014



Frank Agbola (Acting Assistant Dean Research Training (Faculty of Business and Law))

Date: 02/09/2014

7.3.2 Introduction

This paper describes an original research protocol which aims to identify the factors that facilitate and constrain interprofessional working in a rural context. While IPP has been identified as an important strategy to overcoming some of the resource challenges in rural health care (Australian Government Productivity Commission, 2005; McNair, 2005), IPP remains relatively underexplored in Australian rural settings (Blue & Fitzgerald, 2002). The principle aim of the study is to investigate IPP in a rural setting in Australia. The research framework is informed by two analytical models: the input-processes/mediator-output (IMO) model (Ilgen et al., 2005), and the theory of realistic evaluation (Pawson & Tilley, 1997). Both these models are designed to facilitate examination of the inputs, underlying mechanisms and outcomes of teamwork. The protocol also includes a novel sampling model, which seeks to overcome identified data collection challenges in rural settings (Cudney et al., 2004; Lim et al., 2011). Data collection methods include interviews with a range of clinicians, managers and policy makers, as well as document analysis and focus groups. It is planned that the analysis of this data will contribute to the development of a model of rural interprofessional practice.

Rural health services face the multiple challenges of workforce limitations, geographic dispersion and higher rates of chronic disease compared to those experienced in urban areas (Bourke, Humphreys, et al., 2010a; Department of Health and Ageing (DHA), 2008; Merwin et al., 2003). IPP interventions in rural areas have been shown to enhance patient care and satisfaction and reduce costs (Blount, 2000; Thornicroft & Tansella, 1999), and have been linked to improved clinician retention and satisfaction (Canadian Health Services Research Foundation (CHSRF), 2007). However, strategies to address rural workforce shortages and the health disadvantages suffered by rural residents have been fragmented, resulting in calls to more thoroughly investigate the rural health care context (Bourke, Humphreys, et al., 2010a).

Undertaking research in rural health services can be problematic. The geographic dispersion of clinicians, workforce shortages, and the consequent emergence of informal and dynamic models of collaboration (Brems et al., 2006; Buckingham et al., 2006), can make it difficult to unearth the mechanisms of IPP (Mitchell, Paliadelis, et al., 2013), while workforce pressures can present a disincentive for clinicians to participate in

research projects (Asch et al., 2000; Foster et al., 2010). Hence, our original research design facilitates the investigation of how IPP is achieved, and the explanatory mechanisms and processes underlying interprofessional effectiveness. In addition, the sampling framework is designed to include perspectives on rural IPP from range of clinicians, managers and policy makers from various settings.

The theoretical framework for the project's research design is informed by the input-processes/mediator-output (IMO) model (Ilgen et al., 2005) and the theory of realistic evaluation (Pawson & Tilley, 1997), which have been discussed in detailed in Section 6.2.4.3 (Models of Team Dynamics and Effectiveness). Both models view teams as open, dynamic and complex social systems (McGrath et al., 2000). Briefly, the IMO model considers the inputs, explanatory mechanisms and the outcomes of teams. Explanatory mechanisms can be affective, behavioural and/or cognitive, and include those which emerge as the team matures (Ilgen et al., 2005). Other reviews and empirical studies of IPP have employed similar frameworks (Jaca et al., 2013; Lemieux-Charles & McGuire, 2006; Reeves et al., 2007). The research framework also draws on the theory of realistic evaluation, which incorporates contexts, mechanisms and outputs in what is commonly known as the CMO model. This model poses questions of why an intervention works, for whom, and in what circumstances (Pawson & Tilley, 1997). Employing these frameworks yields a research design which facilitates investigation of the team, organisational and environmental contexts, together with the processes and mechanisms that support or constrain rural IPP.

The research design incorporates interviews with policy-makers, managers and clinicians to identify the relationships between various contextual factors, IPP mechanisms and outcomes. Additional data from the focus groups was planned to assess the CMO output. A review of the extant literature has been used to identify factors related to IPP and this formed the basis of the interview questions. Contextual factors identified included the policy and institutional environment as well as professional norms; and mechanisms included leadership, team dynamics and role clarity.

Participants were drawn from a health district located in the lower mid-north coast and inland areas of New South Wales (NSW), an area experiencing shortages of health professionals (Department of Health and Ageing (DHA), 2008). The sampling framework aimed to include participants from various settings, functions, locations and

health professions. This recognises that models of IPP can vary across settings (Leathard, 2003b); that policy makers, managers and clinicians each impact on the effectiveness of IPP (Nugus et al., 2010); and that integrating care across different locations is essential in delivering care for those with chronic conditions (Laurence et al., 2004; McDonald et al., 2012). In addition, the inclusion of a range of professions acknowledges the key role that professional cultures, norms and identity play in interprofessional work (Hall, 2005; McNeil et al., 2013).

Data was collected through semi-structured interviews and focus groups comprising both structured and non-structured components (Cavana et al., 2001). Content and thematic analysis guided by the IMO and CMO framework was used to identify factors that influence interprofessional effectiveness. Independent coding assured the trustworthiness of the data, while triangulation was planned to be used between the documentary material and the interviews and across the various informants working within and outside the team. The study was approved by the Hunter New England Human Ethics Committee (August 2010).

Although the IPP literature is extensive (Reeves et al., 2007), research examining effective IPP in rural contexts in Australia is limited (Goss et al., 2010; Gregory, Armstrong, & Van Der Weyden, 2006; Laurence et al., 2004). To our knowledge, this study is one of the first to investigate the barriers to, and enablers of, rural IPP, which is significant given the continuing health care challenges experienced in rural communities globally. The unique characteristics of the Australian health care system also reinforces the value of this research (Australian Institute of Health and Welfare (AIHW), 2010). Unravelling the factors that constrain or enable effective IPP should inform improvements in rural health care policy and practice.

This paper contributes to the overall thesis by highlighting the significance of context in IPP through its examination of the distinctive features of IPP in the Australian rural health care context. It also reinforces the importance of professional identity and cultures in interprofessional work through the exploration of role clarity, professional boundaries, the norms and policies of professional organisations and IPE and training. The results of this research protocol were published in *Paper 3: Rural IPP* and *Paper 4: Workforce Shortages*. Each of these empirical papers underscores how rural context can both facilitate and constrain effective IPP, that IPP in this context is complex, and that

professional boundaries and entrenched hierarchies continue to play a critical role in the implementation of IPP. Hence, these studies make an important contribution to the literature and advance our understanding of the interplay between professional identity and context in IPP.

7.3.3 Publication

RUNNING HEAD: Rural Interprofessional Collaboration

Effective Interprofessional Collaboration in Rural Contexts: A Research Protocol

Abstract

Aim: This paper describes the research protocol that will be used to investigate factors contributing to effective interprofessional practice in a rural context in Australia.

Background: Interprofessional practice is a key strategy for overcoming rural health challenges, however, our knowledge of interprofessional initiatives and consequences in rural areas is limited.

Design: A modified realistic evaluation approach will be used to explore the structures, systems and social processes contributing to effective interprofessional outcomes. This ‘context – mechanism – outcome’ approach provides a useful framework for identifying why and how interprofessional practice works in rural contexts.

Method: Initial propositions regarding the factors that explain effective collaborative practice will be generated through interviews with lead clinicians, policy makers and clinician managers. Clinician interviews, document analysis and multi-participant focus groups will be used as evidence to support, refine or redevelop the initial propositions. This will allow the development of a model of rural interprofessional practice that will explain how and why collaborative approaches work in rural environments. This study is funded by an Institute of Rural Clinical Services and Teaching grant (January, 2010).

Discussion: Rural healthcare challenges are well documented, however studies investigating the nature of interprofessional practice in rural contexts are not common. Rural contexts also present research design, particularly data collection, challenges. This proposed research is the one of the first to identify the factors that facilitate or constrain effective interprofessional work in rural settings. This is particularly important given the continuing workforce shortages and maldistribution and poorer health outcomes in rural communities globally.

What is already known about this topic.

- Interprofessional practice is a key strategy for overcoming rural health challenges, however, our knowledge of interprofessional initiatives and consequences in rural and regional areas is limited.
- Rural healthcare challenges are well documented and rural contexts also present research design, particularly data collection, challenges.

What this paper adds.

- This paper presents a research protocol using a modified realistic evaluation approach incorporating a ‘context – mechanism – outcome’ framework to explore the structures, systems and social processes contributing to successful interprofessional collaboration in rural settings.
- The protocol includes a novel sampling model, which aims to ensure the inclusion of relevant rural clinician participants by sampling across four participant characteristics: setting, function, location and profession.

Implications for practice and/or policy

- This project will enable the development of a model of rural interprofessional practice that will identify key characteristics and explain how and why collaborative approaches work in rural environments.
- Understanding the factors that enable or constrain effective interprofessional work should directly inform rural healthcare practice and related policy.

Keywords: nurses, midwives, nursing, interprofessional, rural healthcare, rural nursing.

INTRODUCTION

Interprofessional practice is often proposed as a strategy for overcoming rural health care challenges, however elements of rural health care and communities differentiate these contexts from metropolitan areas and can place significant additional constraints and requirements on rural interprofessional practice. Rural contexts also increase the challenges associated with undertaking research, for example, by increasing the opacity of mechanisms due to dispersed collaboration. The research design presented in this protocol aims to both reveal the way interprofessional practice occurs in rural areas and enable the investigation of explanatory pathways contributing to interprofessional effectiveness.

Background

Interprofessional teams involve individuals from different professions working together to provide integrated and complementary services and engage in comprehensive and informed decision-making (Canadian Collaborative Mental Health Initiative (CCMHI), 2006). Evidence suggests that interprofessional teams provide a more clinically effective service, generate better health outcomes, are more patient-focused and innovative (Canadian Health Services Research Foundation (CHSRF), 2007; Leathard, 2003a). In particular, interprofessional practice has been suggested in the literature as a key strategy for overcoming rural health challenges and providing effective and efficient health care in rural areas (Australian Government Productivity Commission, 2005; McNair, 2005). However, features of rural healthcare, such as distance, workforce shortages and service centralization may provide additional barriers to effective interprofessional practice in rural areas (Australian Institute of Health and Welfare (AIHW), 2008) and our knowledge of interprofessional initiatives and consequences in rural and regional areas is both limited and fragmented (Blue &

Fitzgerald, 2002). The aim of the present study is to investigate interprofessional practice in a rural context in Australia.

Rural contexts provide significant healthcare challenges. For example, 20% of the USA population reside in rural communities, but only 9% of physicians practice there (Van Dis, 2002). Similar patterns are evident internationally, for example, Australia's rural population represent 35% of its total population with a major health workforce shortage and associated poor access to healthcare services (Bourke, Humphreys, et al., 2010a). General practice (GP) services per head in the US fall sharply in rural areas and rural areas typically reflect less than 10% of specialist practices (Judd & Humphreys, 2001). Similarly, in Australia the numbers of GPs per head of population is disproportionately low in rural areas and there is a relatively low to poor supply of other health professionals compared to urban areas (Department of Health and Ageing (DHA), 2008). This uneven distribution has far-reaching implications because rural areas have higher percentages of people in poverty, elderly people, people lacking health insurance coverage and people with chronic diseases (Australian Institute of Health and Welfare (AIHW), 2010; Merwin, Snyder, & Katz, 2006; Van Dis, 2002). Rural adults are more than 35% more likely to report only fair or poor health than their metropolitan counterparts (Merwin et al., 2006).

Interprofessional approaches have been identified as a key mechanism for overcoming workforce shortages and maldistribution (Goss et al., 2010; McNair, 2005) and integrated interprofessional service provision in rural areas has been found to improve patient care, satisfaction with care, cost-effectiveness and provider learning (Blount, 2000; Thornicroft & Tansella, 1999). Interprofessional work has also been linked to increased job satisfaction and staff retention in rural areas (Canadian Health Services Research Foundation (CHSRF), 2007). Over recent decades some initiatives

have been introduced with the aim of improving the health of those living in rural and remote areas and avert the growing shortages of healthcare professionals (Sen Gupta, Muray, McDonell, Murphy, & Underhill, 2008), for example, the establishment of rural clinical schools, University Departments of Rural Health and Specialist Outreach Assistance Programs (Gregory et al., 2006). However, these strategies are often fragmented and there have been calls to rigorously investigate the implications of rural context on healthcare to address continued problems of access, workforce shortage and health disadvantage (Bourke, Humphreys, et al., 2010a).

Features of rural health care and rural communities differentiate rural contexts from their metropolitan counterparts and frequently place significant additional constraints and requirements on rural interprofessional practice (Lea et al., 2008). In particular, rural health environments are characterised by lengthy travel times, centralised services, workforce shortages and maldistribution (Australian Institute of Health and Welfare (AIHW), 2008) and our knowledge of interprofessional initiatives and consequences in rural and regional areas is both limited and fragmented (Blue & Fitzgerald, 2002) and therefore does not provide a succinct evidence base to inform health care planning or management in non-metropolitan areas.

Features of rural environments that prompt research into this area also pose significant study-related challenges. In particular, rural contexts increase the opacity of mechanisms underpinning effective interprofessional practice due to a range of factors including dispersed collaboration and the emergence of informal and dynamic work models to accommodate clinician shortages and maldistribution (Brems et al., 2006; Buckingham et al., 2006). The research design presented in this research protocol is designed to both reveal the way interprofessional practice occurs in rural areas and enable the investigation of explanatory pathways contributing to interprofessional

effectiveness. In addition, because participant recruitment in a rural setting and effectively tapping unique elements of rural contexts have been identified as particularly difficult (Cudney et al., 2004; Lim et al., 2011), our research design incorporates a novel sampling model aiming to ensure the inclusion of relevant rural clinician participants and perspectives on interprofessional practice.

THE STUDY

Aim

The primary aim of this study is to investigate the factors contributing to effective interprofessional practice in rural contexts.

Our objectives are to:

1. Explore approaches to interprofessional practice in health care in the context of rural health care centres.
2. Examine ways interprofessional practice can be instrumental in overcoming challenges identified by clinicians working in rural hospitals and community health settings.
3. Understand the factors that make interprofessional practice in rural contexts successful and effective.

Theoretical Framework

We will use the input-processes/mediator-output (IMO) model (Ilgen et al., 2005) and theory of realistic evaluation to form the theoretical framework for the current interprofessional project (see Supporting Information Figure 1).

The IMO model is useful for the study of complex interprofessional collaborations because it incorporates multiple integrated components. Several similar models have been developed and used as frameworks for empirical study and reviews in interprofessional research (Lemieux-Charles & McGuire, 2006; Reeves et al., 2007).

The use of this theoretical framework is supported current literature in health care environments which identifies several indicative team inputs, processes and outcomes that are particularly relevant to interprofessional teams. For example, research generates evidence supporting a range of leadership strategies that enhance interprofessional team performance (Onyett, 2003; Somech, 2006). Evidence also supports the critical role of mediators such as reflexivity of the relationship between composition and performance (Fay et al., 2006).

To address this study's second and third objectives, we will employ an analytical model typically used to investigate causal relationships, the theory of realistic evaluation (Pawson & Tilley, 1997). Similar to the IMO model, realistic evaluation also effectively frames complex, multicomponent activities in health care (Berwick, 2008). Realistic evaluation was identified as particularly suitable for this study because it explicitly incorporates contextual influences and mechanisms of effect in a CMO: Context - Mechanism – Outcome model (Abad-Corpa et al., 2010). Together, the IMO and CMO provide a research framework focused on policy, organisational and management context in rural environments, participant understanding about mechanisms supporting interprofessional practice in rural contexts and the expected and observed outcomes.

Design

The focus of this study is to understand the processes and mechanisms through which interprofessional practice in rural contexts occurs and the environmental supports or constraints impacting successful interprofessional work. These elements are reflected in our research design, depicted in Figure 2. Initial interviews will be held with participants categorised as policy-makers, clinician managers and lead clinicians (Component 1). The content of these interviews will be analysed to identify

relationships between the rural environmental, institutional and professional context, the mechanisms of interprofessional practice and outcomes. These proposed relationships between context, mechanism and outcome (CMO configurations) will be used to inform interviews with clinicians, which will explore their perceptions relative to the identified contextual and processual issues and refine or redevelop the proposed relationships (Component 2). Focus groups involving clinicians, managers and policy makers will be used to assess the synthesised CMO output (Component 3). This will allow the development of a model to explain how and why interprofessional practice works in rural contexts.

Within the framework provided by the IMO and CMO, we will draw on past research to inform key aspects of our research design, particularly our approach to sampling as well interview content. We have undertaken a review of literature on interprofessional approaches, focusing on material that reported on interprofessional collaboration in rural contexts. Our search strategy followed accepted literature review practices covering bibliographical searches of published and grey literature between 1999 - 2012. Relevant databases in health and social sciences were used to search for published literature including Medline, Embase CINAHL, PsycINFO. Social Sciences Abstracts, Proquest, Expanded Academic ASAP, Emerald, Science Direct and EBSCO multidisciplinary databases. We analysed the results of our literature review to identify factors related to interprofessional collaboration (Table 1), which were used to inform our initial interview schedule. Using the framework provided by the IMO and CMO, we identified a range of potential contextual factors capable of influencing interprofessional practice. These reflected elements in the broader policy and institutional environment, such as national, State and regional policy and resourcing, as well as elements of the professional and organisational setting such as professional norms and organisational

policies, systems and structure. We further identified several potential mechanisms including leadership, communication technologies and interprofessional protocols at the organisational level, as well as key individual and interpersonal factors, such as team dynamics and role clarity.

Participants

The study focuses on health care services in the lower mid-north coast and inland areas of New South Wales (NSW). This is an outer regional area, which encompasses a population with a significantly higher prevalence of major chronic illness, than metropolitan areas (Australian Institute of Health and Welfare (AIHW), 2008). It has been identified as an area of health workforce shortage (Department of Health and Ageing (DHA), 2008). While a body of work exists internationally (Reeves et al., 2007), limited published research explores the successful use of interprofessional collaborative approaches in rural Australian contexts (Goss et al., 2010; Gregory et al., 2006; Laurence et al., 2004). Australia's health care system provides some unique challenges that reinforce the value of this study (Australian Institute of Health and Welfare (AIHW), 2010).

The features of rural environments that prioritize research into effective interprofessional approaches also raise significant research difficulties. Though aspects of rural settings can provide challenges for all aspects of research design, the hurdles associated with participant recruitment in a rural setting and tapping unique aspects of rural culture are recognized as particularly demanding (Cudney et al., 2004; Lim et al., 2011). Clinician participant recruitment has been identified as a particular challenge for health service research (Gyorfi-Dyke et al., 2010). Given that a focus on interprofessional approaches to rural healthcare necessitates an understanding of clinicians' perceptions of the advantages and barriers to collaborative work across

professional boundaries, we present a research protocol designed to facilitate the inclusion of rural clinician participants across professional, service and functional domains. Based on our literature review and to ensure an inclusive research design, we identified the four key features on which healthcare delivery providers typically vary, in rural contexts. These four features have been integrated into a novel sampling framework depicted in Figure 2.

The first feature, 'Setting', incorporates acute care rural hospitals and community-based facilities, such as community health centres (Rosen, Gurr, & Fanning, 2010). This study incorporates a focus on both acute and community care contexts. This recognizes that the management of many chronic diseases requires integrated, collaborative care in primary and acute care settings (Laurence et al., 2004) and that models of interprofessional practice vary across contexts and settings (Leathard, 2003a).

The second feature, 'Function', denotes provider roles and reflects the pivotal role of both clinicians, policy-makers and managers in successful interprofessional initiatives (Nugus et al., 2010). This recognizes the role of government and institutional policy and organizational structures, norms and resourcing in effective interprofessional collaboration (Arndt & Burke, 2009; Cole, Waite, & Nichols, 2004; Leathard, 2003a; San Martín-Rodríguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005; Sleutel, 2000). This field also recognizes the role of clinician managers and other leadership roles in interprofessional work (Axelsson & Axelsson, 2009).

The third feature, 'Location', denotes the variation in practice across different institutional types. In rural locations, interprofessional practice spans community health centres, hospitals, individual practices and multi-purpose services (Sullivan, Francis, & Hegney, 2010). Location also recognizes variation in information and communication

technology and other enabling tools, in effective interprofessional work (Marshall, Harrison, & Flanagan, 2009).

The final field, 'Profession', reflects the requirement for all relevant professions to be represented in any investigation of interprofessional collaboration (Barrett, Sellman, & Thomas, 2005). In particular, this inclusion reflects the importance of professional roles, cultures, identity and associations in interprofessional work (Fitzgerald & Teal, 2004; Hall, 2005; Mitchell et al., 2011).

Data Collection

Data will be collected through one-to-one, semi-structured in-depth interviews and focus groups comprising both structured and non-structured components (Cavana et al., 2001), with three component summarized in Figure 1. Based on the IMO and CMO frameworks, our initial interviews with policy-makers, managers and lead clinicians will aim to understand the contextual influence of rural environment, institutional and professional factors on the mechanisms of interprofessional practice and associated outcomes. Analysis of data generated through this study component will be used to inform interviews investigating clinician perceptions of the identified contextual and processual issues. Integrative focus groups will be used to assess the pattern of relationships that emerge through these interviews and facilitate the development of a robust model explaining interprofessional practice.

Our initial interview schedule will be informed by extant literature on interprofessional collaboration as outlined in Table 1. For example, initial interviews will focus on the role of rural context, policies, resourcing and structural influences and the extent to which interprofessional approaches exist at organizational and institutional level.

Interviewees will also be asked about their professional responses to interprofessional work, the barriers to such collaboration, such as geographical proximity and facilitating factors, such as interprofessional training, leadership and communication technology.

Data Analysis

Content analysis will be used to identify major themes and categories of factors that influenced interprofessional effectiveness and experience. Initial content analysis will be conducted by two researchers independently analysing interview transcripts to generate patterns and theme. Themes will then be condensed to identify factors distinguishing effective interprofessional collaboration. An outline will be created for each factor identified as influencing effective interprofessional collaboration; the characteristics of each factor will be explored for interactions, sequencing and modes of influence. Trustworthiness of the analysis will be assured through the use of independent coders. Specialist software (NVivo) will be used to facilitate the identification and refinement of patterns and themes.

The IMO and CMO frameworks will inform data analysis (Ilgen et al., 2005; Pawson & Tilley, 1997). Context will be explored in terms of rural, policy, community, normative and institutional environment. Mechanisms will be investigated in terms of the processes, supports and enablers and barriers. Outcomes will be explored at the level of organization, team, clinician and patient. This study is funded by an Institute of Rural Clinical Services and Teaching grant (January, 2010).

Ethical Considerations

Interviewees will be provided with an explanation of the purpose of the interview and will be informed that their participation is confidential and voluntary. Participants will be invited to provide written informed consent. Digital audiofiles of interviews and focus groups will be stored in a password-protected file, only accessible

to members of the research team. Approval to undertake this study was obtained from the Hunter New England Human Ethics Committee (August 2010).

Rigour

The qualitative approach chosen for this study necessitates a focus on the validity of our measures (Kinnear & Taylor, 1991). The method used to develop our interview structure will be based on theoretical perspectives to enhance content validity and we will use triangulation between documentary material and face-to-face interviews and across face-to-face interviews. We will triangulate our interviews across several informants, incorporating both individuals who worked with an interprofessional team (insiders) and professionals who work outside the team (outsiders).

DISCUSSION

Rural healthcare challenges are well documented, however studies investigating the nature of interprofessional practice in rural contexts are not common. To our knowledge this proposed research is the one of the first that seeks to identify the factors that enable, facilitate or constrain effective interprofessional work, This is particularly important given the existence of continuing workforce shortages and maldistribution and poor health outcomes evident in rural communities globally.

The significance of this research can be considered from several perspectives. First, it will provide qualitative data across a range of participants to ensure that a range of relevant perspectives are available to inform the development of theory. It will also clearly identify the role of rural contextual factors in interprofessional practice and the mechanisms that, in combination, lead to improved service delivery and patient outcomes. The use of two well-established models, both of which incorporate a focus on pathways and processes, provides a framework well suited to exploring the complex and multifaceted components of interprofessional practice.

In addition, the sampling approach used to investigate interprofessional practice in rural Australia will incorporate representation across the four key features on which healthcare delivery providers typically vary in rural contexts. In doing so, this research protocol supports the inclusion of a range of different perspectives, which contributes to the rigour of our design, the validity of our findings and their utility to inform policy and the leadership of rural interprofessional initiatives.

Interprofessional approaches have been linked to improved health promotion outcomes (Kapelus, Karim, Pimento, Ferrar, & Ross, 2009) particularly in high priority areas such as osteoporosis, mental ill-health, diabetes and asthma prevention in both rural and metropolitan areas (Buckingham et al., 2006; Horan & Timmins, 2009; Von Korff, Gruman, Schaefer, Curry, & Wagner, 1997; World Health Organization, 2001). In terms of patient outcomes, the uptake and implementation of research findings is anticipated to result in more comprehensive, integrated care planning and service delivery by healthcare teams, with enhanced problem-solving and decision-making (Canadian Health Services Research Foundation (CHSRF), 2007).

