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An integrative review of facilitators and barriers influencing collaboration and teamwork between general practitioners and nurses working in general practice

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Abstract

Aim To identify facilitators and barriers influencing collaboration and teamwork between general practitioners and nurses working in general (family) practice. **Background** Internationally, a shortage of doctors entering and remaining in general practice and an increasing burden of chronic disease has diversified the nurse's role in this setting. Despite a well-established general practice nursing workforce, little attention has been paid to the ways doctors and nurses collaborate in this setting. **Design** Integrative literature review. **Data sources** CINAHL, Scopus, Web of Life, Cochrane Library, Joanna Briggs Institute Library of Systematic Reviews and Trove (dissertation and theses) were searched for papers published between 2000 and May 2014. **Review methods** This review was informed by the approach of Whittemore and Knafl (2005). All included papers were assessed for methodological quality. Findings were extracted, critically examined and grouped into themes. **Results** Eleven papers met the inclusion criteria. Thematic analysis revealed three themes common to the facilitators of and barriers to collaboration and teamwork between GPs in general practice: (1) roles and responsibilities; (2) respect, trust and communication; and (3) hierarchy, education and liability. **Conclusion** This integrative review has provided insight into issues around role definition, communication and organizational constraints which influence the way nurses and general practitioners collaborate in a team environment. Future research should investigate in more detail the ways doctors and nurses work together in general practice and the impact of collaboration on nursing leadership and staff retention.

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Conclusion: This integrative review has provided insight into issues around role definition, communication and organisational constraints which influence the way nurses and general practitioners collaborate in a team environment. Future research should investigate in more detail the ways doctors and nurses work together in general practice and the impact of collaboration on nursing leadership and staff retention.

Keywords: collaboration, teamwork, integrative review, physician-nurse relations, interprofessional, primary care, general practice.

SUMMARY STATEMENT

Why is this review needed?

- Collaboration between health professionals has been shown to improve health outcomes, patient/professional satisfaction and reduce healthcare costs. However, little is known about collaboration and teamwork between general practitioners and nurses.
- General practice has historically focussed on acute episodic care. A shift towards high complexity care is driving a need to explore collaboration between doctors and nurses in general practice.
- Identifying strategies which enhance collaboration between nurses and general practitioners has the potential to improve nursing leadership, workforce retention and patient outcomes.

What are the key findings?

- Nurses in general practice do not routinely participate in shared decision-making, goal setting or hold equal positions of power to their medical colleagues.
- Confusion around the nurse's scope of practice, hierarchical structures, territorialism, medico-legal obligations and poor communication create barriers to nurses and general practitioners collaborating in general practice.
- Evidence suggests that nurses and general practitioners work in a multidisciplinary work environment. However, this did not promote collaboration between disciplines, rather, nurses largely worked independently to general practitioners.

How should the findings be used to influence practice, research and education?

- Practice owners and managers may use this review to inform policies that ensure interventions are delivered by the most appropriate health professional in an efficient and timely manner.
- Findings highlight the need for further research to explore how a hierarchical business model, evident in general practice, can effectively promote collaboration between general practitioners and nurses.
- Findings can be used to inform curriculum development around factors influencing interprofessional working. This may facilitate the work readiness of future practitioners to effectively collaborate in primary care settings.

INTRODUCTION

A critical shortage of general (family) practitioners (GPs) and nurses is of international concern to the primary care workforce (Grover & Niecko-Najjum 2013, HWA 2012). Given the challenges associated with an increased prevalence of chronic and complex illness, it is important that primary care teams work collaboratively to ensure that the most appropriate health professional provides care in an efficient and timely manner. To date, however, the varied nature of clinical presentations in general practice and poorly defined nursing scopes of practice, challenge the way that tasks and leadership are delegated across the general practice team (Grover & Niecko-Najjum 2013, Jacobson 2012).

In most OECD countries (Organisation for Economic Co-operation and Development), including Australia, New Zealand and the United Kingdom (UK), general practices are recognised as providing continuous, comprehensive patient centred healthcare across the lifespan (OECD 2008). Similar health providers in Canada and the United States (US) are often referred to as family practices. Internationally, an increased retirement of general practitioners, GP burnout and a trend towards the feminisation and part-time employment of the GP workforce have exacerbated the shortage of doctors in this healthcare sector (Harrison & Britt 2011, Teljeur *et al*. 2010, Willard-Grace *et al*. 2014). In the US alone, the number of primary care doctors retiring from general practice will exceed the number