Limitations

There are several limitations that are inherent in a qualitative study and are limitations of the current research protocol. In particular, the findings cannot be generalised beyond the context of the study, however they are likely to provide knowledge of similar contexts, particularly rural environments.

CONCLUSION

In terms of staff outcomes, health professionals in rural areas will experience better team cohesion and generally enhanced team function, leading to greater job satisfaction and less interprofessional conflict. In terms of systemic outcomes, effective interprofessional practice has been shown to have considerable economic implications

with lower treatment costs per patient. Significant socio-economic benefit are associated with reduced health care costs due to the impact of interprofessional teams including lower rates of admission for chronic disease, lower ICU readmissions, reduced length of stay and lower staff turnover.

Conflicts of Interest: No conflict of interest has been declared by the author(s).

Funding Statement: This study is funded by an Institute of Rural Clinical Services and Teaching grant (January, 2010).

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Table 1 Factors related to interprofessional collaboration.

Mechanism		Context
Individual and Interpersonal Factors	Professional and Organisational Factors	Institutional and Environmental Factors
Individual role clarity, boundaries and responsibilities.(Atwal & Caldwell, 2002; Bailey, Jones, & Way, 2006; Coe & Gould, 2008)	Professional organisation, norms, policies and resources (Fitzgerald & Teal, 2004; Hall, 2005; Mitchell et al., 2011).	Federal, State and regional policies, resourcing and structures (Leathard, 2003a; Oandasan et al., 2006).
Individual approach to professional boundaries and interprofessional work (Reeves et al., 2009; Stenner & Courtenay, 2008).	Healthcare organisations, norms, policies and resources (Dugdale & Wells, 2012; Oandasan, 2009; Reeves et al., 2007).	Social and economic context (Brems et al., 2006; McNair, Stone, Sims, & Curtis, 2005).
Individual and shared accountability (Green, 1988).	Organisational leadership (Reeves, Macmillan, et al., 2010; Taylor, 2009).	Interprofessional education and training (Arndt & Burke, 2009; Barnes, Carpenter, & Dickensen, 2000; Centre for the Advancement of Interprofessional Education (CAIPE), 2008; Curran et al., 2009; Hammick et al., 2007).
Team processes and dynamics including communication and decision-making (Gaboury, Bujold, Boon, & Moher, 2009; Sheehan, Robertson, & Ormond, 2007) (Cook, Gerrish, & Clarke, 2001; Wood, Flavell, Vanstolk, Bainbridge, & Nasmith, 2009).	Organisational information and communication technology and practices (Foreman, 2008; Syväjärvi, Stenvall, Harisalo, & Jurvansuu, 2005).	Integration of interprofessional approaches at institutional levels (Cunningham & Dunn, 1987).
	Integration of interprofessional approaches at organisational level.	Geographic proximity including models of co-location (Brems et al., 2006).
	Shared, interprofessional protocols and tools (Lau, Banaszak-Holl, & Nigam, 2007).	

Figure 1: Study Design

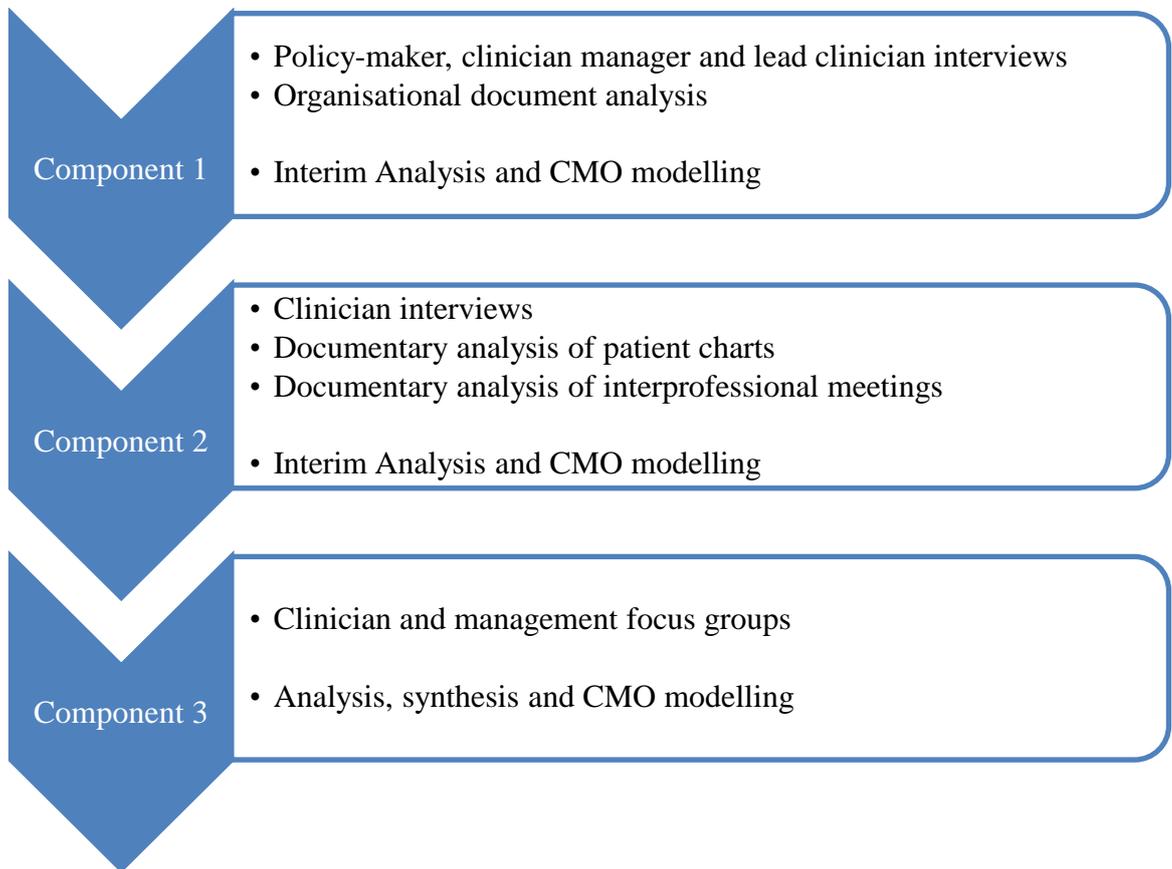
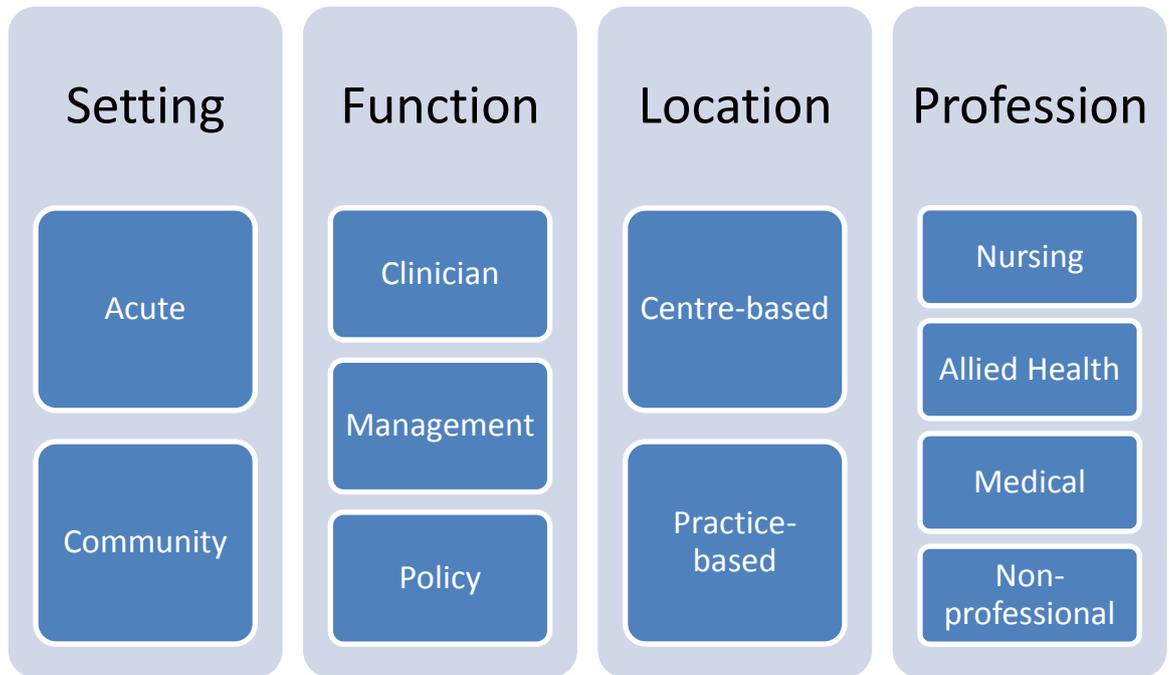


Figure 2: Study Sampling Model



7.4 Paper 3: Rural IPP

Full Citation:

Parker, Vicki, McNeil, Karen, Higgins, Isabel, Mitchell, Rebecca, Paliadelis, Penelope, Giles, Michelle, & Parmenter, Glenda. (2013). How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study. *BMC Health Services Research*, 13(1), 500. doi: 10.1186/1472-6963-13-500

The electronic version of the published article can be found online at:

<http://www.biomedcentral.com/1472-6963/13/500>.

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7.4.1 Statement of Contribution of Others

A copy of the relevant signed statement appears on the following two unnumbered pages.

Statement of Contribution of Others

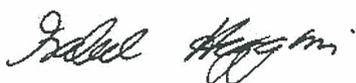
We, **Vicki Parker, Isabel Higgins, Rebecca Mitchell, Penelope Paliadelis, Michelle Giles, Glenda Parmenter** and **Karen McNeil**, attest that PhD candidate, **Karen McNeil**, had a major role in the development and refinement of the research project's design and method, overall conception of the content of the paper, and the drafting and final revision of the publication entitled:

Parker, Vicki, McNeil, Karen, Higgins, Isabel, Mitchell, Rebecca, Paliadelis, Penelope, Giles, Michelle, & Parmenter, Glenda. (2013). How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study. *BMC Health Services Research*, 13(1), 500. doi: 10.1186/1472-6963-13-500 (Also known as Paper 3)



Vicki Parker (Co-Author)

Date: 14 August 2014



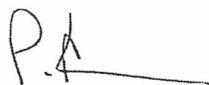
Isabel Higgins (Co-Author)

Date: 4 August 2014



Rebecca Mitchell (Co-Author)

Date:



Penelope Paliadelis (Co-Author)

Date: 4 August 2014



Michelle Giles (Co-Author)

Date: 11 August 2014



Glenda Parmenter (Co-Author)

Date: 1 September 2014



Karen Anne McNeil (Candidate)

Date: 1 September 2014



Frank Agbola (Acting Assistant Dean Research Training (Faculty of Business and Law))

Date: 02/09/2014

7.4.2 Introduction

Although recent commentary has supported IPP as a mechanism to address rural health service deficiencies (Australian Government, 2009; Canadian Health Services Research Foundation (CHSRF), 2007; Centre for the Advancement of Interprofessional Education (CAIPE), 2008) and provide support to rural health practitioners (Williams, 2012), the implementation of IPP in rural settings may be undermined by workforce shortages and the fragmentation between health sectors. The unique characteristics of the rural context will also necessarily impact on how IPP is realised. This study aimed to investigate the factors influencing effective IPP, as well as the underlying mechanisms. The design of the study was based on a modified realistic evaluation framework (Pawson & Tilley, 1997). Data from 22 semi-structured interviews with health professionals across a range of settings, functions and locations revealed the diverse and complex nature of rural IPP. Funding arrangements, pivotal roles, colocation and workforce resources were identified as drivers of IPP, while barriers included intense workload, staff shortages, embedded professional cultures and hierarchies.

Rural health services are presented with significant challenges. Compared to their urban counterparts, residents face higher rates of chronic disease (Merwin et al., 2003) and poorer access to health services (Dussault & Franceschini, 2006), while clinicians struggle with providing a broader range of services, long hours, inadequate locum coverage and limited professional support networks (Australian Government Productivity Commission, 2005). Interprofessional working in rural areas has been linked to improvements in patient care and cost effectiveness (Blount, 2000; Thornicroft & Tansella, 1999), in addition to increasing clinician satisfaction, retention and professional support (Brems et al., 2006; Goss et al., 2010; Schofield et al., 2009). Nonetheless, communication gaps engendered by embedded disciplinary boundaries and cultures continue to impinge on effective IPP in rural contexts (Bourke, Coffin, et al., 2010). Moreover, given workforce pressures and the unique socioeconomic and geographic characteristics of rural settings, it is likely that the way that IPP is practised will diverge from that which occurs in urban contexts.

Data collection and analysis was informed by the IMO model (Ilgen et al., 2005) and the theory of realistic evaluation, which have been discussed in detail in the Literature

Review in Section 6.2.4.2 (Models of Team Dynamics and Effectiveness). The research framework focusses on investigating the inputs, mechanisms and outcomes of rural IPP. Purposive recruitment of participants ensured representation across professions, functions, geographic settings and health care contexts. Interviews were conducted with 22 health professionals over a period of twelve months. Questions centred on how IPP occurs, the personnel involved, when and why, decision making processes and outcomes. In addition, interviewees were asked under what circumstances IPP is most effective, the barriers to success and what could be done to make IPP more effective. Interviews were transcribed by an external transcription service. The study was approved by the health district ethics committee. Participation in the project was entirely voluntary, and informed written consent was obtained. Anonymity of informants was maintained throughout the research process. Data from the transcripts was independently coded and themed by all research team members. These analyses were discussed by the team, rationalised and consolidated and then the endorsed themes were populated with quotes to provide an integrated account of the data.

Overall, the results indicated that participants valued IPP and considered that it improved patient care and access to services, provided mutual support to health practitioners and fostered learning, collaborative problem solving and sharing of workload. However, there were diverse descriptions of what IPP is, and how it occurs determined by context, resource and service availability and different agenda. Participants' descriptions of IPP included routine meetings, ad hoc case conferencing, serendipitous meetings and integrated services. They also described examples of referral and sequential care which do not fit any definition of IPP, yet those participants saw that true IPP was not achievable given workload pressures and traditional modes of working.

Various factors were seen to facilitate IPP. Firstly, the close-knit connections in rural communities mean that clinicians have the benefit of local knowledge, while often sharing the same concerns and patients with other local health practitioners. Participants believed that this social aspect of rurality makes it easier for them to engage in IPP, compared to urban contexts. Further, a number of key roles were identified as pivotal in driving and maintaining IPP within and across health care settings: these included general practitioners (GPs), service managers in community health, Practice Nurses and discharge planners in hospitals. Additionally, funding programs were identified as

drivers of IPP while proximity and colocation of health professionals helped foster teamwork and promote referral and sharing of patients in formal and informal ways. Finally, shortages of health practitioners and the consequent high workloads, particularly for AHPs, motivated clinicians to seek each other out for advice, support and to share the load.

Workforce pressures also acted as barrier. Excessive workload and long-term vacancies meant that IPP was less viable: vacancies reduced the potential for consultation, staff were overloaded, and stress caused them to adopt less collaborative approaches. Interviewees also recounted IPP being stymied by some clinicians exhibiting a lack of knowledge of other health professionals' skills and expertise, not being considerate of their colleagues, or not investing in communicating effectively. For example, some GPs were noted as not willing or able to engage in IPP. This was attributed to traditional hierarchies and ways of working that exist within health care. Fragmentation between sites and contexts also prevented IPP working effectively, despite the concept of IPP permeating most areas within the health district. Additionally, some models of IPP were identified as being fragile, as their continued viability depended on the availability of particular health professionals. Among the suggestions to address deficiencies included a need to define roles and responsibilities and to focus interprofessional education efforts on role understanding.

Although this study was a broad-based investigation of rural IPP, issues associated with professional roles, entrenched hierarchies and embedded ways of working were prominent. Therefore this paper contributes to the overall thesis by reinforcing how issues of professional identity underpin much of what occurs in IPP. For example, boundary spanning roles were viewed as important drivers of interprofessional working, yet the literature points to problematic relationships between GPs and other health providers, based on imprecise role definitions, lack of trust, and concerns about threats to autonomy and independence (Lockhart, 2006; McDonald et al., 2012). In addition, our findings support earlier commentary that rural practitioners place greater value on the work of other health professions than their urban counterparts (Bourke, Humphreys, Wakerman, & Taylor, 2010b), yet we found evidence where lack of interprofessional knowledge, rigid professional boundaries and embedded professional cultures and hierarchies continue to impede IPP effectiveness. Issues relating to professional roles and role boundaries, in the context of workforce shortages and IPP, are further explored

in *Paper 4: Workforce Shortages*. Both *Paper 3* and *Paper 4* offer hope that IPP outcomes can be enhanced through an understanding of how professional identity impacts on IPP, promoting an appreciation of the skills and expertise of other health professions and through developing trust, respect, and the sharing of information between team members.

Paper 3's importance to this field of research is borne out by the reviewers of the manuscript: “This is an interesting and valuable paper that I believe deserves to be published after some important revisions ... An article of importance in its field” and “The article is well written and a potentially valuable contribution to the literature”.

7.4.3 Publication

How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study

Vicki Parker^{1,2,4,§}, Karen McNeil³, Isabel Higgins⁴, Rebecca Mitchell³, Penelope Paliadelis¹, Michelle Giles², Glenda Parmenter¹

¹ School of Health, University of New England, NSW Australia

² Centre for Practice, Development and Opportunity, Hunter New England Area Health District, NSW Australia

³ Newcastle Business School, University of Newcastle, NSW Australia

⁴ School of Nursing, University of Newcastle, NSW Australia

§Corresponding author

Email addresses:

VP: vparker3@une.edu.au

KM: Karen.McNeil@newcastle.edu.au

IH: Isabel.Higgins@newcastle.edu.au

RM: Rebecca.Mitchell@newcastle.edu.au

PP: ppaliade@une.edu.au

MG: Michelle.Giles@hnehealth.nsw.gov.au

GP: gparment@une.edu.au

Abstract

Background

Although interprofessional practice (IPP) offers the potential to enhance rural health services and provide support to rural clinicians, IPP may itself be problematic due to workforce limitations and service fragmentation. Differing socioeconomic and geographic characteristics of rural communities means that the way that IPP occurs in rural contexts will necessarily differ from that occurring in metropolitan contexts. The aim of this study was to investigate the factors contributing to effective IPP in rural contexts, to examine how IPP happens and to identify barriers and enablers.

Methods

Using Realistic Evaluation as a framework, semi-structured interviews were conducted with health professionals in a range of rural healthcare contexts in NSW, Australia. Independent thematic analysis was undertaken by individual research team members, which was then integrated through consensus to achieve a qualitative description of rural IPP practice.

Results

There was clear evidence of diversity and complexity associated with IPP in the rural settings that was supported by descriptions of collaborative integrated practice. There were instances where IPP doesn't and could happen. There were a number of characteristics identified that significantly impacted on IPP including the presence of a shared philosophical position and valuing of IPP and recognition of the benefits, funding to support IPP, pivotal roles, proximity and workforce resources.

Conclusions

The nature of IPP in rural contexts is diverse and determined by a number of critical factors. This study goes some of the way towards unravelling the complexity of IPP in rural contexts, highlighting the strong motivating factors that drive IPP. However, it has

also identified significant structural and relational barriers related to workload, workforce, entrenched hierarchies and ways of working and service fragmentation. Further research is required to explicate the mechanisms that drive successful IPP across a range of diverse rural contexts in order to inform the implementation of robust flexible strategies that will support sustainable models of rural IPP.

Keywords

Interprofessional practice, rural contexts, qualitative methods, health professionals

Background

Approximately half the global population lives in rural areas (Dayrit, Dolea, & Braichet, 2010) where residents have higher rates of chronic disease, injury and early death compared with people living in metropolitan areas (Merwin et al., 2003). There are also major health workforce shortages in rural areas along with poor access for rural residents to a range of health-care services (Dussault & Franceschini, 2006). The health workforce shortage in rural areas has far-reaching implications for how health workers practise with major differences in work practice and scope between metropolitan and rural clinicians.

Rural health practice is distinguished by more generalist approaches to healthcare and service models which differ from those found in metropolitan centres (Bourke, Humphreys, et al., 2010a). Patients are faced with the struggle of negotiating a fragmented health system where there is a historical “‘disconnect’ between general practice, acute care and community health services” (Jackson & Marley, 2007, p. 85). Moreover, health professionals working in rural settings are likely to provide a broader range of services, work longer hours, operate without adequate locum coverage, have restricted access to specialist expertise and have limited access to professional support networks (Australian Government Productivity Commission, 2005). Professional

boundaries are often less clear, with a need for multiskilling and flexibility in accordance with limited resources and other constraints (Paliadelis et al., 2012). In contrast, metropolitan practice is generally more specialised with a diverse and large workforce with defined discipline boundaries and scope within with a wider range of services, and resources than is available to rural practice (Bourke et al., 2004).

Interprofessional practice (IPP), defined as teams of professionals with diverse skills working together synergistically to achieve optimal outcomes for patients and their families (World Health Organization (WHO), 2010), has been promoted as a key factor in improving the effectiveness of health services in a number of countries (Australian Government, 2009; Canadian Health Services Research Foundation (CHSRF), 2007; Centre for the Advancement of Interprofessional Education (CAIPE), 2008) particularly in rural and remote areas (Australian Government Productivity Commission, 2005; Jensen & Royeen, 2002). While there is some evidence to suggest that IPP teams provide a more clinically effective service, generate better health outcomes, are more innovative and patient-focused (Canadian Health Services Research Foundation (CHSRF), 2007; Leathard, 2003b), other studies have demonstrated that interprofessional collaboration can be hampered by communication barriers, power and status differences, and a lack of knowledge other health profession's roles and expertise (Caldwell & Atwal, 2003; Reeves et al., 2009; Sharpe & Curran, 2011).

Nonetheless, the implementation of IPP has been associated with positive healthcare and professional outcomes in rural settings. Integrated IPP service provision in rural areas has been found to improve patient care, satisfaction with care, enhance cost-effectiveness and provider learning (Blount, 2000; Thornicroft & Tansella, 1999). IPP work has also been linked to increased job satisfaction and retention in rural areas (Goss et al., 2010; Schofield et al., 2009). There is also evidence that IPP teams enhance

professional development across health specialties and alleviate professional isolation (Brems et al., 2006). However, according to Bourke, Coffin, Taylor, & Fuller (Bourke, Coffin, et al., 2010, p. 5) there have been limited reports of success in achieving true IPP in rural contexts “with most rural health, practitioners and academics alike, work within their own disciplinary boundaries. Communication and shared language between disciplines and cultures are lacking” (p. 5).

Whilst offering potential to enhance services and overcome some of the challenges faced by rural clinicians (Senate Community Affairs References Committee, 2012), IPP may itself be problematic due to the reduced number of health care workers across a small number of professions. Differing socioeconomic and geographic characteristics of rural communities means that the way that IPP occurs in rural contexts will necessarily differ from that occurring in metropolitan contexts. Furthermore, while the Australian healthcare system and context is unique, very similar issues occur in rural health in Canada, United States, New Zealand, United Kingdom and parts of Europe (Bourke, 2012).

Methods

Research aim and relevance

This study’s aim was to investigate the factors contributing to effective IPP in rural contexts, to examine how IPP happens and to identify barriers and enablers.

Design

The study was guided by a qualitative descriptive approach using Realistic Evaluation (Pawson & Tilley, 1997) as a research framework. This approach asks, what works for whom in what circumstances? In this study it encompassed policy, organisational and management influences in rural interprofessional environments and explored the participant perceptions about supportive mechanisms as well as expected and observed

outcomes (Mitchell, Paliadelis, et al., 2013). Interviews were used to gather in depth information from individual managers and clinicians. Interviews were conducted rather than focus groups because of the logistical difficulties of getting clinicians together due to distance and workforce shortages.

Recruitment

Invitations to participate were distributed to eligible rural health sites. Participants were purposively recruited to ensure representation of professions and role functions, including managers and policy makers, across a range of regional and rural geographic settings, across sectors and types of health care facilities i.e. community health centres, hospitals, individual practices and multi-purpose services. The professions, roles and settings of participating health professionals are detailed in Table 1.

Table 1: Summary of participating health professionals

Health Profession/Role	Number	Setting	Number
Health Service Manager ¹	7	Acute	14
Medical Officer	3	Community	16
Nurse Manager	2	Primary	3
Registered Nurse	5		
Allied Health Practitioner (AHP)	3		
Clinical Nurse Consultant	2		
TOTAL	22	TOTAL	33²

¹ Health Service Managers had professional backgrounds in either nursing or allied health

² Nine participants worked across two settings, one participant worked in three settings.

Data collection

Data collection comprised semi-structured interviews with 22 health professionals over a period of twelve months in 2011 and 2012. In line with Pawson and Tilley's (1997)

framework, clinicians were asked about their experiences of and professional responses to interprofessional work, the barriers to such collaboration, and facilitating factors. Managers and policy makers were asked about the role of policies, resourcing and structural influences, and the extent to which interprofessional approaches exist at organizational and institutional level. Interviews began by asking participants about their experiences and views of IPP in their own situation and were structured around the following questions:

- How does IPP happen? Who is involved, when, and why, what decision making occurs, what outcomes ensue.
- Under what circumstances is IPP most effective?
- What barriers exist to successful IPP?
- What changes are required to make IPP more effective?

Interviews lasted between 20 minutes and 90 minutes and were transcribed later for analysis by the research team.

Ethical considerations

This study was approved by an accredited NSW Health Department ethics committee (HNEHREC 10/06/16/4.01). Informed written consent was obtained through the delivery of an information statement written in plain language which outlined the purpose of the study. Participation in the study was entirely voluntary and interviewees were given the option of withdrawing from the project at any time without giving a reason.

In order to maintain confidentiality of participant information and comments, interviewees were assigned code numbers and these codes were used throughout the research process. To protect the anonymity of informants, very limited demographic

information has been included in the results. This is essential given the close-knit nature of the rural communities studied.

Data analysis

Interview transcripts were read by all research team members. Researchers independently coded, collated and inductively derived categories and themes from the data, specifying their relevance, dimensions and parameters. Research team members then shared and discussed their collective findings which were then rationalised and consolidated. Finally, these endorsed themes were worked into a comprehensive description, populated with quotes to ensure grounding in the data and representation across participants to provide an integrated account of participants' views and experiences of IPP. This textual representation was validated by the full research team.

Trustworthiness of the research

In keeping with requirements for qualitative research, trustworthiness is demonstrated through reference to credibility, confirmability, dependability and transferability (Shenton, 2004). To this end, rigour was ensured through independent researchers analysing the data and then comparing across researchers for consensus, by keeping an audit trail of activity linking summary data and interpretations to original source material and by adhering to consistent and ethical research processes. The potential for transferability is achieved by providing:

...sufficient detail of the context of the fieldwork for a reader to be able to decide whether the prevailing environment is similar to another situation with which he or she is familiar and whether the findings can justifiably be applied to the other setting (Shenton, 2004, p. 63).

Results

The study findings are reported in two sections, views and experiences of IPP reported by study participants and enablers and barriers to rural IPP.

Participants' views about and experiences of IPP

Valuing of IPP

Across all participants it was a taken-for-granted that IPP was a good thing and that it is instrumental in achieving quality healthcare and beneficial outcomes for patients.

Although there were many reasons why IPP was seen as important, such as support for and learning from each other, shared problem solving and rationalisation of effort, the most cited benefit was improved access and care for patients.

And you aren't overly reliant on a one to one type relationship... There's learning between different health professionals I think, sharing information, it value adds to the care. (Medical General Practitioner (GP)).

I think there are a lot of benefits from different professions working together as far as the continuity of care for patients and I think also a more holistic look at how patients are managed, because if the different professions are speaking to each other and talking to each other all the time then you're getting a more rounded view of the patient and what the issues are. (Nurse Manager).

In spite of the universal acceptance of IPP, there were disparate views about what IPP is, whether it actually occurs and varied descriptions of how it occurs. Some participants were unequivocal that IPP was a feature of their practice, for example,

I see interprofessional practice is what we do, what I do every day. (Medical Officer)(MO).

The following comment from a Health Service Manager (HSM) sums up the view of most participants that a comprehensive approach to care requires a team approach:

Because we're dealing with not just one particular issue or not just one particular concept, and because you're dealing with health and health is influenced by so many different things, naturally, you're taking a comprehensive approach and if you're taking a comprehensive approach you need participation of everybody in the team. You never do anything on your own. You just can't do things on your own. You can't function in a silo.

IPP as complex and varied

All participants recognised the significance of working with and across disciplines and indicated ways in which they were participating in IPP. How they varied was in the purpose of their engagement and the level at which they were willing and able to invest, ranging from direct care contexts and education of patients and staff to policy development and whole of community health service planning and provision. It is clear that ways of working together vary according to each peculiar context and availability of health services and that IPP is complex and operates in different ways to inform and achieve different agendas and outcomes.

You do it differently because of circumstances and the context is different.

Generally, again, it comes down to that recruitment and retention and having the availability of that interprofessional team. You might have a dietician but it's only limited hours, so it makes it more challenging.

(AHP)

Generally reports of IPP fell into the following broad forms:

Routine meetings include those activities that are planned and organised such as

interprofessional team meetings. These usually occur on specific hospital wards or units, however their success depends on participation of all members, which is not always the case:

We haven't had much luck in getting GPs to case conferences as you can imagine, it's usually a really complex case that involves lots of other organisations where we can manage to get a GP involved, which is you know a bit sad but that happens (Nurse Manager)

Ad hoc case conferencing was identified as occurring for three reasons; for problem solving complex intractable clinical problems, where health service utilization is high or for policy implementation:

... you encourage people to work together in order to solve a problem or in order to work together to help a client. You may call a case conference, or you may form a working party, in order to work on a policy directive... Also if there's a client that may be using a lot of service providers within community health, we might have a case conference just so everyone knows what the other party's doing, so we're not overlapping with referrals and that sort of thing (HSM).

Referral also occurs where a clinician usually GP, service manager or discharge planner refers to one or more other clinicians. Referral may or may not include a requirement for or commitment to ensuring feedback. Referral and sharing of clients occurs across professions, services, health care sectors, specialist and generalist services and rural and metropolitan service providers. It occurs in formal and informal ways.

Others suggested that what occurs is not IPP at all, but simply a range of practitioners who 'use' each other's services (**sequential care**), most often through referral

processes. In this way patients are handed over at particular points in their health care journey rather than their care being designed and delivered through shared decision making and planning. It is not that practitioners do not believe in the value of IPP but they see that the opportunity for true interprofessional working is limited by workload constraints and adherence to certain ways of working. This was the case particularly for Allied Health practitioners working in the community, as one participant explained:

for community patients there is very limited opportunity for us to work interprofessionally because we may be working with the same patient but we're picking them up at different times (AHP)

Interprofessional consultations, sharing of information and handover of clients also occurs **serendipitously** through corridor conversations as suggested below

But it's not a set planned thing and I guess that happens all up and down the corridor in our offices because we have sort of an open-door vibe here. People do just walk in and say, "So what's happening with such and such?" And you can very quickly get a rundown on where the care is up to and if they need anything new or that kind of thing. (AHP).

At times IPP was considered to be the result of shared understanding and planning of **integrated services**. Instances of integrated care were described where there is continuous involvement of various professionals with feedback and shared decision making, usually incorporating broader functions such as education, social support, together with involvement of patients and families. These practices were identified as occurring in palliative care, rehabilitation, transitional aged care, Aboriginal services and some child and family services. Decisions about care provision and who is best placed to provide care are often complex, particularly for clients with chronic disease or cancer.

Enablers and Barriers of Rural IPP

In many instances factors that were seen to impact IPP were identified as operating to either enhance or impede IPP, for example workload and time constraints. Specific enablers of IPP were identified as: belonging and connection to community; individuals who were able to engage and connect services; formal and informal communication strategies; funding models, in particular the Australian government health insurance (Medicare) rebates for Enhanced Care/Chronic Care Programs; co-location of services and excessive workload. Barriers identified included workload and workforce limitations; non-valuing of the team or other health professionals; and absence or fragmentation of services.

Enablers

1. Connection to Community

In the main, rural health care is provided by health professionals who are members of the local community. This means that they have local knowledge of the place, its people and the socioeconomic and historical circumstances that impact on the town and the health of the community. This connection to place, people and purpose means that local health professionals often share the same concerns and the same challenges. They also quite often share the same patients.

There is a strong community connection. I also think most of us have got a (shared) vested interest in our communities. (HSM).

I've got such good local knowledge. You know the people who come into hospital, you know their carers, you know where they live and that's the beauty really of living in the country. Even though you can be isolated and marginalised as far as getting services or getting people specialist treatment, they're the benefits because you know people on a more intimate level. So you're fortunate in the fact that you've got a more hands on approach to

following up with people (Registered Nurse (RN)).

This history of shared experience has meant that participants see what they do as inherently interprofessional, which in their view makes IPP more important and more likely to succeed. They also believe that it is logistically and geographically easier for them to engage in IPP than it is for their metropolitan counterparts.

Because it is a small town, the people we are working with are generally friends. So we've got a good social relationship as well as a professional relationship. So I certainly think there's more benefits to working in the country in this sort of respect with, knowing the people you're working with so you're able to talk to them. You're not as standoffish about approaching someone to ask advice or ask for referral and that sort of thing. (RN)

2. Pivotal Roles

Participants identified a number of key roles which were critical in championing, initiating or maintaining IPP within their domain or across healthcare settings. The role of the GP is critical in rural healthcare. As often the first point of contact for patients GPs contribute to IPP in a number of ways; through co-ordination of Medicare funded packages, in collaboration with Practice Nurses, and through employing various professionals within their practices, or by co-opting professionals to run or participate in clinics. They also participate to varying degrees in Multidisciplinary care and team meetings in Multipurpose Services (MPS) and hospitals.

And I guess it's even more apparent since Medicare funded all of these care plans so that allied health practitioners can now access Medicare in certain circumstances, and GP's have kind of become the gatekeeper of chronic disease management, I suppose. So I am continually referring patients to allied health practitioners and then they're continually

communicating back with me. (MO)

Along with the GP, other professionals who played pivotal roles, initiating and co-ordinating interprofessional engagement, included service managers in community health, Practice Nurses and discharge planners in hospitals.

... [the Discharge Planner] she's sort of the glue... that holds us all together because she's got this extensive knowledge and extensive contact base for all of it really: the residential aged care facilities, your HACC [Home and Community Care] services, anybody and everybody that's involved in that external relationship, she's the sort of pivotal point... Although she's line managed by the acute service, by myself, she crosses over evenly really across all of those internal and external disciplines. She's the key. (Nurse Manager).

Participants also recounted examples of where Practice Nurses had become the principle point of contact for the coordination of care, preparation of health care plans for those with chronic illnesses and recruitment of patients to participate in programs while doing immunisations.

3. Funding

Some of our participants discussed how interprofessional collaboration between GPs and other health professionals has been fostered via government health insurance rebates for referrals to AHPs under Enhanced Care/Chronic Care Programs:

I think since the introduction of the fact that allied health practitioners can now access Medicare in certain ways that's actually precipitated an increase in that sort of communal management of people...So it's the introduction of the Care Plans, I would have to say. (MO)

One interviewee described how funding opportunities can also drive practitioners to

collaborate across health settings:

Also have been able to share employees and capitalise on funding... And so on a monthly basis I actually meet with the chief executive of the Medicare Local now and so we've been meeting for over six years on a monthly basis and we discuss programs. (HSM).

4. Proximity and Colocation

Another way in which IPP is made possible in rural areas is through bringing professionals together in the one site, usually within a GP Practice or MPS. This enables patients to see a range of professionals without the need for extensive and burdensome travel. This model is not only effective in creating interprofessional teams but it also ensures timely consultation with necessary services. Participants reported that prior to introduction of these models some patients were waiting up to eighteen months for professional services, often having to travel two and half hours to a major centre. Having a range of services within a practice or MPS also allows patients to be engaged more effectively in their own care, especially through increased opportunity for education. This is achieved through funded care plans for patients with a chronic disease.

...It just reinforces and helps I guess the patients to begin to be part, own their care and it reinforces what you can offer in a short time...we have a diabetes clinic within our surgery and we have an Educator and a Dietician who come to the surgery. And the reason why we did that was it was taking up to a year to 18 months for some patients to actually access care through the diabetes clinic [in a larger centre], so you know it was just "mission impossible" trying to fit people in. So the way that works is through the Co-ordinated Care Management plans and then through

Medicare. (MO)

Participants also recounted examples of where colocation of health practitioners promoted referral and sharing of clients in formal and informal ways:

We're all, we're quite informal with most of our liaison with the other professionals because pretty much all [the team] is up on this floor and so we can simply walk down to someone else's office and you sit down and just have a chat with them about what's going on...(RN)

Because I share an office with an occupational therapist there's a lot of informal conversations about cases that obviously are relevant to both of us (AHP).

5. Workload and Workforce Drivers

Some participants explained that IPP exists out of necessity and is driven by excessive workloads and lack of workforce. This was the case particularly for Allied Health Professionals (AHP).

I guess we probably don't do as much active intentional interprofessional... But I guess that's probably to do with workloads and those kinds of issues. But there's definitely a lot of interaction between different professions in our team (AHP)

Because they are few in number and each some of them, particularly AHPs, may be likely to be the only member of their profession in town, rural health professionals have become highly reliant on each other for advice, support and to share the load.

...[the] allied health team and other health workers are your support network and your team as well (AHP).

It's most effective for me because you're sometimes in these sorts of positions

you can feel like you're a sole practitioner, you feel like you're making all the decisions yourself...what's been most effective for me is gathering in all these other people around me and all working together and not feeling like you're working alone. (RN)

This level of interprofessional support was clearly demonstrated by examples of team members providing support for overstretched colleagues. Working in an interprofessional team also conveyed additional benefits in terms of professional development and learning to appreciate different disciplinary perspectives:

where I've had more to do with Allied Health, it's taken me a while but I realise that they've actually got a totally different mindset or they're taught a different way of looking at patients than nurses do, so I think that's a really good thing to bring to a case discussion about clients (Nurse Manager)

Barriers to IPP

1. Workload and Workforce Limitations

Whilst excessive workload was cited as a driver of IPP, it was most often viewed as an impediment to interprofessional working. In many of the study sites there were minimal numbers of health professionals representing a small number of disciplines working across a large geographic area. There could be no-one, or very few people with whom to share information and consult with about patient care. This was the case particularly for Allied Health practitioners working in the community, as one participant explained:

Most of the clinicians on staff are extremely busy... because we have waiting lists and different prioritisation schedules and tools in terms of how we prioritise our patients, it's very hard to pick up the same patient at the same time. (AHP).

It would be great if we had a dietician because a lot of my work goes hand

in hand with them. And with having a very, very limited service, the most interaction I get with her is basically just email. (AHP)

It was felt by some that excessive workload over protracted periods of time meant that staff were overburdened and often too tired to consider how they might engage in a more effective way.

The barriers are that for all staff the doctors and the nursing staff and Allied Health is their workload, they certainly do struggle sometimes with their workload. And I guess the other barrier is when people put themselves before what we're trying to achieve, and that could well be related to their workload as well. I think more often than not the workload and with that tiredness comes an inability to be able to see the forest for the trees. (HSM).

2. Non valuing of the team and its members

Participants recounted numerous instances where IPP was hampered by professionals not knowing each other's roles, not being considerate of or communicating effectively with other team members. This was believed in part due to entrenched traditional hierarchies and ways of working. GPs can be pivotal in driving IPP, they were also identified by some participants as at times not being willing or able to participate effectively with the IPP team. This was recognised by a variety of members across teams, including doctors themselves.

I guess, by a lot of history, doctors have got a very specific place in the health hierarchy and many of them. I won't say play on it but they think that they are at the top of the pinnacle and they don't always like to take other people's views into consideration (M O).

Barriers are when people don't want to be game players with the larger

team. So if you've got a client's GP who sees the client on a regular basis but they don't give you feedback, but they complain when you don't give them feedback. So they just do their own thing and they're not ensuring that they are part of the larger network and ensuring that other people in the treating team know what they're doing. (Clinical Nurse Consultant (CNC))

There was also recognition that some clinicians don't readily engage in IPP and that it takes time to build the conditions and processes necessary to develop knowledge and trust in each other's skills.

There are some personalities that just don't, really feel comfortable in terms of engaging in that model. And so it takes time to do that and knowing each other's kind of skills. (MO)

...and the other thing is actually making sure that we all understand everyone else's role. That's actually really important...I think it's something every health professional should understand, that whole health care team and who does what, where and when, to be able to support your clients the best you need to. But certainly in rural practice it's knowing who that person, that one person is to contact (AHP).

3. Absence of and fragmentation of services

A number of managers and nurses with area wide jurisdiction pointed out the complex and often fragmented way in which IPP occurs. There was a strong view that although numerous mechanisms for IPP exist at a range of levels across sites and contexts, often these mechanisms do not connect or inform each other. As one CNC said:

There are three separate multidisciplinary team discussions that I'm aware of that have different structures and different outcomes attached to

them. And I don't even know really what goes on in discussion in the community health and in GP practices and whatever else.

Despite the recognition by GPs that IPP is increasingly required to treat patients with complex chronic conditions and co-morbidities, links between GPs and other community providers are reported as limited. Furthermore, we found some evidence of gaps in communication processes between AHPs and GPs:

...For some of the allied health stuff it's sometimes seems a bit amorphous...For example, you send someone for podiatry, and you'll get an initial thing back and they'll have done a very good assessment, but it kind of then disappears into the ether... (MO).

Different models of IPP exist because of different funding programs for different types of illnesses, differing contexts with varying available services and staff and the specific interests and skills of individuals. Many models are fragile in that they depend on the continued availability of one or two health professionals.

We used to have a child development clinic that has fallen by the wayside with workload and change of staff and recruiting vacant positions and things like that. So hopefully it will come back in time but it was just for...the first three years of life, if the parent was concerned, to bring them in and be able to see three allied health staff and a community child and family health nurse in the one room and have that kind of one-stop shop situation. (AHP).

Overcoming Barriers

Participants also suggested ways in which some of these perceived barriers could be managed. For example, along with the need for adequate numbers of professionals successful IPP requires the development of a culture of open and critical engagement,

sharing and safety, directed towards patients and their care. In order for this to happen there is a:

Need to define roles & responsibilities; provide a safe environment for open communication. It really comes down to the professionals themselves and their willingness to actually look at interprofessional practice, where people can feel free to say and critique what's happening with that patient (MO).

Another Medical Officer highlighted how the lack of shared language, history and education could be remedied by interprofessional education efforts which focussed on role understanding:

I think that if we still educate people in silos, if they continue to be educated in silos then you will still have this kind of arrogance between professions that need not be there...But I do think that if we can get the students to have some perception of what the roles are of these other people and respect them and then that's heading in the right direction. (MO).

Discussion

The aim was investigate to the factors contributing to effective IPP in rural contexts, to examine how IPP occurs in rural contexts, and to identify barriers and enablers. There was clear evidence of IPP in the rural settings where this study was conducted that was supported by many descriptions of collaborative and integrated practice. There were also instances where IPP doesn't and could happen. This uneven implementation of IPP within our study is consistent with the mixed results of IPP found in the literature (Bourke, Coffin, et al., 2010; D'Amour et al., 2005). In spite of the diversity and complexity of IPP in rural contexts there were a number of characteristics identified that significantly impacted on IPP. These were: the strong community connection and the

history of shared experience; health professionals with authority and opportunity to initiate processes that engage others; funding to support IPP; proximity and colocation; workload and workforce limitations; the presence of a shared philosophical position characterised by recognition of the benefits of IPP and valuing of and respect for others; and absence and fragmentation of health services.

Community connection and local knowledge plays a key role in rural health service provision. For instance, nurses have been described as the “agents of connectivity’...providing essential linkages between the system's many users, health professionals and service arrangements” (Senate Community Affairs References Committee, 2012, p. 12). Rural nurses in general have described ‘knowing’ their local community as a positive characteristic of their role and this enables them to facilitate links between local health providers and advise patients on available community resources (Cheek et al., 2002; Hegney & McCarthy, 2000). This was reinforced in our data, particularly with the hospital-based Discharge Planner who indicated that good local knowledge informed care plans as well as follow-up.

This highlights the importance of professional roles that span boundaries and facilitate communication across sectors. The Discharge Planner strengthened ties and communication between acute and community services. In addition, GPs in primary care were pivotal in engaging other health professionals in coordinated care for those patients with chronic conditions. Gittell (2002) describes these roles as “boundary spanners” – individuals who cross functional or organizational boundaries in order to integrate or link the work of other care providers.

GPs are also pivotal in integrating care across the primary and acute care settings in rural areas as they generally have existing connections with local hospitals (Laurence et al., 2004). Although referrals from GPs to other health professionals have been

supported by Commonwealth government rebates under the Enhanced Care/Chronic Care Programs (May et al., 2008), there is evidence to indicate that having the GP as the pivot or care coordinator is not without problems. Collaboration between GPs and other health care providers have been marred by imprecise and contradictory role definitions (Lockhart, 2006), mistrust and perceived threats to autonomy and independence (McDonald et al., 2012). In addition GPs have a history of referring patients to other health professionals in an inconsistent and uncoordinated manner (Battersby et al., 2007). A number of participants (including a medical officer) discussed barriers associated with the attitude of the medical profession to IPP. Some of the associated issues included lack of awareness of how other professions can contribute to decision making, difficulties in engaging doctors in the process as well as the perceptions of medicine's place in the health hierarchy. Additionally, our study also revealed some fragmentation of IPP mechanisms across sites and contexts. Spanning organizational boundaries in the delivery of health care confounds IPP as the boundaries between services, roles and professional groups are changing and this adds to uncertainty and the vulnerability of those involved (McDonald et al., 2012).

Funding arrangements for health care in rural areas impact significantly on the potential for IPP. Primary health services in Australia are delivered via a complex mix of private providers, state government-funded health services and fee-for-service arrangements supported by Commonwealth funding (May et al., 2008). Linkages between GPs and other health professionals have been promoted via government funding for Practice Nurses and Medicare rebates for referrals to AHPs under Enhanced Care/Chronic Care Programs (May et al., 2008; Wiese et al., 2011). Integration of primary health care services (such as MPSs) has also been funded by various decentralized initiatives funded by both state and Commonwealth governments (May et al., 2008). Our data

supports the evidence that collaboration between GPs and other health professionals has been boosted by government funding and additional Medicare rebates.

Co-location of health providers fosters collaboration, is likely to provide the greatest benefit to those suffering chronic illness (Canadian Collaborative Mental Health Initiative (CCMHI), 2006; May et al., 2008) and has been viewed as a key factor in sustaining IPP in a range of settings (Goss et al., 2010; May et al., 2008; Taylor et al., 2001). In our study, co-location was seen as particularly beneficial in facilitating informal discussion and review between practitioners and providing integrated services in a GP practice or MPS for those with chronic illness. Co-location of services alone, however, does not necessarily guarantee integration of services.

Rural health services face substantial challenges in recruiting and retaining adequate numbers of health professionals (Senate Community Affairs References Committee, 2012). Such workforce shortages mean that rural practitioners struggle with problems of inadequate locum coverage, limited professional support networks and excessive workloads (Australian Government Productivity Commission, 2005; Paliadelis et al., 2012). For some of our participants, workforce shortages and extended vacancies in particular disciplines made IPP challenging. Furthermore, heavy workloads can place undue stress on clinicians and hamper their readiness to engage in IPP. Yet in other instances, heavy workloads became a driver for clinicians to work interprofessionally. This supports the view that collaboration and teamwork in rural practice are influenced by workforce limitations and the “consequent need to work cooperatively to ‘get the job done’”(Kelley, 2007, p. 145).

The reduced number of health professionals means that clinicians are often working alone or as solo practitioners in a small team (Williams, 2012). Our study presents evidence of how professional isolation can be alleviated via teamwork and successful

IPP. Nursing staff, managers and AHPs consistently expressed how interprofessional teams offered professional support as well as provided them with a strong sense that they were not managing alone. Such findings support an earlier commentary that in comparison to urban teams, there appears to be greater respect for the work of different professions in rural and remote practice (Bourke, Humphreys, et al., 2010b).

Change is occurring in the ways rural professionals engage with each other and how their relationships inform models of care for people with varying health problems. Funding models are driving change through funding linked to joined-up care, recognising the need for transition and the potential for gaps across sectors. The difficulties confronting professionals and the IPP agenda are complex and often historically embedded.

To achieve optimum IPP outcomes there is a need for cultural change, trust, respect and sharing of information and communication across professionals. Mutual respect and shared values along with an knowledge of the roles and responsibilities of other care providers have been noted as key competencies for interprofessional working (Interprofessional Education Collaborative Expert Panel, 2011). These elements can be fostered by clinicians sharing information and learning from one another during practice as well as by interprofessional education efforts (Interprofessional Education Collaborative Expert Panel, 2011). As Gittell (2009) notes “Even timely, accurate information may not be heard or acted upon if the recipient does not respect the source” (p. 16).

Whilst the lack of sufficient numbers of professionals and professions available in or to rural areas impacts greatly on the capacity for IPP, there is also space for development and extension of models that involve sharing of work across disciplines. Perhaps, most significant is the need for recognition and support of pivotal roles and the processes

employed by these individuals to engage others and act as a central resource for patients and their families. Additionally there is some evidence that IPP can help combat the effects of professional isolation which addresses one of the issues associated with the challenges of recruitment and retention of rural health practitioners (Senate Community Affairs References Committee, 2012). Overall, it is evident that the processes underpinning the delivery of care are just as important as what care is delivered.

Study strengths and limitations

A strength of the study was that data were gathered across a range of professionals, settings and contexts. A number of references to Practice Nurses by participants highlighted that inclusion of Practice Nurses' perspective and understanding of how they contribute to rural IPP would have informed a more comprehensive understanding of contemporary primary rural health care. Further, a more holistic perspective would be gained by inclusion of patients' reports of their experiences with various health professionals.

Conclusion

Findings suggest that the nature of IPP in rural contexts is diverse and determined by a number of critical factors including rurality, connection to community, availability of staff, funding programs and specific interests and skills of staff. Most rural health professionals in our study appear motivated to engage in IPP. However, optimal outcomes of IPP may be hampered by adherence to historically embedded cultural behaviours, together with persistence of models of care that perpetuate rigid professional boundaries. This study goes some of the way towards unravelling the complexity of IPP in rural context, highlighting the strong motivating factors that drive IPP. However, it has also identified significant structural and relational barriers related to workload, workforce and service fragmentation. Further research is required to

explicate the mechanisms that drive successful IPP across a range of diverse rural contexts in order to inform the implementation of robust flexible strategies that will support sustainable models of rural IPP.

List of Abbreviations

AHP	Allied Health Practitioner
CNC	Clinical Nurse Consultant
GP	General Practitioner
HSM	Health Service Manager
IPP	Interprofessional practice
MO	Medical Officer
MPS	Multipurpose Service Centre
NSW	New South Wales
RN	Registered Nurse

Competing interests

The authors declare that they have no competing interests

Authors' contributions

VP, KM, IH, RM, PP, MG, GP were involved in the conception, design and acquisition of data, analysis and interpretation. VP & KM drafted the manuscript. IH, RM, PP, MG, GP revised paper for intellectual content.

Acknowledgements

We would like to acknowledge the invaluable work of Yvonne Ahrens (UNE) who contributed to the collection and the initial analysis of the data.

This study was funded by an Institute of Rural Clinical Services and Teaching grant (January, 2010).

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7.5 Paper 4: Workforce Shortages.

Full Citation:

McNeil, K., Mitchell, R., & Parker, V. (2014). The paradoxical effects of workforce shortages on rural interprofessional practice. *Scandinavian Journal of Caring Sciences*, Article first published online: 21 Mar 2014. doi: 10.1111/scs.12129

7.5.1 Statement of Contribution of Others

A copy of the relevant signed statement appears on the following unnumbered page.

Statement of Contribution of Others

We, **Rebecca Mitchell**, **Vicki Therese Parker** and **Karen McNeil**, attest that PhD candidate, **Karen McNeil**, contributed to the publication:

McNeil, K., Mitchell, R., & Parker, V. (2014). The paradoxical effects of workforce shortages on rural interprofessional practice. *Scandinavian Journal of Caring Sciences*, Article first published online: 21 Mar 2014. doi: 10.1111/scs.12129. (Also known as Paper 4)

in the following way:

- a primary and lead role in the overall conception, drafting and final revision of the publication; and
- a major role in the development and refinement of the research project's design and method.



Rebecca Mitchell (Co-Author)

Date: 4 August 2014



Vicki Therese Parker (Co-Author)

Date: 14 August 2014



Karen Anne McNeil (Candidate)

Date: 14 August 2014



Frank Agbola (Acting Assistant Dean Research Training (Faculty of Business and Law))

Date: 02/09/2014

7.5.2 Introduction

While IPP has been offered as a solution to address clinician shortages and health service challenges in rural settings (Australian Government, 2009; Canadian Health Services Research Foundation (CHSRF), 2007; Centre for the Advancement of Interprofessional Education (CAIPE), 2008), to our knowledge, this is the first study to examine how those workforce shortages impact on interprofessional working. This research was part of a broader project investigating the facilitators and enablers of IPP in a rural context. Semi-structured interviews were conducted with 22 rural clinicians across a range of settings, roles locations and professions. Findings indicated that clinicians engaged in IPP and flexible working as a means to manage the heavy workloads associated with the reduced number of available staff, yet long-term vacancies and intense work pressures acted to thwart effective IPP. Lack of knowledge of other health disciplines and entrenched professional hierarchies also functioned as barriers to IPP. Given sustained health workforce shortages, rural health service managers could facilitate improved interprofessional relationships through informal on-the-job learning and setting aside time for teams to reflect on IPP processes.

IPP has been shown to accrue benefits for patients and clinicians (Canadian Health Services Research Foundation (CHSRF), 2007; Goss et al., 2010; Long et al., 2006; Tieman et al., 2006), yet the environmental, institutional, professional and cultural context can nullify such potential benefits (Mitchell, Paliadelis, et al., 2013). IPP effectiveness in health care can be hindered by a range of factors including confusion about the collaborative process exhibited by some professions (McGrath, Holewa, & McGrath, 2006) and embedded professional identities and cultures which are resistant to change (Gittell, Godfrey, & Thistlethwaite, 2013).

The flexible role boundaries which are implicit in interprofessional working (Masterson, 2002), have been shown to improve information sharing and contribute to reductions in errors (Gittell, 2000). However, such flexibility can be problematic. Unclear role boundaries and overlapping roles can threaten professional identities and create conflict over claims to expertise (Cameron, 2011), as well as provoking tension within health care teams (Brown et al., 2000; Scholes & Vaughan, 2002). The resilient professional cultures that exist within health care are the product of uniprofessional education and socialisation processes which means that many clinicians are ignorant of the roles and

expertise of their fellow health colleagues; in turn, this can result in negative stereotyping and misperceptions of other health professions (Sharpe & Curran, 2011).

Flexible scopes of practice are characteristic of rural practice (Australian Government Productivity Commission, 2005; Rygh & Hjortdahl, 2007), while interprofessional team-based care can provide significant benefits in rural areas (Bourke et al., 2004). Workforce pressures and resource limitations, however, potentially impact on rural IPP. Compared to urban areas the supply of health professionals in rural areas is poor (Grobler et al., 2009), resulting in heavy workloads, long hours and inadequate locum coverage (Brems et al., 2006; Keane, Smith, Lincoln, & Fisher, 2011; Senate Community Affairs References Committee, 2012). As a result, rural clinicians need to adopt flexible approaches to working (Montour, Baumann, Blythe, & Hunsberger, 2009) and provide a wide range of services (Curran, Bornstein, Jong, & Fleet, 2004). Hence, workforce shortages are likely to influence rural practice (Paliadelis et al., 2012), compel rural health professionals to assume responsibilities outside their professional role (Hegney, McCarthy, Rogers-Clark, & Gorman, 2002; Keane et al., 2011), and facilitate flexibility and teamwork (Murray & Wronski, 2006). Nonetheless, current evidence does not elucidate in what ways workload impacts on IPP.

The aim of this paper is to examine how workforce shortages and the attendant pressures on clinicians impact on IPP in the rural context. Utilising a framework that draws on Ilgen et al.'s (2005) input-processes/mediator-output model and Pawson and Tilley's (1997) realistic evaluation approach, the overall project investigated the contextual factors, mechanisms and outcomes of rural IPP. The qualitative study was conducted in an Australian local health district which spans urban, regional, rural and remote areas. The interview guide was developed from the IPP literature and comprised structured and non-structured questions (Cavana et al., 2001). One-on-one interviews were conducted with participants who were purposively recruited across a range of settings, functions, locations and health professions (Mitchell, Paliadelis, et al., 2013). Analysis by the research team involved independent coding, highlighting of significant statements from the transcripts, condensing of codes into categories, and then grouping into themes which were populated with exemplars.

Our findings reveal that workforce pressures both facilitate and inhibit rural IPP, contingent on a number of barriers and enablers. Informants indicated general support

for IPP, but also considered that it was driven by necessity and the need to manage workforce restrictions. Heavy workload can motivate clinicians to share responsibilities and blur traditional boundaries; however, there is evidence that some clinicians still resist such flexibility. Role understanding and mutual respect between the different professions were highlighted as critical enablers of IPP. IPP was also viewed as a mechanism to facilitate interprofessional learning, which in turn improved the effectiveness of collaboration. However, role flexibility and the blurring of professional boundaries can only compensate for staff shortages to a limited extent. For example, a long term physiotherapy vacancy could not be covered by other professions due to the absence of specific skills. In addition, shortages adversely affected the skill mix required for effective IPP to the point where one interprofessional clinic had to be disbanded. Furthermore, intense workload and the need to cover a broad geographic area prevented some clinicians engaging in IPP as they were unable attend team meetings or effectively coordinate care with other practitioners. One informant also suggested that the fatigue and stress consequent to workload pressures contributed to resistance to IPP by some staff members. Further, intense workloads and the resultant stress could point to why some practitioners were resistant to IPP. There is also the risk that extensive role overlap could provoke threats to professional identities and generate conflict within teams (McNeil et al., 2013). In sum, our analysis reveals that workload demand on rural clinicians has a paradoxical effect on IPP.

IPP can only be effective if health professionals are willing to engage in the process (San Martín-Rodríguez et al., 2005), which affirms the importance of managers understanding the context and mechanisms of interprofessional teams (Proenca, 2007) as well as the factors that influence their effectiveness (Doran et al., 2002). Given continuing rural health workforce shortages (Bourke, Coffin, et al., 2010), health service managers should focus on the factors that facilitate IPP; namely, role understanding and mutual respect between the different professions. As locum coverage can be problematic (Senate Community Affairs References Committee, 2012), and continuing professional development is largely conducted within discipline-specific silos, informal workplace learning offers the most effective means to enhance these skills within teams (Nisbet et al., 2013).

This paper contributes to the thesis by reinforcing the importance of professional identities in interprofessional working. Role overlap and sharing responsibilities were

identified as a key factors in overcoming resourcing challenges, yet this was not always effective due to a lack of role understanding consequent to the divergent education and socialisation processes that exist within health care. These issues associated with professional identity have been addressed in detail in *Paper 1: Professional Identity Threat*. The paper further affirms the critical nature of context where rurality and workforce shortages can in some circumstances act together to foster IPP. However, paradoxically, intense workloads and long term vacancies that can exist in the rural health care context can thwart interprofessional working. Both *Paper 3* and *Paper 4* reaffirm the importance of each of the health professions developing an understanding of the roles, skills and expertise of their colleagues from other disciplines in order to improve IPP effectiveness.

Paper 4's contribution to the IPP literature has been noted by the reviewers of the manuscript:

This work falls within the scope of SJCS and contributes new insights into rural interprofessional practice. The manuscript is well written and well structured” and “The article is touching internationally interesting topic both on workforce issues and on interprofessional practice.

7.5.3 Publication

THE PARADOXICAL EFFECTS OF WORKFORCE SHORTAGES ON RURAL INTERPROFESSIONAL PRACTICE.

ABSTRACT

Rationale & Aim

While interprofessional practice has been promoted as a solution to the challenges besetting rural health services, current evidence does not offer a clear explanation as to why it is effective in some domains and yet is not successful in others. At the same time, rural clinicians are frequently faced with major workforce pressures and this has a significant influence on professional practice. The aim of this study was to explore how these pressures impact on rural interprofessional practice.

Method

This study is part of a larger project investigating factors that enhance and detract from effective interprofessional working. We utilised a modified realistic evaluation approach to analyse the context, mechanisms and outcomes of rural interprofessional practice. Approval for this study was granted by an accredited research ethics committee. Semi-structured interviews were conducted with 22 rural clinicians who were purposively recruited from a range of settings, roles, locations and professions.

Findings & Discussion

We found that clinicians often invested in interprofessional practice because of the need to manage intense workloads and this necessitated sharing of responsibilities across disciplines and blurring of role boundaries. Paradoxically, participants noted that workload pressures hampered interprofessional working if there were long term skill shortages. Sharing workload and responsibility is an important motivator for rural

practitioners to engage in interprofessional practice; however this driver is only effective under circumstances where there are sufficient resources to facilitate collaboration. In the context of intransient resource challenges, rural health service managers would be best to focus on enabling IPP through facilitating role understanding and respect between clinicians. This is most feasible via informal workplace learning and allowing time for teams to reflect on collaborative processes.

Key Words

Interprofessional practice, rural healthcare, teams, collaboration, workload, flexibility.

INTRODUCTION

Interprofessional practice (IPP)

Healthcare organisations are increasingly engaging in teamwork and collaborative practice to more effectively manage complex healthcare issues (Chesters & Burley, 2011; Lemieux-Charles & McGuire, 2006; San Martín-Rodríguez et al., 2005). Interprofessional practice has been defined as collaboration between health practitioners from various backgrounds and specialties working together with patients and their carers so the most appropriate, prompt and integrated care is delivered with as few obstacles as possible (Canadian Health Services Research Foundation (CHSRF), 2007; Centre for the Advancement of Interprofessional Education (CAIPE), 2008; World Health Organization (WHO), 2010). This has been promoted as an ideal framework for improving the effectiveness of healthcare teams and particularly for those operating in rural and remote areas (National Rural Health Alliance, 2008; Rygh & Hjortdahl, 2007). However the success of IPP is subject to a range of environmental, institutional and professional contextual factors (Mitchell, Paliadelis, et al., 2013) including the norms,

policies and resources of professional and healthcare organisations (Hall, 2005; Mitchell et al., 2011; Reeves et al., 2007).

IPP has been linked to a range of benefits including greater innovation and enhanced patient outcomes, reduced health care costs and waiting times and improved resource utilisation (Canadian Health Services Research Foundation (CHSRF), 2007; Long et al., 2006; Tieman et al., 2006). For clinicians, IPP results in improvements in staff satisfaction and retention (Canadian Health Services Research Foundation (CHSRF), 2007; Goss et al., 2010) and can overcome some of the challenges arising from workforce shortages in rural settings (Senate Community Affairs References Committee, 2012). However, simply forming a team of different health practitioners does not guarantee productive collaboration (Klinar et al., 2013; Proenca, 2007). The effectiveness of IPP can be hindered by information withholding, misunderstandings and affective conflict (Adams, 2004; Caldwell & Atwal, 2003; McNair, 2005) or by clinicians who view collaborative team meetings as confusing to the decision making process (McGrath et al., 2006). Moreover, interprofessional teams in healthcare are typically more complex and variable than teams in other domains (Andreatta, 2010) and are challenged by “communication and relationship patterns [which] are deeply embedded in professional identities and organisational cultures, and not easily changed” (Gittell et al., 2013, p. 1). Such conflicting findings reinforce the positive potential of interprofessional working and the need to further examine those factors which enhance and detract from effective IPP.

Role overlap and flexibility

Implicit in IPP is the need for practitioners to share specialised knowledge and authority to allow blurring of professional boundaries (Masterson, 2002). Innovation in job design, flexibility in role boundaries and broader scopes of practice for health clinicians

is characteristic of rural practice (Australian Government Productivity Commission, 2005; Rygh & Hjortdahl, 2007). Flexible health roles contribute to enhanced communication and relationships and reduction in errors (Gittell, 2000) while role expansion increases satisfaction for some clinicians (Duckett & Wilcox, 2011); however such flexibility is not without challenges. Indistinct role boundaries and overlapping scopes of practice can threaten professional identities and claims to expert knowledge (Cameron, 2011) and result in confusion and tension within health care teams (Brown et al., 2000; Scholes & Vaughan, 2002). While practitioners are willing to accept some overlap in their roles, genericism or duplication is likely to evoke territoriality and concerns about professional identity and role security (Booth & Hewison, 2002).

Professional identities and role understanding

The enduring cultures and professional identities within health care help to explain why the evidence on the effectiveness of interprofessional teams is mixed (McNeil et al., 2013). Interprofessional approaches necessitate health professionals building relationships where there is sharing of goals and knowledge as well as mutual respect (Gittell et al., 2013; Johannessen & Steihaug, 2013; Zwarenstein et al., 2009). However, segregation during the education process results in few health professionals being adequately conversant about the scopes of practice and skills of other disciplines (Sharpe & Curran, 2011). Moreover, divergent education and socialisation processes contribute to different communication patterns, professional schema and patient care recommendations (Andreatta, 2010; Hall, 2005). Entrenched status hierarchies potentially frustrate the achievement of respectful relationships between the professions (Havens, Vasey, Gittell, & Lin, 2010) and lack of interprofessional knowledge can engender negative stereotyping of other clinicians (Sharpe & Curran, 2011). This led us to further examine factors that enhance IPP effectiveness. In particular we focused on

IPP in rural settings, where collaborative team-based care offers significant benefits (Bourke et al., 2004) but where there are greater workforce challenges and resource limitations than in urban areas.

Rural context

Most countries face the problem of maldistribution of health care professionals between metropolitan and rural settings. The supply of health professionals as a ratio of practitioner to population is poor in many rural and regional areas (Grobler et al., 2009). The scarcity of rural clinicians is attributed, inter alia, to heavy workload, on-call responsibilities, long hours and lack of locum coverage (Brems et al., 2006; Keane et al., 2011; Senate Community Affairs References Committee, 2012). Due to limited resources, rural clinicians often become generalists in their field (Chipp et al., 2011) requiring a broader knowledge base and a flexible approach to working (Montour et al., 2009). In addition, they are expected to carry greater clinical responsibility and provide a wider range of services compared to urban practitioners (Curran, Bornstein, Jong, & Fleet, 2004). Previous research suggests that workforce shortages may impact on the way in which rural practitioners work (Paliadelis et al., 2012) and place increased pressure on clinicians to take on responsibilities typically outside their professional role (Hegney et al., 2002; Keane et al., 2011). However, to date, there has been little exploration of workforce shortages as a factor affecting IPP.

Workforce pressures are reported to result in flexible, team-oriented approaches in rural and remote practice (Murray & Wronski, 2006). In rural practice, collaboration between health professionals is partly influenced by workforce shortages and the “consequent need to work cooperatively to ‘get the job done’” (Kelley, 2007, p.145) and may be more realisable within smaller communities (Clancy, Gressnes, & Svensson, 2013). Thus practitioners need to fulfil multiple roles and have good working relationships

with other providers and the community generally (Hegney, 2007; Kelley, 2007). Variable roles necessitate flexibility in role boundaries and overlapping knowledge and skills (Andreatta, 2010; Australian Government Productivity Commission, 2005). While the literature highlights that flexibility and role overlap are often consequent to the workload pressures of rural practice, current evidence does not elucidate the interaction between clinician workload and effective IPP. Hence, our research sheds light on how workload impacts on IPP.

Aim

This study is part of a larger project that investigated the mechanisms through which rural IPP occurs and the environmental factors that enhance and detract from effective interprofessional working within rural healthcare contexts (Mitchell, Paliadelis, et al., 2013). The aim of this paper is to examine how the mechanisms associated with workforce shortages and consequent workload demands affect rural IPP.

METHOD

Research Design

Qualitative studies have been identified as important in revealing the interactive processes that contribute to effective interprofessional collaboration (Reeves, 2010; Zwarenstein & Reeves, 2006). The overall research project adopted a modified realistic evaluation approach (Pawson & Tilley, 1997) that included elements of the input-processes/mediator-output model (Ilgen et al., 2005). This approach facilitates analysis of contextual influences, participant perceptions of mechanisms that drive or inhibit IPP, as well as expected and observed outcomes (Mitchell, Paliadelis, et al., 2013). Similar frameworks have been employed elsewhere in interprofessional reviews and empirical research (Gaboury et al., 2009; Lemieux-Charles & McGuire, 2006).

Such explication of mechanisms, context and outcomes enables other practitioners and researchers to potentially translate the research in future health service interventions taking into account the contextual differences (Howe, Leishman, & MacDonald, 2009).

Utilising this framework, we undertook a review of the rural interprofessional literature to identify a range of factors related to interprofessional work to develop the interview guide. These included contextual factors such as interprofessional education and training (Centre for the Advancement of Interprofessional Education (CAIPE), 2008; Hammick et al., 2007) and the social and economic context (Brems et al., 2006; McNair et al., 2005) as well as individual and relational factors such as professional boundaries and role clarity (Atwal & Caldwell, 2002; Bailey et al., 2006; Coe & Gould, 2008). Each of the factors considered are summarised in Table 1 and have been detailed in an earlier paper (Mitchell, Paliadelis, et al., 2013).

Table 1: Factors related to interprofessional collaboration.

Individual & Interpersonal	Professional & Organisational	Institutional & Environmental
Individual role clarity, boundaries & responsibilities	Professional organisation, norms, policies & resources	Federal, State & regional policies, resourcing & structures
Individual approach to professional boundaries & interprofessional work	Healthcare organisations, norms, policies & resources	Social & economic context
Individual & shared accountability	Organisational leadership	Interprofessional education & training
Team processes & dynamics including communication & decision-making	Organisational information & communication technology & practices	Integration of interprofessional approaches at institutional levels
	Integration of interprofessional approaches at organisational level	Geographic proximity including models of co-location
	Shared interprofessional protocols & tools	

Source: Mitchell, Paliadelis, et al. (2013)

The larger study was conducted across a range of sites within an Australian local health district (LHD) employing over 15,000 staff. This LHD spans a major urban centre, several regional hubs, rural towns and small and remote communities. The health district faces challenges in servicing the health needs of a very widespread and diverse population which is hampered by the difficulties in recruiting and retaining adequate numbers of health professionals in rural and remote regions (LHD Strategic Plan, 2012). Triangulation of data was achieved by recruiting participants from different hierarchical levels, sectors, locations and professions within the LHD. The inclusion of both acute and community care health contexts acknowledged the importance of integrating care across sectors for those with chronic conditions (Laurence et al., 2004; McDonald et al., 2012) and that models of IPP can vary across settings (Leathard, 2003b). The recruitment of policy makers, managers and clinicians recognised the critical nature of each of these roles in effective IPP (Nugus et al., 2010) and the inclusion of a range of professions reflected the impact of professional cultures, norms and identity in interprofessional work (Hall, 2005; McNeil et al., 2013).

Ethics

The study was approved by the LHD's accredited research ethics committee. Participation in this study was entirely voluntary and only those who gave their informed written consent were included in the project. Participants were advised that they could withdraw from the project at any time without needing to provide a reason to the researchers. Code numbers were used in place of names throughout the research process thus maintaining confidentiality of participants' information. Given the close-knit nature of rural communities limited demographic information about the interviewees has been disclosed to protect the anonymity of informants.

Participants

To overcome some of the challenges associated with recruitment in rural health services research, we employed a purposive sampling approach aiming to include participants from a range of settings, functions, locations and health professions (Mitchell, Paliadelis, et al., 2013). Healthcare professionals providing or managing rural healthcare services were included in the study; clinicians providing services to only urban centres within the LHD were excluded. The 22 interviewees included: clinical consultants with oversight of rural areas but located in the urban tertiary referral hospital; area managers and policy makers located at rural referral hospitals; managers and clinicians located at district hospitals, community hospitals, multipurpose service centres, community health centres or in private practice in rural areas. The participants were based in various settings (*area management, acute care and community health*), and represented a range of roles (*clinicians, management and policy makers*) and locations (*community health centres, hospitals, individual practices, and multipurpose services*). The range of health professions included medicine, nursing, social work, speech pathology and occupational therapy. The latter three professions have been categorised as Allied Health Professionals (AHPs) to protect the identity of the participants. Five participants [notably the AHPs and Medical Officers (MOs)] worked across more than one setting. The number of informants in each category is detailed in Table 2.

The participants were recruited by the university-based research team members and thus independent from the LHD.

Interviews

Interviews comprising structured and non-structured questions (Cavana et al., 2001) were conducted over a period of 12 months during 2011 and 2012. The interview guide was developed from the interprofessional collaboration literature as described earlier.

Interviews with managers and policy makers focussed on contextual, institutional and professional influences while interviews with clinicians focussed on their perceptions of the context and process of rural IPP (Mitchell, Paliadelis, et al., 2013). Participants were asked about: the benefits of rural IPP; their form of engagement in IPP; the processes of IPP; the circumstances under which IPP was most effective; the barriers to IPP working in their context of practice. One-on-one interviews were conducted by three university-based members of the research team. Interviews were of between 20 minutes and 90 minutes duration and were conducted either by telephone or in the privacy of an office or meeting room. The interviews were recorded and transcribed by an external confidential transcription service. Informants were given the option of reviewing and editing their transcript.

Table 2: Study sample details

Health Profession/Role	Number	Setting	Number
Health Service Manager ¹	7	Area Office (5 at a rural referral hospital; 2 at an urban tertiary referral hospital)	7
Medical Officer	3	Hospital	9
Nurse Manager	2	Community Health	9
Registered Nurse	5	Multipurpose Service	1
Allied Health Practitioner	3	General Practice	2
Clinical Nurse Consultant	2		
TOTAL	22	TOTAL	28²

¹Health Service Managers had professional backgrounds in either nursing or allied health

²Four participants worked across two settings, one participant worked in three settings.

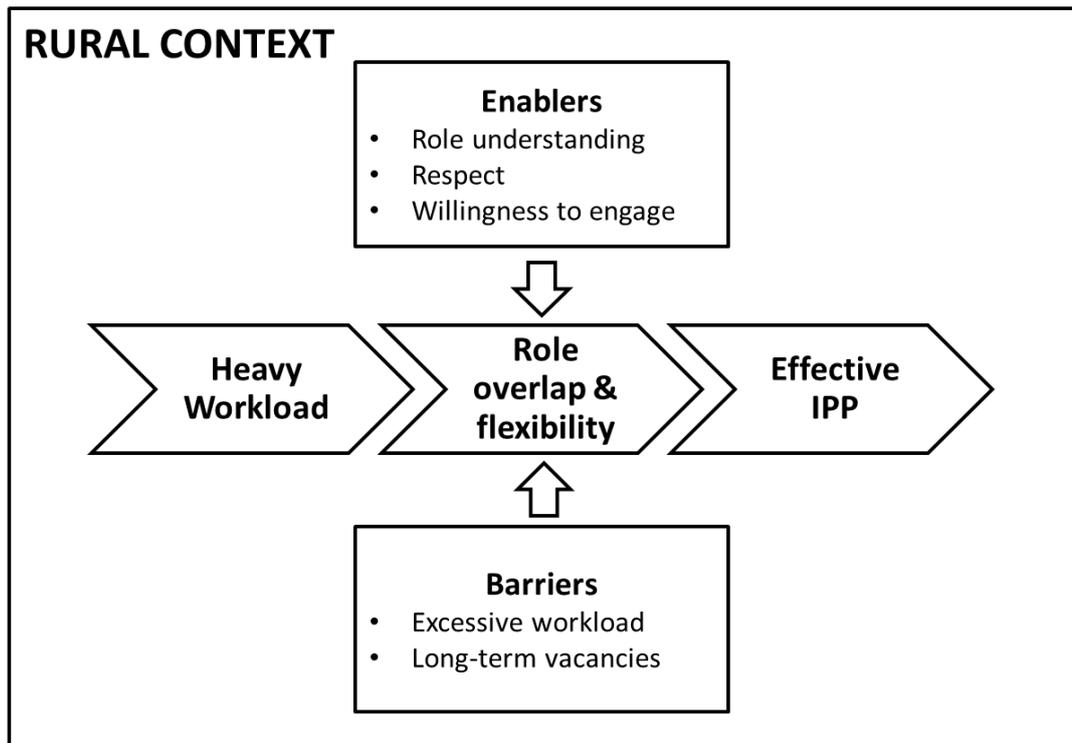
Analysis

The eight member research team (comprising both university and LHD-based researchers) conducted the analysis in five steps. First, all team members read the transcripts to gain an overall impression of the material. Second, guided by the modified realistic evaluation approach, they discussed and agreed upon codes and grouped these under the following headings: contexts (*who, what, where*), mechanisms/processes (*how, why, why not*) and outcomes to provide a framework for further analysis. Third, using this framework, six members of the research team independently reread the transcripts, coded the data and highlighted significant statements. This process of independent coding provided assurance that the analysis was trustworthy (Krefting, 1991). Two researchers then synthesised these independent analyses by condensing the codes into categories which were then grouped into themes. Finally, themes were then developed through an iterative process of reading, reflecting and writing to produce a qualitative description (Sandelowski & Leeman, 2012) populated with exemplars which most effectively represented the data and conveyed meaning. This textual representation was validated by the full research team.

FINDINGS

In this section we describe how rural clinicians interpret and engage in IPP and collaborate with other health professionals. As depicted in Figure 1, we identify that workload pressures both facilitate and impede effective IPP, contingent on a number of barriers and enablers including role overlap, flexibility and role understanding.

Figure 1: How workload impacts on rural IPP



Workload as a driver of IPP

There was general recognition that IPP is essential to meet the complex needs of patients:

...there are a lot of benefits from different professions working together...you're getting a more rounded view of the patient and what the issues are [Nurse Manager (NM) 1].

However, participants indicated that IPP often exists out of necessity and is driven largely by workload considerations rather than specific policy or management direction.

The following participant conceded that they would not be able to continue in their role without the team support:

... I guess we probably don't do as much active intentional interprofessional ... But I guess that's probably to do with workloads and those kinds of issues. But there's definitely a lot of interaction between

different professions in our team but I don't think I could still be in this position without that. It definitely has helped me. (AHP 2).

Role overlap and flexibility

In rural practice, heavy workload leads to pressure to share responsibilities across professional boundaries driving blurring of roles which in turn enhances IPP. There was evidence of overlapping and flexible roles among AHPs, particularly between Occupational Therapists (OTs) and Physiotherapists. Clinicians generally viewed this flexibility as a positive aspect of rural practice:

...inter-professionally we all overlap a little bit, so often you actually go and...see clients together and work together with clients as well, so it's reasonably flexible like that. It's good. (AHP 1).

Similar overlap also occurred between AHPs and community nurses helping to overcome the challenge of covering a broad geographic area. One clinician acknowledged the invaluable support of community nurses:

...the community nurses are fantastic up there. They do a lot of equipment and things for me, if I just can't get there to do all the time... I can't manage my caseload and take on that many clients and that much paperwork and keep things consistent across all the areas I cover...they'll go and see someone and call me and say, well what do you think? Or, do you need to go and see them, or can you see them next time? So from that point of view it's fantastic (AHP 1).

Role flexibility occurs because nurses are able to work within a broader scope of practice that overlaps with other disciplines. This is particularly important in light of workload levels or in the absence of AHPs:

...And there may be things that the nurse might be able to, if it's something, like ordering a piece of equipment, the nurse might be able to do that there and then, as opposed to getting the occupational therapist in who has a large waiting list that we, or we don't have [an OT]. So therefore the client's not waiting for allied health staff member to come in. (HSM 2).

Nonetheless role flexibility and role boundaries are open to individual interpretation:

...you have those people that will work within their boundaries and then you will have the other extreme of people that will go beyond their boundaries... Which can be a problem (HSM 2).

Thus some clinicians still resist role flexibility and this impedes effective interprofessional working.

Role understanding

An AHP highlighted how the team drew on each other's strengths and knowledge and that a good understanding of each other's roles is critical in rural IPP:

There's little bits that overlap amongst us all as well and I think because we do know each other quite well and there's only one of each of us, it's quite consistent in terms of professional relationships and knowing who does what and who's got what strengths and what knowledge (AHP 1).

Participants spoke about the need to respect and understand the different skills and knowledge within the team and that a lack of knowledge may be the result of divergent education processes. For example:

...so many different professions can have an input into people's situations. So it's probably more awareness-raising of what other professionals can contribute (AHP 3).

...I think that if we still educate people in silos...then you will still have this kind of arrogance between professions that need not be there...But I do think that if we can get the students to have some perception of what the roles are of these other people and respect them and then that's heading in the right direction (MO 2)

Notably, there was evidence that IPP can facilitate interprofessional learning and thus an appreciation of the perspectives other health professionals:

...where I've had more to do with Allied Health, it's taken me a while but I realise that they've actually got a totally different mindset or they're taught a different way of looking at patients than nurses do, so I think that's a really good thing to bring to a case discussion about clients (NM 1)

The limits of role overlap and flexibility

Role flexibility and the subsequent blurring of role boundaries work well to overcome some of the challenges associated with rural practice, particularly in the case of absences and workforce shortages. However, there is a limit to which such flexibility can compensate for staff shortages and skill mix problems:

...the biggest probably challenge in rural areas is when there are vacancies. We had no physiotherapist for a good 12 to 18 months at one point, so that certainly affects the outcomes...I think that's the biggest barrier, if there isn't someone in that position at the time, there's no one else to pick up that load, or with those specific clinical skills. There's blurring on the edge of the boundaries of what we all do but there's still some very specific skills that we all have and all need to be here for basically (AHP 1).

While participants saw great potential from IPP in rural settings, some reinforced how workforce shortages and intense workloads limited the ability of practitioners to effectively adopt IPP:

...I see benefits from interprofessional practice in any setting. And I guess you could say even more so in rural settings because of the scarcity of numbers but I think the reality is that makes interprofessional practice difficult because there's not enough say, GPs [General Practitioners] or nurses, practice nurses or allied health people to really get a good mix of people together to do things together (HSM 5).

This problem was exemplified when an interprofessional model of care was disbanded due to workforce shortages and difficulties in recruiting adequate staff:

We used to have a child development clinic that has fallen by the wayside with workload and change of staff and recruiting vacant positions and things like that. So hopefully it will come back in time but it was just for...the first three years of life, if the parent was concerned, to bring them in and be able to see three allied health staff and a community child and family health nurse in the one room and have that kind of one-stop shop situation. (AHP 2).

Participants noted difficulties associated with the workload, recruitment and retention of allied health staff and how this negatively impacted on IPP. For example, professionals from other health disciplines conceded that rural allied health staff often service broad geographic areas which restricts their availability to particular centres, prevents them from being involved in team meetings and contributes to fatigue. Heavy workloads present a significant barrier effective IPP:

...I think the barrier is obviously availability of clinicians. Most of the clinicians on staff are extremely busy...because we have waiting lists and different prioritisation schedules... it's very hard to pick up the same patient at the same time (AHP 2).

Whilst the literature points to the potential for IPP to be limited by traditional discipline boundaries and structural impediments (Bourke, Coffin, et al., 2010), one participant concluded that intense workload and fatigue may cement entrenched attitudes to flexible working:

...I think more often than not the workload and with that tiredness comes an inability to be able to see the forest for the trees (HSM 3).

Ultimately, IPP is effective only if clinicians are willing and able to engage in the process, understand their roles and responsibilities as well as other team members' skills and knowledge – and this can take time:

It really comes down to the professionals themselves and their willingness to actually look at interprofessional practice, where people can feel free to say and critique what's happening with that patient... And there's some personalities that just don't really feel comfortable in terms of engaging in that model. It's around defining roles and responsibilities really. And so you know it takes time to do that and knowing each other's kind of skills, that kind of thing. (MO 3).

DISCUSSION

This study set out to examine the role of workload shortages on IPP. Our findings indicate that workload demand has a paradoxical effect by both driving and impeding IPP. Workload pressures associated with rural practice facilitated IPP by motivating

clinicians to adopt more flexible approaches that entailed sharing responsibilities across traditional professional divides and blurring disciplinary role boundaries. Conversely excessive workloads also impeded IPP where there were long term vacancies or the absence of specific clinical skills or where team members were unable to attend meetings.

Interprofessional health care teams and the subsequent need for flexible scopes of practice for health practitioners have been advocated as an antidote to significant workforce shortages in rural areas. Given the evidence that IPP is not always successful (Atwal & Caldwell, 2005; Bourke, Coffin, et al., 2010; D'Amour et al., 2005), there have been calls to more closely examine the nature and mechanisms of collaboration between health professionals (Reeves, 2010). What emerges from our study is that rural clinicians invest in IPP because they derive benefits in terms of being better able to manage their workloads and provide mutual support to colleagues. While there was consensus that IPP is important in rural practice to achieve the best outcomes for patients, clinicians viewed interprofessional teamwork and flexible role boundaries as a means to share workload, manage absences and overcome some of the workforce limitations associated with rural practice. It appears that IPP in rural contexts is driven less by policy and management direction and more by necessity and individual recognition of its benefits to clinicians and patients.

We found many examples of the professions managing overlapping roles. As has been observed in other settings, joint visits and proximity foster effective overlap and IPP (Nancarrow, 2004a). Similar to previous research (Andreatta, 2010; Nancarrow, 2004a), there was significant overlap between occupational therapists and physiotherapists, often compensating for staff shortages. Additionally we found overlap between the roles

of AHPs and community nursing staff to be a means for covering broad geographic areas.

Conversely, overlapping roles and flexible boundaries can be problematic. Flexible scopes of practice may place undue stress on clinicians if they are inadequately supported or operating beyond their skill level. Role boundaries are open to individual interpretation and difficulties occur when practitioners operate at extreme ends of the spectrum: limiting or extending their scopes of practice well beyond the norm. While there is flexibility, overlapping of roles is limited as each health profession has specific clinical skills and thus patient outcomes are adversely affected in the long term absence of a particular profession. Extended overlap of professional scopes of practice or genericism can raise concerns (Cameron, 2011) potentially provoking professional identity threat conflict within teams (McNeil et al., 2013).

Although workload pressures help to facilitate IPP, they can also act to impede effective IPP. A number of practitioners considered the potential for IPP to be severely limited by workforce shortages in rural areas. The limited numbers of AHPs servicing broad geographic areas necessarily restricts their potential to successfully engage in IPP teams. A long term physiotherapist vacancy was particularly noted as an impediment to effective IPP as there was no clinician available to undertake those specific skills. Although the blurring of roles compensated for the vacancy to a limited extent, this was not a viable long term solution to the lack of needed skills. High workload levels along with the consequent fatigue and stress might explain why some practitioners were wary of IPP. In essence, our evidence suggests that workload pressures and the subsequent blurring of roles and flexibility can enable IPP in rural settings but there is limit; if pushed too far or if there are insufficient skills within the team, then IPP is less likely to be effective.

Limitations

Our study overcomes some of the challenges of participant recruitment in rural health services research by adopting a purposive sampling design covering a range of settings, functions, locations and health professions (Mitchell, Paliadelis, et al., 2013). A strength of our study was the representation of a range of diverse settings which is typical of rural health care contexts, both in Australia and in many other countries. However, the unique nature of many small towns and the services they provide means that much more work needs to be done to understand the dynamics of IPP in context and over time. A more in-depth analysis of a number of single health care contexts may have helped us to develop a more comprehensive understanding of how sharing of workloads and blurring of professional boundaries plays out within teams. Moreover, analysis of diary records would reveal how professional relationships and interactions enable workload sharing and role blurring and foster IPP over time. The advent of new health professions and generic health workers raises questions concerning the long-term implications of sharing and blurring of roles and responsibilities. In particular, it would be important to examine whether professional identities are strengthened or threatened by this evolution of roles within health care teams.

Practice Implications

By definition collaboration is voluntary. So while government policy may direct that health care organisations implement structures to support interprofessional collaboration, they can only be effective if clinicians are willing and able to actively engage in the process (San Martín-Rodríguez et al., 2005). As has been noted earlier, IPP can produce undesired consequences (Mitchell et al., 2010) which indicates the importance of managers paying heed to the context and mechanisms of interprofessional

teams (Proenca, 2007) and developing an understanding of the factors that contribute to effective interactions within interprofessional teams (Doran et al., 2002).

Given the significant and long term nature of recruitment and retention difficulties in rural health services (Bourke, Coffin, et al., 2010), local health service managers would be best to focus on the enablers of IPP, namely fostering role understanding, respect between the different health professions in their team and thus building on clinicians' willingness to engage in IPP. Moreover, the ageing of the rural health workforce (Senate Community Affairs References Committee, 2012) means that a significant proportion would not have been exposed to interprofessional education at undergraduate level. This training gap is exacerbated by the fact that continuing professional development is still largely undertaken within discipline-specific silos (Nisbet et al., 2013). Given the resourcing challenges and lack of locum coverage for clinicians to attend external training (Senate Community Affairs References Committee, 2012), informal workplace learning offers the most realisable and cost effective means to develop role understanding between team members (Nisbet et al., 2013).

Indeed informal learning comprises the bulk of workplace learning and managers could focus on developing their team members' "...ability to know what, when and how to interact with other health professionals in order to fully utilize the expertise within the team" (Nisbet et al., 2013, p. 469). Further, they can enhance understanding of the roles and values of other health professions by setting aside time for their team to reflect on collaborative processes (Nisbet et al., 2013; Øvretveit, 1997). Such learning should also be extended to locums to ensure that interprofessional team efforts are not derailed in the absence of permanent team members. Most importantly however, managers need to be supported and educated in the skill of facilitating workplace interprofessional

learning as this has garnered little attention compared to other leadership competencies (Eraut, 2004).

Our findings strongly suggests that rural context facilitates IPP and provides direct benefits for individuals and teams of practitioners in terms of better managing workloads and so improving patient care. What is notable is that workforce shortages have long been identified as negative factors in rural health care, but even though there are negative consequences, shortages may also drive effective IPP. However, there are circumstances where workforce shortages and associated pressures are damaging to IPP which suggests that while IPP is a useful approach to overcoming the ubiquitous shortages in rural contexts, its utility is limited to circumstances where there are sufficient resources to foster collaboration. Rurality can foster IPP but there is a point at which workforce shortages start to inhibit IPP causing stress as well potential threats to professional identity. Nonetheless, our study offers hope that IPP can assist in overcoming some of the problems associated with rural workforce limitations.

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8 Additional Papers

8.1 Additional Paper 1: Bridging Professional Boundaries through Superordinate Identity and Transformational Leadership

Full Citation: Mitchell, R., McNeil, K., & Boyle, B. (2013). *Bridging professional boundaries through superordinate identity and transformational leadership*. Paper presented at the 27th Australian and New Zealand Academy of Management (ANZAM) Conference: Managing on the Edge, Hobart, Tasmania.⁵

ABSTRACT

Interprofessional approaches in health care have been linked to more effective service provision, better short- and long-term patient outcomes, and enhanced problem-solving, however, there is evidence that professionals tend to operate in uni-professional silos and that attempts to collaborate across professional borders often engender affective conflict and are consequently unsuccessful. This paper utilises social identity theory and social categorisation processes to understand the mechanisms through which composition influences the emergence of affective conflict in an interprofessional team context. It explores the role of social identity salience to move past the current descriptive reports and examine the explanatory relationships underpinning interprofessional collaboration, and investigates the role of transformational leadership in minimising the negative consequences of such collaboration through the strengthening of superordinate identity. This analysis generates a series of propositions regarding the effects of interprofessional composition on collaboration, which will inform future research and provide a more comprehensive picture about the implications of composition and team dynamics for inter-professional innovation and effectiveness.

⁵ This manuscript will be changed prior to submission to a journal for publication.

Interprofessional collaboration involves individuals from different professions working together to deliver integrated and complementary services and engage in comprehensive and informed decision-making (Canadian Collaborative Mental Health Initiative (CCMHI), 2006). The advantages of interprofessional approaches have long been recognized (Basset & Bryson, 1989; Younghusband, 1959), however in response to recent inquiries and reports, there is increasing pressure on health and social care professionals to work together collaboratively (Braithwaite & Travaglia, 2005; Garling, 2008).

Interprofessional collaboration has been linked to significantly improved customer and patient outcomes, employee outcomes and organisational outcomes when compared to traditional models. In terms of organisational outcomes, interprofessional teamwork has been linked to innovation, avoidance of duplication, less fragmentation in service delivery, and reduction in health care costs associated with fewer out-of-hours consultations and hospital visits, reduced hospital days, and reduced admission to Emergency Department (Dietrich et al., 2004; Tieman et al., 2006). In terms of patient outcomes, interprofessional collaboration has been linked to clinical improvement, reduction in medications per patients, and improved short- and long-term patient outcomes (Arehart-Treichel, 2003; Canadian Health Services Research Foundation (CHSRF), 2007; Tieman et al., 2006). For staff, interprofessional teamwork leads to increased job satisfaction and reduced turnover (Boone, Minore, Katt, & Kinch, 1997; Canadian Health Services Research Foundation (CHSRF), 2007).

However, despite these benefits, a significant number of studies indicate a negative or no relationship between interprofessional composition and positive outcomes (Zwarenstein & Reeves, 2000). Research indicates that collaboration across professions or other job-related boundaries leads to negative emotions and conflict

behaviour including hostility and information withholding, which lead, in turn, to poor team outcomes (Adams, 2004; Caldwell & Atwal, 2003; Jehn, Chadwick, & Thatcher, 1997; McNair, 2005). Inconsistent findings related to interprofessional performance indicate that our understanding of the factors that lead to effective collaboration across professional boundaries remains limited. Reviews have also shown that, despite enthusiasm and commitment, interprofessional teams often fail because of poor expertise in the management of such teams, which has further emphasised the need for research to better understand factors influencing their performance (Tieman et al., 2006).

In response to this research gap, this paper explores the role of social identity theory and social categorisation in explaining negative affective and behavioural responses to interaction across professional boundaries, and investigates the role of transformational leadership in minimising both the emergence and consequences of interprofessional hostility and conflict. We explore the role of professional identity salience, superordinate identity and transformational leadership in the emergence of affective conflict in interprofessional teams. Affective conflict is defined in terms of both an affective component incorporating feelings of hostility, friction and tension, and also a behavioural component, reflecting, for example, the level of ‘heated’ interaction (Amason, 1996; Medina, Munduate, Dorado, Martínez, & Guerra, 2005).

Our study is located at the nexus of three key trends in organisational research, the effective management across professional boundaries (Ashkanasy, Härtel, & Daus, 2002; van Knippenberg et al., 2004), the minimisation of affective conflict (Mooney, Holahan, & Amason, 2007) and the study of transformational leadership effects and processes (Bryant, 2003). By undertaking this investigation, we attempt to advance the research on social identity, interprofessional collaboration and leadership in several

ways. First, we analyse interaction across professional boundaries through a social identity lens and discuss mechanisms through which such interaction triggers negative affective responses and dysfunctional conflict behaviours. This addresses suggestions that much extant research describes the behaviour of interprofessional teams and the outcome of interprofessional interaction, but does not effectively explain why these relationships or influences exist (Currie & Suhomlinova, 2006). This paper adds to current study by exploring the explanatory relationships underpinning interprofessional collaboration (Currie & Suhomlinova, 2006 ; McCallin, 2001). Second, we respond to calls to investigate the role of transformational leadership in influencing the dynamics of teams with diverse composition. This relationship has been identified as potentially critical to team effectiveness and as yet underexplored (Dionne et al., 2004) . Building on our initial model depicting the social categorisation processes that account for much of interprofessional composition's impact on affective conflict, we present our justification for the pathways through which transformational leadership moderates this relationship. This responds to the call to understand the role of transformational leadership in teams of diverse composition (Bryant, 2003; Sosik, 1997) and addresses the call by Lawrence (1997) to understand processes through which composition impacts group dynamics and performance.

MODEL DEVELOPMENT AND PROPOSITIONS

Figure 1 depicts the model in which we present an identity-related pathway explaining the impact of interprofessional interaction on group dynamics. This pathway explains the effect of interprofessional composition on affective conflict, defined as conflict that engenders negative emotion (Jehn, 1995), through the mediating mechanism of identity salience, defined as the extent to which a specific social category is psychologically engaged (Randel, 2002). Our figure also depicts a moderating effect of transformational

leadership through the development of a superordinate (intergroup) identity, encompassing previously categorised outgroups.

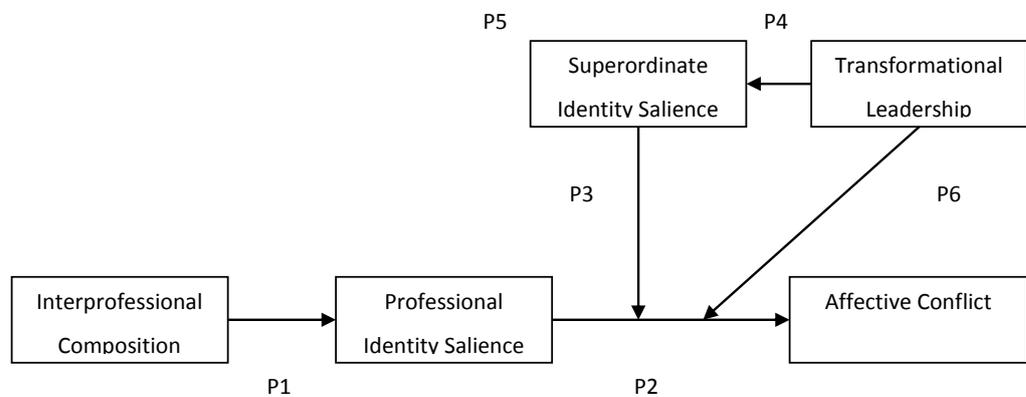


Figure 1: Interprofessional Composition Effects on Affective Conflict

In the following sections, we provide the rationale underlying our model development, and develop theoretical arguments supporting the proposed relationships. We discuss how interprofessional composition relates to the mediator, identity salience and present our reasoning to justify how identity salience leads to affective conflict. We follow this with a discussion of the moderating role of transformational leadership’s role both directly and through the development of superordinate identity.

Professional Identity and Interprofessional Collaboration

Management research into the impact of dissimilarity has typically been underpinned by the theories of social identity and categorisation, in which it is theorised that group characteristics provide a source of differentiation (Ashforth & Mael, 1989; Tajfel & Turner, 1986). Professional identity, as one form of social identity, relates to how people compare and differentiate themselves from other professional groups (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). It encompasses understanding and

attachment to professional practice, development of professionally-based expertise, attitudes and values, and an appreciation and adoption of the professional role (Schein, 1978). Professional identity potentially acts as sufficient basis for social categorization (Pietro, Shyavitz, Smith, & Auerbach, 2000), the process of segmenting people into groups that are represented as prototypes, or sets of attributes, that characterise one group and distinguish it from another (Hogg & Terry, 2000). Whilst several identities may co-exist simultaneously, context determines which of these is more salient (Randel & Jaussi, 2003) .

The term salience is used in social identity theory to refer to the circumstances in which a specific social categorisation and associated social identity become the engaged and operational basis on which the self and others are construed (Randel, 2002). Research indicates that social identity salience is dependent upon not only valued and important sources of social categorisation but also those that are perceptibly salient given the immediate circumstances and environment (Hogg & Smith, 2007; White, Hogg, & Terry, 2002). We expect profession to be a salient characteristic in health care environments because professionally-based attributions are frequently used to explain observed differences in attitudes and behaviour between employees (Hogg & Terry, 2000). In addition, our society, and professional institutes, permit, and often encourage, subordinating all other relevant roles to the professional identity (Cohen, 1981). The nature of professional status and intra-professional identification increases the importance of shared attitude to the 'other', particularly if the attitude clearly articulates professional and ideological boundaries (Lingard et al., 2002; Timmermans, 2002).

Research into gender identity indicates that group composition also significantly impacts salience. Building on evidence that the salience of identity is context dependent, researchers have argued that compositional diversity provides a context that

is capable of triggering the salience of the characteristic upon which composition varies (Hogg, Terry, & White, 1995; White et al., 2002). For example, racial diversity provides a context that increases the salience of racial identity and strength of racially-based social categorisation. Research into gender salience supports this argument through findings that variation in the gender composition of groups is linked to gender identity salience (Randel, 2002). An additional trigger for the salience of profession as a source of categorisation is the purpose of the group. The majority of interprofessional groups are formed to collocate the expertise of different professionals, which means that their profession is the reason for their membership in the first place and it creates their capability for meaningful input.

Proposition 1: Interprofessional team membership will enhance the salience of professional identity.

Group members may not always be consciously aware of their professional differences because professional identity is not always salient. However, when professional identity is salient, group members are aware of their differences and the distinction between ingroup and outgroup based on social categorisation becomes profoundly more influential (Dovidio et al., 2007; Gaertner & Dovidio, 2000). A number of theories suggest that this effect plays a significant role in interprofessional group dynamics. The theory of intergroup bias suggests that individuals strive to develop self-esteem by making positive attributions towards their ingroup and by stereotyping, distancing and disparaging members of other social categories (Brewer, 1979; Fiske, Cuddy, Glick, & Xu, 2002; Hamilton, 1979; Tajfel, 1982a). The exclusion or alienation of dissimilar others consequent to social categorisation and stereotyping has been used to explain the emergence of distrust and negative emotional experiences in teams of diverse composition (Fujimoto, Härtel, & Panipucci, 2005; Olson,

Parayitam, & Bao, 2007) . This is supported by investigation into the discursive construction of healthcare professionals, which found that over-simplified and distorted perceptions of ‘others’ professional identity confined inter-professional relations to the stereotypical, impeding effective task accomplishment and the evolution of practice and understanding (Helmreich & Schaefer, 1994).

In research into the impact of stereotyping, stigmatised groups have been shown to elicit negative affective reactions, while admired groups elicit positive affective responses (Fiske et al., 2002). Perceived intergroup differences in status as well as memories of previous encounters have been supported as catalysts for such affective responses (Cairns & Roe, 2003; Smith, 1993) . Social categorisation has also been linked to anxiety due to fear of embarrassment or frustration due to predicted offensive or incompetent behaviour (Roseman, Wiest, & Swartz, 1994; Staw, Sandelands, & Dutton, 1981; Stephan & Stephan, 1985) .

The similarity-attraction paradigm yields similar predictions relating to interprofessional collaboration. Research has generated consistent support for the tendency of people to like, trust and interact with those others they believe similar to themselves and, conversely, tend to distrust and dislike those who are perceived as dissimilar (Byrne, 1971; Tsui & O'Reilly, 1989) . Preference for, and attraction to, similar individuals is one of the most robust and reliable psychological relationships (Berscheid, 1985). The link between perceived dissimilarity and negative affective responses has been supported in research into a wide array of demographic and job-related attributes (Williams & O'Reilly, 1998), including occupational paradigms and perspectives.

Normative influence theory, which argues that individuals are motivated to conform to the opinions of those with whom they identify to preserve a favorable self-

perception and self-preservation (Dennis, 1996; Myers & Lamm, 1976), predicts that, to the extent that professional identity is salient, members are more likely to compete against different professions who present opinions and perspectives perceived to be in opposition to their own (Wagner, Lampen, & Syllwasschy, 1986). Similarly, cognitive appraisal theory of emotions or intergroup emotions theory (IET) (Smith, 1993), holds that intergroup emotions are triggered by cognitive appraisals of ingroup/outgroup relationship (Mackie, Devos, & Smith, 2000), and suggests that appraisals are based on features associated with threat to the ingroup, such as goal incompatibility and differential status, which have both been linked to professional diversity (Ely & Thomas, 2001; Pondy, 1967). Perceived ingroup threat has been associated with negative affective responses, including anger, fear and anxiety (Cottrell & Neuberg, 2005; Devos, Silver, Mackie, & Smith, 2004). Identity threat has been previously associated with the salience or strength of social identification (Crisp et al., 2006).

In combination, this leads to the following proposition:

Proposition 2: Salience of professional identity will mediate a significant relationship between interprofessional composition and affective conflict.

While social categorisation can be fast and largely automatic, it can also be purposeful. When deliberative, the decision to make a social categorisation salient is motivated by the pursuit of positive social identity and self-concept (Hogg & Smith, 2007). Social identity decisions conform to the motivated tactition model of social cognition and it follows that categorisation decisions are aimed at constructing self-favouring representations (Fiske & Taylor, 1991; Hogg & Smith, 2007). Following this, categorisation processes are also flexible and malleable, and research indicates that, by altering a perceiver's goals or expectations it is possible to alter the category inclusiveness that is more influential under given circumstances (Gaertner & Dovidio,

2000) . In particular, the level of category inclusiveness has been shown to be malleable, which directly impacts the way people think about ingroup and outgroups. One example of this form of intervention is the development of a common group identity (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993) in which members of different groups are encouraged to think of themselves as members of one larger superordinate group that encompasses previously categorised outgroups. Through this process, attitudes towards the previous outgroup become more favourable and less subject to negative intergroup bias. By altering intergroup boundaries so that outgroups are assigned ingroup status, inclusive common identities prevent the negative affective and behavioural consequences associated with stereotyping and similarity-attraction theories.

The value of developing a common group identity in supporting positive intergroup attitudes has been supported in research spanning the past 15 years (Dovidio et al., 2007) and recent research indicates that its positive effect is not contingent on a reduction in the salience of subgroup identity. The Dual Identity Model (Dovidio et al., 2001; Dovidio et al., 2007) suggests that groups members may, at once, categorise themselves as part of an ingroup and also as part of a superordinate group. This is particularly important for professions as perceived threat to the distinctiveness of individual professions is likely to pose a barrier to the development of a common group identity that subsumes professional distinctions and may be more likely to generate resistance and exacerbate bias as a way of reaffirming intergroup boundaries and distinctiveness (Crisp et al., 2006). Additional research support can be found in studies of the Dual Concern Model of negotiation in which parties' capacity to combine a high level of concern for their own goals and outcomes with a high level of concern for the goals and outcomes of the other was the key to long term negotiated partnerships

(Blake, Shepard, & Mouton, 1964). In aggregate, this research suggests that superordinate identity will influence the extent to which the mediating effect of salient professional identity accounts for interprofessional composition's impact on affective conflict. This moderated mediation is depicted in the following proposition:

Proposition 3: Superordinate identity salience will moderate the relationship between professional identity salience and affective conflict. This effect will be such that professional identity salience will not be significantly related to affective conflict in teams with a salient superordinate identity.

This proposition triggers questions regarding the mechanisms capable of facilitating the development of superordinate identity in interprofessional teams. A review of research demonstrates that leadership has been regarded as one of the most important factors to determine organisational and group performance (Berson, Nemanich, Waldman, Galvin, & Keller, 2006; Bryant, 2003; Jung, 2001; Redmond, Mumford, & Teach, 1993; Shin & Zhou, 2003; Somech, 2006; Sosik, 1997) and transformational leadership, in particular, has been found to influence intragroup dynamics and the emergence of affective conflict and distrust (Shin & Zhou, 2003; Somech, 2006).

Transformational leadership has been described as guidance through four leadership components: idealised influence, inspirational motivation, intellectual stimulation and individualised consideration (Bass, 1986; Bass, Avolio, Jung, & Berson, 2003). Transformational leaders act to stimulate common identity through the articulation of a compelling vision (Bass, 1986; Bass & Avolio, 1995; Bass et al., 2003). By making the vision salient and inspiring, followers internalise the vision and feel pride in being part of the team (Ashkanasy & Tse, 2000). Under such circumstances, individuals engaged in collaboration across professional divides start thinking of

collective interests, and perceive their individual effort and work roles in the context of the group's cooperative goals (Wang, Law, Hackett, Wang, & Chen, 2005). This, in turn, enhances the personal meaningfulness of the leader's vision (Bass, 1986; Bass & Avolio, 1995; Bass et al., 2003). Evidence suggests that heightened priority placed on co-operation and interdependence through commitment to a shared vision leads to individuals' focusing on the group as a basis for categorization which enhances the salience of interprofessional superordinate identity (Henry, Arrow, & Carini, 1999). By articulating a compelling vision, transformational leaders also enhance group members' perception of intrateam similarity, which lessens the likelihood of dislike and distrust consequent to perceived dissimilarity as predicted by the theory of similarity-attraction (Sethi, Smith, & Park, 2001).

Proposition 4: Transformational leadership will be positively related to the development of a salient superordinate identity.

Propositions 3 and 4 argue that transformational leadership will lead to the development of a salient superordinate identity, which in turn will moderate the relationship between professional identity and affective conflict. In combination, these arguments suggest a mediated moderating effect of transformational leadership as depicted in the following proposition:

Proposition 5: Transformational leadership will moderate the relationship between salient professional identity and affective conflict through the mediating effect of superordinate identity.

In addition to preventing the emergence of negative identity-related responses in interprofessional teams, transformational leaders are also capable of directly enhancing team functioning. The direct effect of transformational leadership on the relationship between diversity and affective conflict is based on research indicating that such

leadership mitigates against the emergence of negative emotions that are antecedent to conflict by engendering positive emotions (McColl-Kennedy & Anderson, 2002).

Ashkanasy and Tse (2000) argue that transformational leaders actively seek to engender and utilise positive emotions as a strategy towards optimism and positive approaches to group tasks (Mandell & Pherwani, 2003; McColl-Kennedy & Anderson, 2002) .

Transformational leaders have also been found to use positive emotion to motivate and inspire their subordinates (Bass & Avolio, 1995; Dubinsky et al., 1995). Research indicates that the development of positive emotions such as optimism and minimisation of negative emotions such as frustration, which are both linked to transformational leader behaviour, lessen the likelihood that conflict will emerge in groups (Ashkanasy, Zerbe, & Härtel, 2002; Thomas, 1992; Weiss & Cropanzano, 1996). Empirical evidence supports the role of transformational leaders in overcoming the impact of affective conflict, with a number of studies finding evidence of such leaders ability to ‘repair’ the mood of groups that had been exposed to negative events (Pirola-Merlo et al., 2002; Weiss & Cropanzano, 1996). In addition, transformational leadership has been found to facilitate the development of strong interpersonal relationships and collaborative approaches (Farrell et al., 2005; Jung & Avolio, 2000). This leads to an alternative direct pathway between transformational leadership and affective conflict in interprofessional teams:

Proposition 6: Transformational leadership will directly moderate the relationship between salient professional identity and affective conflict. This effect will be such that salient professional identity will not be significantly related to affective conflict in teams with transformational leaders.

DISCUSSION

Implications for Theory and Research

Although interprofessional collaboration has been extensively studied over the last decade, the mechanisms explaining effective collaboration across professional boundaries, remain unexplored as do the factors influencing these mechanisms (Mitchell et al., 2010; Tieman et al., 2006). Consequently, ambiguous results surrounding the effects of interprofessional collaboration have remained unresolved. In this study, we took the initiative by exploring the role of professional and superordinate identity to provide a clearer understanding of the effects of interprofessional interaction on affective conflict. By integrating a model of identity's impact on interprofessional team dynamics with learning from transformational leadership, we also offer a new moderating dimension which may be used to explain inconsistent empirical results.

We attempt to make two primary contributions to the literature on interprofessional collaboration. An important contribution of this paper lies in the application of social identity theory and social categorisation to professional collaboration. The notion of professional identity has gained considerable attention in writing on the sociology of the professions, however, to date this has not been extended to the consequences of identity to interaction spanning professional boundaries. While management research on diversity has long incorporated identity-based arguments, their utility in discussion of collaboration between professions remains unexplored. This is despite indication that professionally-based identities provide a more robust and salient source of categorisation than many other demographic and job-related factors. Although much management research has focused on the mechanisms through which diversity effects conflict, this paper proposes that dissimilarity between group members may not alone be sufficient for affective conflict to ensue, but rather it may be that conflict

emerges when dissimilarity relevant identities are salient. Professional identity salience is therefore argued to be a better predictor of the impact of professional diversity than composition alone.

A second contribution made by this study is the integration of literature on leadership to social identity research. This among the first to address the role of transformational leadership in interprofessional collaboration and represents one of the initial explorations of transformational leadership effects on social identity and social categorisation. At a minimum, the proposed model suggests a powerful explanation for variation in the success of collaborative efforts between professions by explicating the effects of transformational leadership on identity-related team dynamics, which responds to calls from numerous researchers (Bass et al., 2003; Bryant, 2003).

Implications for Practice

Besides the theoretical contributions, we believe that the proposed model of identity and leadership has a number of practical implications. The model argues that transformational leadership can have a significant impact on the negative consequences of professional identity salience through the development of a salient superordinate identity. We suggest that leader competence is developed across the four transformational strategies, but that leaders should especially focus on the development of dual identity salience. This follows predictions made consequent to optimal distinctiveness theory that common identities may threaten the distinctiveness of valued categories. The nature of professions means that their survival is dependent on their ability to be unique and distinguished from other neighbouring occupations which increases the likelihood of resistance to a common identity. Research suggests that groups are more likely to agree on common goals and develop a superordinate identity when they have had an opportunity to voice and explore their distinctive concerns and

motivations (Morley & Stephenson, 1977). Eggins, Haslam, and Reynolds (2002) found that attempts to ensure that negotiated outcomes were representative of subgroup priorities and differences, increased the likelihood that intergroup agreement would be developed and finalised. In an experimental study, the relationship between subgroup identification and effective intergroup functioning was mediated by participants' perception that their opinion and perspective had been valued (Eggins et al., 2002) . This implies that the individualised consideration component of transformational leadership behaviour will facilitate the development of common identity across professional divides by reinforcing distinctiveness. The importance of individualised consideration is reinforced by findings that conflict between groups is minimised when a positive and distinct social identity is available to both, suggest that categorisation alone does not provoke intergroup bias and the reinforcement of positive subgroup identity facilitates collaboration (Mummendey, 1995). By constructing the basis for common identity and by reaffirming the value of interprofessional collaboration towards valued goals and the use of different professional resources toward those goals, transformational leadership is argued to make more likely the decision to choose the interprofessional team member as a salient social category in combination with an individual's professionally-based categorisation.

Another practical implication is related to leaders direct influence affective conflict through the development of strong interpersonal relationships and facilitation of openminded interaction. Affective conflict has been identified almost invariably associated with diversity and has negative consequences that range from team dissolution to information withholding. Transformational leadership provides an active mechanism to minimise the likelihood that affective conflict with emerge in diverse teams and overcome its effects. To date, this presents one of very few practical options

open to organisations endeavouring to utilise interprofessional teams. It appears to be essential that leaders learn how to engender positive emotions, inhibit negative emotions, and inspire team members towards a shared goal. This will minimise the adverse effects of social categorisation and conflict and, in turn, enhance interprofessional performance.

Future Research and Conclusion

The model developed in this paper provides considerable opportunity for confirmatory investigation. An initial test of this model, through quantitative investigation, should utilise the previously utilised and validated measures that are available for the constructs of functional (professional) diversity, social identity salience, superordinate identity salience, transformational leadership and affective conflict (Bass & Avolio, 1995; Bryant, 2003; Jehn, 1995; Jehn et al., 1997; Mitchell et al., 2010; Olson et al., 2007). Given that these constructs have yet to be investigated as part of this model, a confirmatory factor analysis and path analysis is warranted. The investigation of a full structural model would enable future research to assess the extent to which each of the endogenous variables interact. The findings of this future study would have implications for understanding the mechanisms through which identity influences interprofessional collaboration and provide practical information regarding the strategies that leaders should use to overcome the challenges and take advantage of the opportunities afforded through professional diversity. Management researchers have suggested that diversity operates through two pathways. In addition to the negative and conflict-producing impact of identity-related processes, the knowledge differences between distinct groups have been argued to offer opportunities through the breadth and depth of available knowledge. In addition to empirically exploring the propositions developed in this paper, future research should explore the extent to which interprofessional collaboration

yields positive team outcomes as predicted by the information/decision-making paradigm in diversity studies.

This article was written in an effort to integrate research on interprofessional collaboration, identity and transformational leadership, and affective conflict as discussed in the existing literature. It is expected that empirical investigation will confirm and/or modify the present model, and thus, it is intended as a catalyst and beginning for future research. The utilisation of this model will ensure that such future research includes consideration of identity and transformational leadership in the management of collaboration across professional boundaries and the moderating effects of leadership on the mechanisms through which diverse professional composition yields its effects.

In conclusion, the current review and model developed provides a new perspective on the impact and management of interprofessional collaboration. In developing this model, we have integrated a range of theoretical accounts of workgroup diversity, social identity theory and social categorisation theory, and leadership, and highlighted a new direction for future research. By proposing and arguing a theoretical framework to analyse interprofessional collaboration and its effective leadership, this paper integrates different identity-related perspectives into a model of interprofessional dynamics and leadership that hopefully yields realistic management advice regarding the management of cross-professional and other diverse teams.

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8.2 Additional Paper 2: Making Good on a Threat: Leading Innovation across Professional Boundaries

Full Citation: Mitchell, R., Boyle, B., Parker, V., Giles, M., McNeil, K., Joyce, P., & Chiang, V. (2014, 9-11 September). *Making Good on a Threat: Leading Innovation across Professional Boundaries*. Paper presented at the British Academy of Management: The Role of the Business School in Supporting Economic and Social Development, Belfast Waterfront, Northern Island.⁶

Abstract

Professions are differentiated from other occupations on the basis of exclusive authority over specialist knowledge. While individuals tend to operate in uni-professional silos, there is evidence that bridging professional divides facilitates innovation through the integration of disparate knowledge. This study investigates the role of leadership and social identity on innovation within healthcare teams. We explore the role of leader inclusiveness in interprofessional healthcare team innovation through professional identification. We further argue that this mediating pathway only exists when team members perceive threat to their professional identity. Our empirical case supports a significant relationship between leader inclusiveness and interprofessional team innovation, mediated by professional identification contingent on professional identity threat. Our study shows that advocacy of professional knowledge and expertise is critical to the generation of new ideas, and suggests a positive role for identity threat in determining team outcomes by increasing team member's motivation to protect their professional priorities.

Keywords: Healthcare, interprofessional teams, professional identity.

⁶ This manuscript will be changed prior to submission to a journal for publication.

The consequences of diversity in teams are neither straightforward nor direct (Ely, Padavic, & Thomas, 2012). Yet diverse composition potentially provides many benefits (van Dijk, van Engen, & van Knippenberg, 2012), and bio-demographic and job-related diversity are an increasingly prevalent characteristic of organizational teams (Jackson & Joshi, 2011). For diverse teams to be successful, they require effective dynamics, which precipitates a research focus on the factors that are capable of engendering intra-team collaboration (DeChurch & Mesmer-Magnus, 2010; Gruenfeld, Mannix, Williams, & Neale, 1996).

One mechanism that has been evidenced to facilitate collaboration in teams is leadership (Mathieu et al., 2008; Tansley & Newell, 2007). However, while leadership has been linked to enhanced team dynamics and team performance (Eisenbeiss, van Knippenberg, & Boerner, 2008; Zaccaro, Rittman, & Marks, 2002), research into leadership of diverse teams is in its infancy (Kearney & Gebert, 2009). We contribute to this important research area by investigating the role of leader inclusiveness, defined as leadership behavior that encourages, through leader openness, accessibility and recognition, the sharing and appreciation of diverse contributions from all team members (Nembhard & Edmondson, 2006). Initial research has supported the utility of leader inclusiveness as an important leadership construct (Hirak, Peng, Carmeli, & Schaubroeck, 2012; Nembhard & Edmondson, 2006) and has indicated its potential to significantly enhance team dynamics. However its role in diverse teams, particularly the mechanisms of its effect, remains largely unexplored (Carmeli, Reiter-Palmon, & Ziv, 2010). This is despite the relevance to diverse teams of a style of leadership that specifically focuses on encouraging the manifestation and utilization of diverse perspectives (Mitchell et al., in print).

This study investigates the impact of leader inclusiveness in diverse healthcare

teams, in particular inter-professional healthcare teams, that is, teams composed of different professions (Reeves et al., 2008). The recognition that multiple, complex diseases require integrated care has led healthcare organizations to rely more explicitly and consistently on interprofessional teams, comprised of members from different professions working together to engage in comprehensive and informed health care decision-making and service delivery (Canadian Collaborative Mental Health Initiative (CCMHI), 2006; Tope & Thomas, 2007). Interprofessional teams have been found to enhance patient outcomes and staff satisfaction, and improve organizational efficiency (Canadian Health Services Research Foundation (CHSRF), 2007; Reeves et al., 2007), however, some previous studies provide evidence of a negative or no relationship between interprofessional health care teams and positive outcomes (Zwarenstein & Reeves, 2000). These findings suggest that there is still much to learn about the factors that support collaboration across professional boundaries. In an effort to address this gap, we investigate the role of leader inclusiveness on innovation in healthcare teams.

Innovation is an important facet of healthcare teams (Fay et al., 2006). It is a priority for clinicians, healthcare management and policy makers consequent to consistent evidence supporting its positive impact on patient, staff and organizational outcomes (West et al., 2003), and professional pressure to adopt evidence-based interventions (Fitzgerald, Ferlie, & Hawkins, 2003). Healthcare organizations operate in environments typified by constant change in medical information, technology, models of organization and service delivery, which necessitates innovative use of resources (Cohen et al., 2004). Consequent to international recognition of innovation as a core capability in healthcare internationally (Länsisalmi, Kivimäki, Aalto, & Ruoranen, 2006), there is increasing emphasis on understanding contributing factors and processes.

In addition to exploring the main effect of inclusive leadership on innovation, we investigate a contingent pathway explaining this effect. Building on social identity theory, we investigate the mediating role of professional identification, defined as the extent to which members feel a sense of belongingness and identify with their profession (Hekman, Bigley, Steensma, & Hereford, 2009), in the relationship between inclusive leadership and team innovation, and also explore the moderating role of professional identity threat in this mediated relationship. In doing so, this study seeks to advance research in diverse team leadership through a number of important contributions. First, while prior work has established the importance of leaders in effective teamwork (Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; Wang, Oh, Courtright, & Colbert, 2011), this is the first study to investigate the role of leader inclusiveness in team innovation. Yet, its unique focus on the development of an open and safe team dynamic potentially makes leader inclusiveness a source of significant impact in diverse teams. In particular, as inclusive leaders aim to engender participation of those members typically excluded in team discussions (Nemhard & Edmondson, 2006), their role is especially relevant in diverse teams charged with assignments necessitating innovation (Carmeli et al., 2010; De Dreu, 2002).

This study is also one of the first to explore the role of professional identification in understanding leadership effect in diverse teams. According to social identity theory, individuals hold an array of social identities, which act as foundations for cognitive, emotional and motivational processes (Tajfel, 1978, 1982a). Identity orientation is a critical determinant of how team members define themselves in terms of their profession and behave to advance their professions priorities, which is likely to play a vital role in the influence of leader inclusiveness (Mitchell et al., 2011; Tse & Chiu, 2014). Particularly in teams tasked with developing new ideas and approaches,

the influence of professional identity in motivating advocacy and debate of divergent positions is potentially significant (Swan, Scarbrough, & Robertson, 2002).

Unfortunately, while previous research has linked social identity theory to leadership effectiveness through arguments of prototypicality and shared team identity, empirical studies have yet to investigate the role of followers' identity orientations related to profession in explaining leader influence. We extend current research in diverse team leadership by explicating how leader inclusiveness influences professional identification and argue that by linking leadership to subgroup identity, rather than team identity, we address a new and important aspect of social identity that has significant implications for leadership towards team innovation.

Finally, this study is one of the first to conceptualize and investigate the positive effects of a facet of social identity, identity threat, which has previously been treated solely as a negative influence in intergroup interaction (Badea, Jetten, Czukor, & Askevis-Leherpeux, 2010; Branscombe, Ellemers, Spears, & Doosje, 1999). There is significant value in our study as a first exploration into the constructive role of social identity threat in motivating active dissent, through which it imposes an important boundary condition for the explanatory role of professional identity. Our investigation of this interactive relationship demonstrates the relevance of more complex social identity-related pathways to diverse team leadership and contributes to an important area of work that investigates the positive outcomes associated with oppositional team dynamics (De Dreu & West, 2001).

The following sections present a discussion of professional diversity and innovation. Following this theoretical background, we submit the rationale underlying the proposed relationship between leader inclusiveness and innovation, and a mediating role for professional identification. The subsequent discussion links professional

identification and innovation, and argues the moderating roles of identity threat in this relationship.

Theoretical Background

The knowledge-related effects of diversity have previously been argued through the information/decision-making analytical perspective, which holds that compositional diversity proxies cognitive diversity and provides groups with a greater breadth of relevant knowledge than homogeneous teams (Williams & O'Reilly, 1998). Diverse teams are therefore better equipped to make well-informed and more innovation solutions, through the integration of unique perspectives (Ancona & Caldwell, 1992; Bantel & Jackson, 1989; De Dreu & West, 2001).

An alternative mechanism through which diversity influences team outcomes is underpinned by social identity theory and social categorization (Ashforth & Mael, 1989; Tajfel & Turner, 1986). The social identity perspective holds that perceived member similarities and dissimilarities provide the basis for categorization, the division of individuals into groups that are represented as prototypes, or model characteristics typifying one group and differentiating from other groups (Ashforth & Mael, 1989). Social categorization in diverse groups has been argued to lead to knowledge-related advantages and disadvantages. Negative effects of social categorization are argued to emerge because members within a social 'ingroup', share trusting, positive relationships, while interactions with the 'outgroup' are hostile and characterized by reserve and information-withholding (Tajfel, 1982a; Williams & O'Reilly, 1998). Positive effects of social categorization occur because individuals expect differences between members of different social groups. In diverse teams, this means that team members will expect knowledge differences associated with membership of different social categories represented on the team (Phillips, 2003; Phillips & Loyd, 2006). This

expectation leads members to seek out divergent perspectives from members of other social categories and view unique, even conflicting, positions as valid if they emanate from these members (Steele, 1997; Yoon & Hollingshead, 2010).

The information/decision-making, social identity, and integrated categorization elaboration model have been applied to interprofessional teams (Mitchell et al., 2011). Applying the information/decision-making perspective to interprofessional teams suggests that the advantages of professionally-diverse composition are consequent to increased knowledge breadth (Williams & O'Reilly, 1998). As members of one profession constitute 'thought worlds' that share particular knowledge funds and systems of meaning, (Carlile, 2002; Dougherty, 1992), spanning professions in interprofessional teams potentially leads to cross-fertilization and the connection of previously unshared perspectives, leading to new ideas (Fay et al., 2006; Jehn, Northcraft, & Neale, 1999; Williams & O'Reilly, 1998). The social identity perspective has also been applied to healthcare contexts (Mitchell et al., 2011; Mitchell et al., 2010). Profession has been shown to provide a sufficient and likely basis for social categorization, and professionally-based attributions are frequently used to explain differences between employees in healthcare settings (Mitchell et al., 2010). This suggests that social categorization on the basis of profession may lead to conflict and distance between members, but may also lead members to expect and seek out divergent perspectives, potentially increasing the breadth of knowledge available to the team (Jehn et al., 1999).

The identification of factors capable of enhancing the positive knowledge-related outcomes of diversity while minimizing negative effects associated with stereotyping and bias is therefore a critical endeavor (van Knippenberg & Schippers, 2007). We argue that leader inclusiveness potentially enhances positive team

outcomes by influencing social identification processes to promote sharing of professionally-based knowledge assets.

Model Development and Propositions

Leader inclusiveness is a key relational leadership style (Shore et al., 2010) that is directed towards encouraging and valuing the different viewpoints and ideas of all members' (Nembhard & Edmondson, 2006) and creating a dynamic conducive to the sharing and candid consideration of a diversity of opinions in the context of collective team goals (Shore et al., 2010). It has similarities with transformational leadership; however, while transformational leaders challenge existing assumptions and provide personal encouragement (Bass, 1986), leader inclusiveness focuses on a strategy of openness and accessibility to promote a diversity of opinions in the context of shared team goals. Leader inclusiveness can also be compared to participative leadership, which encompasses shared decision-making, however, while participative leaders encourage broad member involvement, leader inclusiveness focuses on the developing a dynamic that prompts team members perceive their diverse, unique or opposing positions to be important contributions (Carmeli et al., 2010; Hirak et al., 2012).

Leader inclusiveness incorporates characteristics of accessibility, openness, recognition and appreciation (Carmeli et al., 2010), which leads such leaders to explicitly encourage input from members of different social groups, support under-represented members to contribute, and invite conflicting views and encourage dissent (Nembhard & Edmondson, 2006). Inclusive leaders openly recognize the validity of unique viewpoints and minority perspectives, and acknowledge the legitimacy of conflicting views (Nishii & Mayer, 2009). This is reflected in behaviors such as reinforcing the importance of unshared and dissenting perspectives for

achieving team goals, and highlighting examples where conflict views have triggered new ideas of solutions (Hirak et al., 2012).

Utilizing inclusive behaviors, leaders assure members that their individual voices and unique perspectives are valued and encouraged (Carmeli et al., 2010; Shore et al., 2010) and generates a team dynamic in which members perceive their novel or conflicting positions to be valuable contributions (Carmeli et al., 2010). This behavior leads team members to believe that their professional expertise will be highly regarded and utilized to achieve the team's work goals (Carmeli, Brueller, & Dutton, 2009; Carmeli & Gittell, 2009).

By assuring members that their individual contribution is important, inclusive leaders strengthen member's perception that their distinctive professional characteristics are a source of merit (Baumeister & Leary, 1995). Attaching importance to profession-specific expertise increases the esteem associated with being a member of their profession. Strong social identification is linked to the perception that membership will fulfil the desire to be appreciated as a unique individual (Pickett, Bonner, & Coleman, 2002), and it follows that feeling valued on the basis of their professional contribution will strengthen member's sense of connection to their profession.

This leads to the following hypothesis:

Hypothesis 1: Leader inclusiveness will be positively linked to professional identification in interprofessional teams.

As professional identification strengthens, members are more intensely attached to their profession (Ashforth & Mael, 1989). This leads members to more strongly advocate their professionally-mandated positions and approaches are against the preferences of other groups (Ashforth & Mael, 1989; Schein, 1978). Members from different professions, promoting their divergent professional priorities, engage in debate

which challenges entrenched positions and perspectives. This advocacy and debate of differing professional approaches provides teams with access to a broader range of ideas and alternative, often conflicting, perspectives (Carpenter, Geletkanycz, & Sanders, 2004).

The development of creative ideas has long been linked to the juxtaposition of assumed perspectives against opposing or controversial approaches (Ancona & Caldwell, 1992). In healthcare organizations, this translates into the intersection of different professions, and it is at this location that novel interpretations and connections are most likely (Ringberg & Reihlen, 2008). In addition, the vigorous debate of alternative positions has been consistently shown to enhance team ability to withstand conformity pressures (Nemeth, 1986; Nemeth, Connell, Rogers, & Brown, 2001; Nemeth & Nemeth-Brown, 2003) and enhances conceptual differentiation and divergent thinking (Gruenfeld, Thomas-Hunt, & Kim, 1998; Van Dyne & Saavedra, 1996), which have been linked to the generation of new ideas and innovation (De Dreu & West, 2001).

In addition to the availability of diverse perspectives, interprofessional teams with members who strongly identify with their profession are more likely to pursue solutions that do not require compromise. Individuals who strongly identify with their profession are more profoundly driven by the priorities of their profession, and less likely to deviate from these or accommodate alternative viewpoints (Lingard et al., 2002; Timmermans, 2002). While individuals may participate in discussion, their professional mandate may make them less likely to concede on their profession's priorities and less likely to settle for a middle-ground solution. Motivation to find a solution that meets diverse and dissenting viewpoints increases the likelihood that the team's outcome will

integrate alternative perspectives and stimulate novel approaches (Nemeth & Nemeth-Brown, 2003; Paulus & Nijstad, 2003).

Hypothesis 2: Professional identification will be positively related to innovation in interprofessional teams.

We have argued for a path from leader inclusiveness to professional identification and from professional identification to team innovation. In combination, this suggests a mediated path from leader inclusiveness to innovation as follows:

Hypothesis 3: Professional identification will mediate the relationship between leader inclusiveness and innovation.

There is evidence that team dynamics influence the extent to which members are willing to articulate and advocate unshared perspectives (Edmondson, 1999; Joshi & Roh, 2009), and we argue that identity threat provides a context in which team members are more motivated to protect their profession and highlight the importance of their unique professional perspectives.

Threat to professional identity reflects a perception of risk regarding the diminution of a profession's expertise, values or occupational role (Branscombe et al., 1999). A key category of identity threat, distinctiveness threat (Branscombe et al., 1999), develops when individuals believe that the defining attributes of their 'ingroup' are not distinct from the 'outgroup' (Jetten, Spears, & Postmes, 2004). As interprofessional teams are typically formed to facilitate professional boundary-spanning and boundary blurring (Canadian Health Services Research Foundation (CHSRF), 2007; Cook & Hyrkäs, 2010), they are expected to elicit distinctiveness threat.

Threat has been found to prompt the presentation of identity-enhancing information, termed positive-distinctiveness response, particularly when the identity is

central to an individual's goals, values and sense of contribution (Hornsey & Hogg, 2000a). As profession has been found to subsume all other forms of social identity (Cohen, 1981), and forms the basis for contribution in interprofessional teams, threat to professional identity in such teams increases the motivation to invest in a positive-distinctiveness response (Branscombe et al., 1999; Petriglieri, 2011). This process involves attempts to positively distinguish individual member's professions by arguing and presenting evidence in support of the value of professional priorities and perspectives (Creed & Scully, 2000; Ellemers, Spears, & Doosje, 2002) and by highlighting the importance of the threatened profession's expertise and approach (Ely, 1994).

Perceived threat motivates individuals to articulate and strongly advocate for the elements of their profession's position that diverge from other professions, thus highlighting their distinctiveness (Petriglieri, 2011). By increasing members' motivation to present their profession's priorities as unique contributions and to highlight the positive attributes of their profession's positions, distinctiveness threat strengthens the influence of professional identification and the advocacy of professional priorities. Effort towards positive-distinctiveness reduces the likelihood that members will compromise on these unique elements of their professions input (Haslam & Ellemers, 2005). Conversely, low levels of professional threat are likely to limit member motivation to defend their profession's perspective and lessen the perceived importance of highlighting and advancing the distinctive characteristics of their profession's approach. While low levels of threat reduce member motivation to promote the positive distinctiveness of their profession's position, greater perceived threat will lead team members to engage in behavior that increases the advocacy of the unique attributes of

their profession's expertise, and defense of their profession's preferred solution (Branscombe et al., 1999; Hogg & Terry, 2000).

Hypothesis 4: Identity threat will moderate the relationship between professional identification and innovation, such that the positive relationship between professional identification and innovation will be stronger when identity threat is stronger.

We have argued that leader inclusiveness will be positively linked to professional identification and that identity threat will moderate a positive relationship between professional identification and innovation. In combination, this suggests a moderated mediation path between leader inclusiveness and innovation as predicted in the following hypothesis:

Hypothesis 5: Identity threat will moderate the relationship between leader inclusiveness and innovation, such that the positive relationship between leader inclusiveness and innovation through professional identification will be stronger when identity threat is stronger.

Method

Procedure and Sample

Participants were all team members working in an acute healthcare setting. We defined a work team as two or more team members and a team leader, who shared common goals and undertook interdependent tasks to achieve these goals (Kozlowski & Bell, 2003). The inclusion criteria were that: a) the leader complete the leader's survey, which assessed team demographic characteristics and the outcome variable, innovation and b) members complete the member's survey which collected data on predictor variables, team dynamics.

We utilized two separate questionnaires to collect data, which minimizes the risks associated with bias due to common method (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The team leader questionnaire was used to collect data on the dependent variable, team innovation. Team members provided data on the predictor variables.

A central practice-development database was used as the sampling frame and questionnaires were distributed to 210 teams. Members and leaders of 75 teams completed the questionnaires, providing a 36% response rate. As teams were invited to participate, and responded, over an extended study period, an independent samples t-test was used to test for significant mean differences between early and late responders. Results provided no indication of significant mean differences between respondent teams on the basis of team performance, team composition, and predictor variables.

We investigated sample representativeness by comparing attributes of our sample with known population values at country and regional level for healthcare institutions (Australian Institute of Health and Welfare (AIHW), 2006). For our study sample, the average age of 41.8 years was proximal to the average age for healthcare professionals at a national (42 years) and regional (43 years) level. In addition, the study sample showed a very similar distribution of healthcare professional groups to the national and regional level. Nurses comprised 54% of the study sample, and comprise 51.4% of healthcare professionals employed nationally and 54% regionally. Medical practitioners comprised 13.8% of the study sample, and comprise 13.7% of healthcare professionals employed nationally and 14.6% regionally. Allied health professionals comprised 23.6% of the study sample, and comprise 22% of healthcare professionals employed nationally and 25.38% regionally. This provides support for the representativeness of our sample.

The number of professions in our sample teams was 4 with a significant majority of teams composed of between 3 and 5 professions. A wide range of healthcare profession categories comprised team membership including: Nurse, Dietician, Physiotherapist, Social Worker, Medical Practitioner, Pharmacist, Occupational Therapist, Speech Pathologist, Radiographer and Psychologist. Teams had been working together for an average of two years and were currently working as teams at the time of questionnaire completion. Team leaders were from different professions including nursing, medicine, physiotherapy, physiotherapy and social work. The most frequent leader profession was nursing (48%).

We received an average of 4.6 responses per team, which represents a mean of 52% of team members. Dawson's (2003) selection rate formula was used to assess the accuracy of incomplete group data in predicting true scores, using the formula $([N - n]/Nn)$ where n is the number of responses per group and N is group size (Dawson, 2003). Scores from teams with a value of less than or equal to .32 are correlated with true scores at .95 or higher (Dawson, 2003; Richter, West, Van Dick, & Dawson, 2006). Based on this cut-off point, no teams were excluded as all were within the acceptable parameter.

Measures

For hypotheses testing, the level of analysis was team-level. We performed an analysis of variance (ANOVA) to examine between-group variations in our predictor variables and computed the intra-class (ICC) correlation values, to reflect the inter-rater reliability (Bliese, 2000). In common with similar recent research (Schaubroeck, Lam, & Cha, 2007), two intraclass correlation coefficients are recommended for justifying aggregation of measures to group level (Raudenbush, Bryk, Cheong, Congdon, & du

Toit, 2004). ICC(1) indicates the ratio of between-group variance to total variance and ICC(2) indicates the reliability of average team perceptions.

Leader inclusiveness: Four scale items were used to measure leader inclusiveness taken from previous research (Nembhard & Edmondson, 2006; Shortell, Rousseau, Gillies, Devers, & Simons, 1991), for example participants were asked to what extent they agreed with the following statements, “Our leadership encourages the input of members from all professions”, and “Our team leadership values the opinions and inputs of all members equally”. The alpha coefficient for this measure was .96, ICC(1) was .29, $F(74, 270) = 2.99, p=.00$, indicating that team membership accounted for a considerable and significant component of the variance in responses (Bliese, 2000; Snijders & Bosker, 1999), and the ICC(2) was .65. *Threat to professional identity:* Three items measured professional identity threat. These items were adapted from previous research to reflect distinctiveness threat (Branscombe et al., 1999)). For example, participants were asked to rate their agreement with the following statement “Team members feel pressure to change their professional approach and priorities to fit in with the rest of the team”. The alpha coefficient for this measure was .79, ICC(1) was .33, $F(74,270) = 3.31, p=.00$ and ICC(2) .70. *Professional Identification:* Three items were included to measure professional identification. All items were taken from previously validated measures (Bartels, Pruyn, & Jong, 2009; van Knippenberg, van Knippenberg, Monden, & de Lima, 2002), for example, “I identify strongly with my professional group”. The alpha coefficient for this measure was .87, ICC(1) for professional identification was .13, $F(74, 270) = 1.64, p=.00$ and ICC(2) .40. The ICC(1) result for professional identity was over the median of .12 reported by James (1982). The ICC(2) result was lower than expected but comparable to similar studies (Srivastava, Bartol, & Locke, 2006; Walker, Smither, & Waldman, 2008). *Team*

Innovation: Three items measured team innovation based on previously validated measures (West & Anderson, 1996) for example, “To what extent was this team innovative?” and “To what extent does this team produce new ideas and introduce specific changes?”. The alpha coefficient for this measure was .94.

Control Variables: Size of team was included as a control variable as previous research has found that size is correlated both with team processes and team performance (Hewstone, 1996; Lewis & Herndon, 2011). In particular, the inclusion of size as a control is theoretically justified based on the process loss theory of team dynamics, which argues that increasing team numbers are linked to decreasing performance (Steiner, 1966). To assess team size, respondent leaders were asked to indicate the number of team members. Professional diversity was also included as a control based on its links to performance (Mitchell et al., 2010; Randel, 2002). Measurement of professional diversity occurred in the leader questionnaire. To assess team diversity, respondent leaders were asked to indicate the number of different professions represented on the team. Diversity was measured using Blau’s (1977) index of heterogeneity: $(1 - \sum P_i^2)$, where P_i is the proportion of top managers in i th category. Blau’s (1977) index has wide-spread usage as a measure of group diversity (Kilduff, Angelmar, & Mehra, 2000; Pelled, Eisenhardt, & Xin, 1999). A higher score on Blau’s index indicates greater professional diversity.

Results

Table 1 shows the means, standards deviations and correlations among variables.

INSERT TABLE 1 HERE

This study employed partial least squares (PLS) structural equation modelling (SEM) to analyze data. PLS is a second generation modelling technique is increasingly

utilized in health and organizational studies research (Sosik, Kahai, & Piovosio, 2009). A growing number of published studies in management research utilize PLS including, for example, research in group dynamics (Jung & Sosik, 1999, 2003), leadership (Howell & Avolio, 1993; Jung & Sosik, 2002; Kahai, Sosik, & Avolio, 1997, 2004; Sosik, 1997; Sosik & Godshalk, 2000); and innovation (Howell & Shea, 2006). PLS SEM was chosen for this data analysis as it is a robust causal modelling technique that aims to maximize the dependent construct variance (Henseler, Ringle, & Sinkovics, 2009). It is well suited to the current study as it can be used to analyze data from small samples, ranging from 30 observations (Chen, Lam, & Zhong, 2007). We used Smart PLS software (Ringle, Wende, & Will, 2005).

Similar to other structural equation modelling techniques, PLS SEM provides information that allows assessment of both the measurement and structural components of research models. With regard to the measurement model, PLS SEM generates factor loadings that can be interpreted in a similar way to data generated through principal components factor analysis (Bookstein, 1986). Table 2 shows the factor patterns and structure coefficients for each of the study constructs

INSERT TABLE 2 HERE

Inspection of the data in Table 2 reveals that all coefficients are greater than .7, and all scale items have the highest coefficients with their parent scale. This indicates conceptual homogeneity within scales and heterogeneity between scales, which supports claims of discriminant validity (Thompson, 1997).

PLS provides parameter estimates to enable assessment of the structural component of the research model. Bootstrapping was used to generate t-test statistics in order to evaluate the statistical significance of the path coefficients. Bootstrapping involves generating a large number of random samples by sampling with replacement

from the original data (Sosik et al., 2009). Following Chin (1998), we ran 1000 bootstrap samples.

Figure 1 depicts the results of partial least squares analysis. The partial least squares analysis revealed a significant positive path coefficient for the impact of leader inclusiveness on professional identity ($\beta=.40$, $t=4.93$, $p<.00$) supporting hypothesis 1, but a very small and not significant path coefficient for professional identity regressed on team innovation ($\beta=.03$, $t=.36$, $p=.72$) leading us to reject hypothesis 2. A bootstrapped confidence interval for the indirect effect of leader inclusiveness on innovation through professional identification that included zero (95% CI $-.01 - .21$), provided confirmation that our data did not support a simple mediation path leading us to reject hypotheses 3 (Preacher & Hayes, 2004). A non-significant path between leader inclusiveness and innovation was also found ($\beta=.24$, $t=1.85$, $p=.07$).

INSERT FIGURE 1 HERE

To test hypotheses 4, a standardized cross-product interaction construct was computed and included in the model as suggested for PLS analysis (Chin, Marcolin, & Newsted, 2003). The partial least squares analysis revealed a significant path coefficient for the interaction variable regressed on innovation ($\beta=.32$ $t=2.86$, $p=.01$), supporting hypothesis 3.

In order to explore the nature of the moderating effect further, we used simple slopes computations and graphed the interactions using high (1SD above the mean) and low (1SD below the mean) levels of the moderator. These analyses revealed that professional identity was associated with innovation when threat was high (simple slope $=.47$, $t=2.29$, $p=.03$) but that professional identity was not related to innovation when threat was at a low level (simple slope $=-.27$, $t=-1.5$, $p=.14$), as depicted in Figure

2. These results provide support for hypothesis 4 by indicating that professional identity impacts innovation when professional identity threat is high.

INSERT FIGURE 2 HERE

Hypothesis 5 posited that the indirect effect of leader inclusiveness on innovation via professional identification depends on threat levels. To test moderated mediation, the data was investigated to assess whether the strength of the mediation via professional identification differs across two levels (high and low) of the moderator, identity threat (Preacher, Rucker, & Hayes, 2007). Moderated mediation is evidenced when the conditional indirect effect of leader inclusiveness on innovation via professional identification differs in strength across low and high levels of identity threat. High and low professional identity threat was operationalized as 1 standard deviation above and below the mean respectively. The results of this analysis indicate that the relationship between leader inclusiveness and performance via team identity was negative and not significant when threat was low with a conditional indirect effect of $-.056$ (95% CI $-.24 - .08$) and positive and significant when threat was high with a conditional indirect effect of $.17$ (95% CI $.06 - .39$). This analysis supports hypothesis 5.

While PLS does not test for model fit (Carson, Tesluk, & Marrone, 2007), the *r*-square statistics provides an approximation of model utility by depicting the extent to which the predictors account for variance in the dependent variable. Our model explained 34% of the variance in innovation, which can be interpreted as an indicator of moderate fit (Chin, 1998).

In order to further investigate the quality of the structural model, we assessed the models capacity to predict professional identification and innovation. In order to assess predictive relevance, we used PLS SEM to generate the Stone-Geisser criterion (*Q*²) with an omission distance of 7. Analysis resulted in a Stone–Geisser criterion *Q*² value

of 0.13 for professional identification and 0.30 for innovation, which is substantially above the threshold value of zero, and which indicates the model's predictive relevance (Henseler et al., 2009). This supports our claim that leader inclusiveness has a significant impact on professional identification and innovation, and also supports the utility of the pathways that we have investigated.

Discussion

The purpose of this research was to investigate the role of leader inclusiveness in bridging professional boundaries to enhance innovation in interprofessional teams. In addition, a mediating role for professional identification in this relationship, and moderating role for identity threat, were hypothesized and investigated. Analyses indicate that leadership increases the innovation of interprofessional teams through professional identification, which operates as a mediator, conditional on identity threat.

This study makes several important theoretical contributions. It is one of very few to investigate the potential of leader inclusiveness in teams, and the first study to investigate a key mechanism through which leader inclusiveness facilitates innovation. Leadership scholars have noted the importance of leader behaviors in team dynamics and performance, but prior research has not investigated the utility of leader inclusiveness in spanning professional boundaries. Our model proposes that leaders who explicitly value diverse perspectives are likely to enhance professional identification, which potentially strengthens members' motivation to act as proponents of profession-specific perspectives. Thus, our findings extend an emerging area of research pertaining to leadership that builds constructive relational dynamics, so enhancing team and organizational practices and performance (Fletcher, 2012; Uhl-Bien, 2006). We found that leader inclusiveness a critical role in shaping the social-psychological

dynamics of interprofessional teams, overcoming barriers between professions and facilitating knowledge sharing and integration.

Our findings indicate that inclusive leadership strengthens professional identification, which explains its effect on innovation conditional on identity threat. When leaders explicitly encourage and value the diverse contributions of all members, they reinforce the importance of each member's professionally-based knowledge and perspective. Previous studies have linked social identity to professions and this has been argued as a critical source of interprofessional conflict, however, the current study is one of the first to provide confirmatory evidence supporting the valuable role of professional identity in team innovation.

A key contribution of this study relates to the finding that professional identity threat moderates the mediated relationship between leader inclusiveness and innovation. Our results suggest that, while leader inclusiveness and professional identification provide a context that motivates members to engage in the advocacy of professional positions, this contributes to team performance only when members are strongly focused on defense of their profession as well as motivation to find a solution that accommodates divergent professional priorities. Inclusive leadership's effects are contingent on members' articulation and defense of their professions' positions as an important source of differentiation. When identity threat is strong, members are more likely to more thoroughly justify and defend their professions' priorities and are also more motivated to search for novel solutions that enable the attainment of their goals without compromise. While previous research suggests that efforts to build team performance should involve focusing members on aspects of commonality, our findings suggest that this needs to be balanced with a focus on relevant aspects of differentiation. As such, this study contributes to a small but important body of work highlighting the

importance of oppositional dynamics and dissenting voices in team innovation. This finding also has relevance to existing theory on the importance of dual identity, incorporating both sub-group and team identity, by indicating that sub-group categorization is particularly significant when teams are required to produce innovative solutions.

Our findings have important practical applications. Our results point to the utility of leadership styles for diverse teams that incorporate openness and explicit valuing of divergent perspectives. Such styles will assist managers to reinforce the utility of professional knowledge. Our findings also suggest that leaders should be aware of the benefits of perceived threat and even promote efforts towards positive-distinctiveness strategies.

There are a number of limitations of this study including a small sample size, which may have lessened the chance that significant relationships would be evidenced. This was compounded by the investigation of moderating effects (Cohen, 1988). However, we used PLS SEM, which is relatively robust to small sample sizes (Hair, Ringle, & Sarstedt, 2011) and our sample was more than 10 times the greatest number of paths to an endogenous construct thereby exceeding sample size guidelines (Hair, Sarstedt, Ringle, & Mena, 2012).

While not a limitation, this study investigated a relatively under-explored leadership style, leader inclusiveness. We recognize that there may be a perceived risk that this style of leadership is similar to established constructs, particularly transformational leadership. We therefore undertook to investigate our model with transformational leadership, measured using the 5-item Transformational Leadership Scale (TLS) (García Morales, Lloréns Montes, & Verdú Jover, 2008), included as a control variable. We found very similar results with a significant positive path

coefficient for the impact of leader inclusiveness on professional identity ($\beta=.40$, $t=4.08$, $p<.00$), a small path coefficient for professional identity regressed on team innovation ($\beta=.03$, $t=.56$, $p=.72$) and a significant path coefficient for the interaction variable regressed on innovation ($\beta=.32$ $t=2.13$, $p=.01$). We found support for a positive relationship between transformational leadership and innovation ($\beta=.42$ $t=2.00$, $p=.01$). The model including transformational leadership explained 38% of the variance in innovation. This provides additional support for the utility of leader inclusiveness as an important leadership style.

Finally, this study focused on interprofessional teams, which is particularly valuable given the increasing policy and clinical emphasis on interprofessional collaboration (Centre for the Advancement of Interprofessional Education (CAIPE), 2008), however it may limit the extent to which findings are applicable to teams that are demographically diverse, or that vary on the basis of a different job-related characteristic. This points to the value of future research in teams diverse on a broader range of variables.

Conclusion

Despite these limitations, the data indicates that leadership has potential to build a team dynamic that is conducive to bridging professional divides, and through this, innovation. Our study is one of very few to explore the role of leader inclusiveness, however its emphasis on the development of an open team dynamic (Carmeli et al., 2010) make it an important predictor of team outcomes, especially teams of diverse composition. Our results also extend our understanding of the importance of social identity constructs in explaining the impact of leadership in teams, and in effecting successful collaboration between different professions. We predicted that professional identification and identity threat will interact to generate innovative outcomes in

interprofessional teams. Support for this interaction contributes to an important area of work that investigates the positive outcomes associated with oppositional team dynamics.

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Table 1

Variable Means, Standard Deviations and Correlation Coefficients

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Team Age	1.87	1.01							
2 Team Size	8.34	5.84	-.23*						
3 Professional Diversity	.51	.15	.13	-.09					
4 Leader Inclusiveness	5.20	1.02	.07	-.06	-.13				
5 Professional Identity	5.73	.68	-.06	.08	-.08	.40**			
6 Identity Threat	6.07	2.76	-.45	.31**	.16	-.44**	.01		
7 Innovation	5.15	1.03	.12	.02	.07	.46**	.26*	-.33**	

* $p < .05$ ** $p < .01$

Table 2

Factor Coefficients

	Leader Inclusiveness	Professional Identification	Identity Threat	Team Innovation
Leadership 1	.93	.36	-.69	.40
Leadership 2	.96	.37	-.72	.42
Leadership 3	.96	.43	-.75	.43
Leadership 4	.94	.37	-.73	.46
Professional Identification 1	.36	.96	-.27	.22
Professional Identification 2	.45	.96	-.35	.23
Professional Identification 3	.45	.81	-.28	.29
Threat 1	-.70	-.34	.89	-.28
Threat 2	-.67	-.29	.95	-.46
Threat 3	-.72	-.28	.87	-.29
Innovation 1	.44	.29	-.36	.96
Innovation 2	.45	.31	-.39	.97
Innovation 3	.38	.17	-.39	.91

Tabled values are standardized parameter estimates.

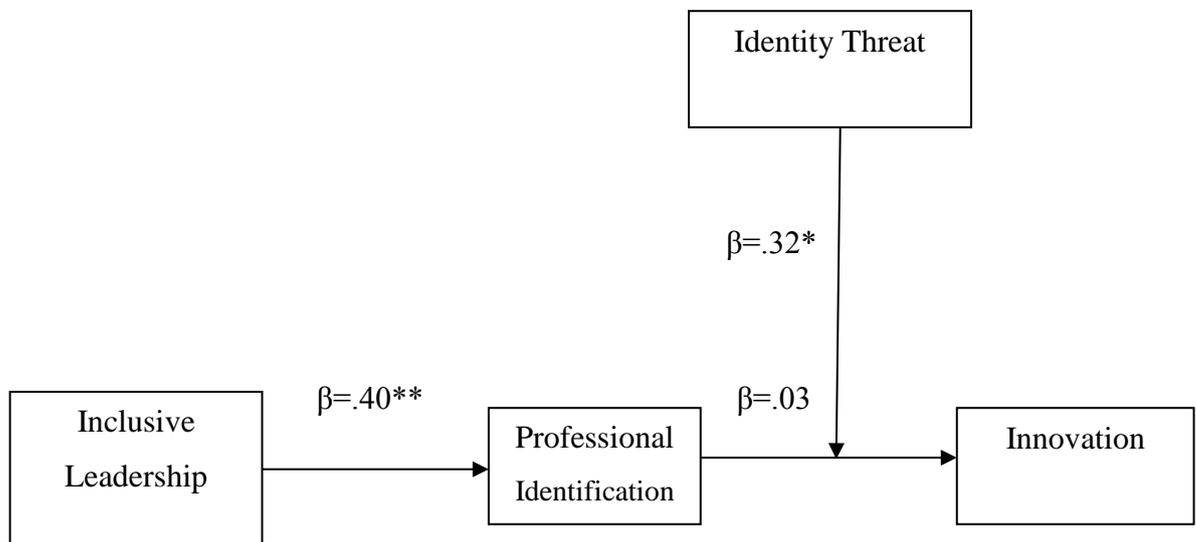


Figure 1. Model of Inclusive Leadership Effects

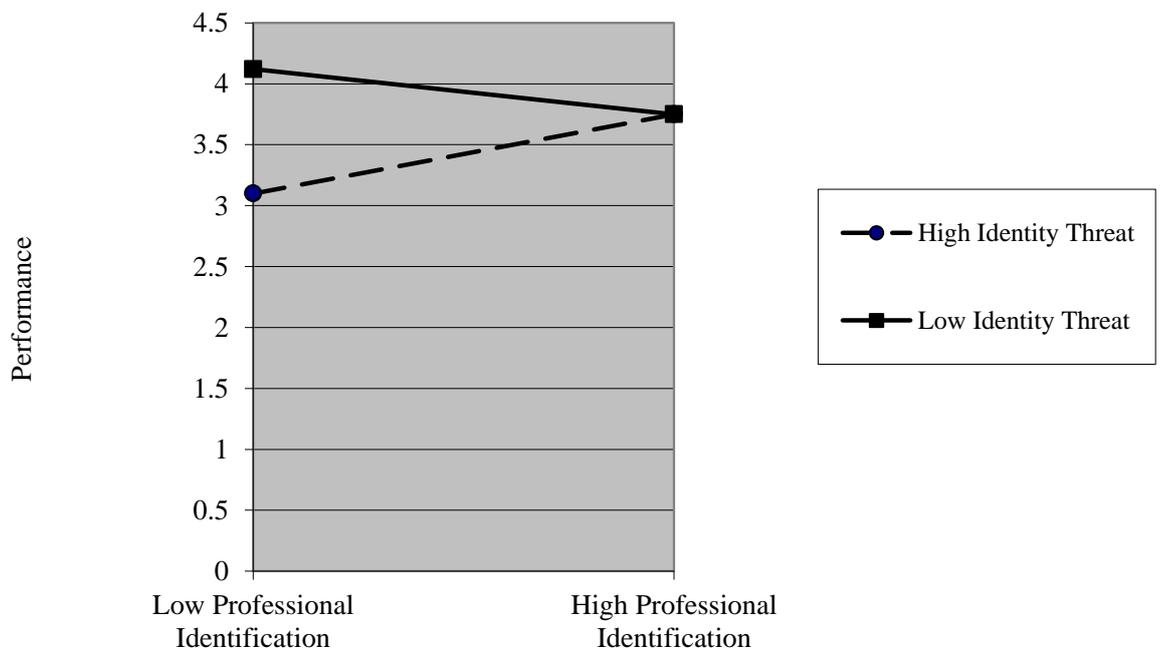


Figure 2. Moderating Effect of Identity Threat on Professional Identification’s Impact on Innovation

9 Appendices

9.1 Appendix 1: Ethics Approvals

Copies of the relevant ethics approval documents appear on the following six unnumbered pages. These are:

HNEHREC Reference No: 10/06/16/4.01 (17 August 2010)

Final ethical approval of the larger research project entitled, *The actual and the potential of Inter-professional teamwork in rural health care* (3 pages).

HNEHREC Reference No: 10/06/16/4.01 (23 August 2011)

Approval to add the author as student researcher on the project (3 pages).

17 August 2010

Dr V Parker
CNC Research Practice and Development
CPOD
John Hunter Hospital

Dear Dr Parker,

**Re: The actual and the potential of Inter-professional teamwork in rural health care
(10/06/16/4.01)**

**HNEHREC Reference No: 10/06/16/4.01
NSW HREC Reference No: HREC/10/HNE/125**

Thank you for submitting the above protocol for single ethical review. This project was first considered by the Hunter New England Human Research Ethics Committee at its meeting held on **16 June 2010**. This Human Research Ethics Committee is constituted and operates in accordance with the National Health and Medical Research Council's *National Statement on Ethical Conduct in Human Research (2007)* (National Statement) and the *CPMP/ICH Note for Guidance on Good Clinical Practice*. Further, this Committee has been accredited by the NSW Department of Health as a lead HREC under the model for single ethical and scientific review. The Committee's Terms of Reference are available from the Hunter New England Area Health Service website: http://www.hnehealth.nsw.gov.au/Human_Research_Ethics.

I am pleased to advise that following acceptance under delegated authority of the requested clarifications and revised information letter and consent form by Dr Nicole Gerrand, Manager, Research Ethics & Governance in consultation with members of the Hunter New England Human Ethics Committee, the Hunter New England Human Research Ethics Committee has granted ethical approval of the above project.

The following documentation has been reviewed and approved by the Hunter New England Human Research Ethics Committee:

- For the Study Advertisement (Version 4 dated 26 May 2010);
- For the Combined Information Letter (Version 3 dated 28 June 2010);
- For the Consent to Participate in an Interview (Version 2 dated 28 June 2010);
- For the Consent to Participate in a Focus Group (Version 3 dated 28 June 2010);
- For the Consent to Participate in an Observation (Version 3 dated 28 June 2010);
- For the Interview/Focus Group Questions Rural Interprofessional Practice (Version dated 28 May 2010)

For the protocol: **The actual and the potential of Inter-professional teamwork in rural health care**

Hunter New England Research Ethics & Governance Unit

(Locked Bag No 1)
(New Lambton NSW 2305)
Telephone (02) 49214 950 Facsimile (02) 49214 818
Email: hnehrec@hnehealth.nsw.gov.au
http://www.hnehealth.nsw.gov.au/Human_Research_Ethics

Approval from the Hunter New England Human Research Ethics Committee for the above protocol is given for a maximum of **3** years from the date of this letter, after which a renewal application will be required if the protocol has not been completed.

The *National Statement on Ethical Conduct in Human Research (2007)*, which the Committee is obliged to adhere to, include the requirement that the committee monitors the research protocols it has approved. In order for the Committee to fulfil this function, it requires:

- A report of the progress of the above protocol be submitted at 12 monthly intervals. Your review date is **August 2011**. A proforma for the annual report will be sent two weeks prior to the due date.
- A final report must be submitted at the completion of the above protocol, that is, after data analysis has been completed and a final report compiled. A proforma for the final report will be sent two weeks prior to the due date.
- All variations or amendments to this protocol, including amendments to the Information Sheet and Consent Form, must be forwarded to and approved by the Hunter New England Human Research Ethics Committee prior to their implementation.
- The Principal Investigator will immediately report anything which might warrant review of ethical approval of the project in the specified format, including:
 - Any serious or unexpected adverse events
 - Adverse events, however minor, must be recorded as observed by the Investigator or as volunteered by a participant in this protocol. Full details will be documented, whether or not the Investigator or his deputies considers the event to be related to the trial substance or procedure. These do not need to be reported to the Hunter New England Human Research Ethics Committee
 - Serious adverse events that occur during the study or within six months of completion of the trial at your site should be reported to the Manager, Research Ethics & Governance, of the Hunter New England Human Research Ethics Committee as soon as possible and at the latest within 72 hours.
 - All other safety reporting should be in accordance with the NHMRC's Safety Monitoring Position Statement – May 2009 available at http://www.nhmrc.gov.au/health_ethics/hrecs/reference/files/090609_nhmrc_position_statement.pdf
 - Serious adverse events are defined as:
 - Causing death, life threatening or serious disability.
 - Cause or prolong hospitalisation.
 - Overdoses, cancers, congenital abnormalities whether judged to be caused by the investigational agent or new procedure or not.
 - Unforeseen events that might affect continued ethical acceptability of the project.

Hunter New England Research Ethics & Governance Unit

(Locked Bag No 1)
(New Lambton NSW 2305)
Telephone (02) 49214 950 Facsimile (02) 49214 818
Email: hnehrec@hnehealth.nsw.gov.au
http://www.hnehealth.nsw.gov.au/Human_Research_Ethics

- If for some reason the above protocol does not commence (for example it does not receive funding); is suspended or discontinued, please inform Dr Nicole Gerrand, as soon as possible.

You are reminded that this letter constitutes ethical approval only. You must not commence this research project at a site until separate authorisation from the Chief Executive or delegate of that site has been obtained.

A copy of this letter must be forwarded to all site investigators for submission to the relevant Research Governance Officer.

Should you have any concerns or questions about your research, please contact Dr Gerrand as per her details at the bottom of the page. The Hunter New England Human Research Ethics Committee wishes you every success in your research.

Please quote **10/06/16/4.01** in all correspondence.

The Hunter New England Human Research Ethics Committee wishes you every success in your research.

Yours faithfully



For: Dr M Parsons
Chair
Hunter New England Human Research Ethics Committee

Hunter New England Research Ethics & Governance Unit

(Locked Bag No 1)
(New Lambton NSW 2305)
Telephone (02) 49214 950 Facsimile (02) 49214 818
Email: hnehrec@hnehealth.nsw.gov.au
http://www.hnehealth.nsw.gov.au/Human_Research_Ethics

23 August 2011

Professor Vicki Parker
Rm 16009
Byrne House
Rankin Park Campus

Dear Professor Parker

**Re: The actual and the potential of Inter-professional teamwork in rural health care
(10/06/16/4.01)**

HNEHREC Reference No: 10/06/16/4.01
NSW HREC Reference No: HREC/10/HNE/125
SSA Reference No: SSA/11/HNE/102

Thank you for submitting a request for an amendment to the above project. This amendment was reviewed by the Hunter New England Human Research Ethics Committee. This Human Research Ethics Committee is constituted and operates in accordance with the National Health and Medical Research Council's *National Statement on Ethical Conduct in Human Research (2007)* (National Statement) and the *CPMP/ICH Note for Guidance on Good Clinical Practice*. Further, this Committee has been accredited by the NSW Department of Health as a lead HREC under the model for single ethical and scientific review.

I am pleased to advise that the Hunter New England Human Research Ethics Committee has granted ethical approval for the following amendment requests:

- For the addition of Ms Karen McNeil as student researcher

For the protocol: **The actual and the potential of Inter-professional teamwork in rural health care**

Approval from the Hunter New England Human Research Ethics Committee for the above protocol is given for a maximum of **3** years from the date of the approval letter of your initial application, after which a renewal application will be required if the protocol has not been completed. The above protocol is approved until **August 2013**.

The *National Statement on Ethical Conduct in Human Research (2007)* which the Committee is obliged to adhere to, include the requirement that the committee monitors the research protocols it has approved. In order for the Committee to fulfil this function, it requires:

- A report of the progress of the above protocol be submitted at 12 monthly intervals. Your review date is **August 2011**. A proforma for the annual report will be sent two weeks prior to the due date.
- A final report must be submitted at the completion of the above protocol, that is, after data analysis has been completed and a final report compiled. A proforma for the final report will be sent two weeks prior to the due date.
- All variations or amendments to this protocol, including amendments to the Information Sheet and Consent Form, must be forwarded to and approved by the Hunter New England Human Research Ethics Committee prior to their implementation.
- The Principal Investigator will immediately report anything which might warrant review of ethical approval of the project in the specified format, including:
 - any serious or unexpected adverse events
 - Adverse events, however minor, must be recorded as observed by the Investigator or as volunteered by a participant in this protocol. Full details will be documented, whether or not the Investigator or his deputies considers the event to be related to the trial substance or procedure.
 - Serious adverse events that occur during the study or within six months of completion of the trial at your site should be reported to the Professional Officer of the Hunter New England Human Research Ethics Committee as soon as possible and at the latest within 72 hours.
 - Copies of serious adverse event reports from other sites should be sent to the Hunter New England Human Research Ethics Committee for review as soon as possible after being received.
 - Serious adverse events are defined as:
 - Causing death, life threatening or serious disability.
 - Cause or prolong hospitalisation.
 - Overdoses, cancers, congenital abnormalities whether judged to be caused by the investigational agent or new procedure or not.
 - Unforeseen events that might affect continued ethical acceptability of the project.
- If for some reason the above protocol does not commence (for example it does not receive funding); is suspended or discontinued, please inform Dr Nicole Gerrand, the Professional Officer of the Hunter New England Human Research Ethics Committee as soon as possible.

The Hunter New England Human Research Ethics Committee also has delegated authority to approve the commencement of this research on behalf of the Hunter New England Local Health District. This research may therefore commence.

Should you have any queries about your project please contact Dr Nicole Gerrand as per the contact details at the bottom of the page. The Hunter New England Human Research Ethics Committee Terms of Reference, Standard Operating Procedures, membership and standard forms are available from the Hunter New England Local Health District website:

Internet address: http://www.hnehealth.nsw.gov.au/research_ethics_and_governance_unit

Hunter New England Human Research Ethics Committee
 (Locked Bag No 1)
 (New Lambton NSW 2305)
 Telephone (02) 49214 950 Facsimile (02) 49214 818
 Email: hnehrec@hnehealth.nsw.gov.au
http://www.hnehealth.nsw.gov.au/research_ethics_and_governance_unit

Please quote **10/06/16/4.01** in all correspondence.

The Hunter New England Human Research Ethics Committee wishes you every success in your research.

Yours faithfully



For: Associate Professor M Parsons
Chair
Hunter New England Human Research Ethics Committee

Hunter New England Human Research Ethics Committee

(Locked Bag No 1)

(New Lambton NSW 2305)

Telephone (02) 49214 950 Facsimile (02) 49214 818

Email: hnehrec@hnehealth.nsw.gov.au

http://www.hnehealth.nsw.gov.au/research_ethics_and_governance_unit

9.2 Appendix 2: Interview Protocol

Interview Protocol & Questions

Instructions to the Interviewer

Arranging the interview

1. When a potential participant indicates their willingness to participate by return email, contact them to arrange a convenient time and place for an interview and forward a copy of the consent form sent by email.
2. Determine their preference for a face-to-face or telephone interview.
3. For face to face interviews, ensure that a private room is booked and that the situation will be comfortable for the participant and that water is available.
4. For telephone interview, ensure that a private room is booked and that the speaker on the phone is operational.
5. Ensure that the recording device has sufficient battery power and is operational. Ensure that spare batteries are on hand.

At the interview

1. Thank the participant for agreeing to be interviewed
2. Ensure that they are comfortable and offer them a drink – water (*for face-to-face*)
3. Ensure that the Consent Form has been signed
(*this needs to take place prior to the telephone interview*).
4. Reiterate that the interview should take approximately 1 hour and ensure that they have sufficient time to complete the interview.
5. Explain again that all the answers they will remain confidential and no information identifying individual participants will be published in any reports or papers.
6. Ensure again that they are comfortable with the interview being audio recorded and that you will tell them when you are starting and stopping the recorder.
7. Explain that during the interview they can ask for the tape to be stopped and edited or erased.
8. Add that you will be taking notes during the interview
9. If they decide that they would prefer not to be recorded, explain that they interview can proceed and that you will be taking notes.
10. Add that if they do not wish to answer a question they are not obliged to do so and if they wish to withdraw from participating at any time they can do so without giving a reason. They also have the option of withdrawing any data which identifies them.
11. Check whether they have any questions before you commence.

9.3 Appendix 3: Australian Research Council's (ARC) Excellence in Research for Australia (ERA) 2010 Rankings

The ARC's ERA (Australian Research Council (ARC), 2010) rankings discussed under the journal headings below are based on large coverage of journals (>20,000). These rankings were developed by expert panels on the basis of the following indicative criteria:

- Relative standing of the journal in other recognised lists (such as the Association of Business Schools)
- Citation metrics
- International standing of the editorial board
- Quality of peer-review processes
- Track record of publishing influential papers
- Sustained reputation

The rankings include four categories A*, A, B and C, which can be interpreted as indicating the following quality levels and impact:

Tier A*: Typically an A* journal would be one of the best in its field or subfield in which to publish and would typically cover the entire field/subfield. Virtually all papers they publish will be of a very high quality. These are journals where most of the work is important (it will really shape the field) and where researchers boast about getting accepted. Acceptance rates would typically be low and field leaders, including many from top institutions, would dominate the editorial board.

Tier A: The majority of papers in a Tier A journal will be of very high quality. Publishing in an A journal would enhance the author's standing, showing they have real engagement with the global research community and that they have something to say about problems of some significance. Typical signs of an A journal are relatively low acceptance rates and an editorial board which includes a reasonable fraction of well-known researchers from top institutions.

Tier B: Tier B covers journals with a solid, though not outstanding, reputation. Generally, in a Tier B journal, one would expect only a few papers of very high quality. They are often important outlets for the work of PhD students and early career researchers. Typical examples would be regional journals with high acceptance rates, and editorial boards that have few leading researchers from top international institutions.

Tier C: Tier C includes quality, peer reviewed, journals that do not meet the criteria of the higher tiers.

Proportion of Journals in each category – ERA List:

Number of Journals (Social, Behavioural & Economic Sciences)	A* tier	A tier	B tier	C tier
10,241	5%	15%	30%	50%

9.4 Appendix 4: Thomson Reuters Journal Citation Reports (JCR) and Impact Factors

The following excerpt provides an explanation of impact factors:

The *JCR* provides quantitative tools for ranking, evaluating, categorizing, and comparing journals. The impact factor is one of these; it is a measure of the frequency with which the "average article" in a journal has been cited in a particular year or period. The annual *JCR* impact factor is a ratio between citations and recent citable items published. Thus, the impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years...

The impact factor is useful in clarifying the significance of absolute (or total) citation frequencies. It eliminates some of the bias of such counts which favor large journals over small ones, or frequently issued journals over less frequently issued ones, and of older journals over newer ones. Particularly in the latter case such journals have a larger citable body of literature than smaller or younger journals. All things being equal, the larger the number of previously published articles, the more often a journal will be cited. (Web of Science, 2014, n.p.)

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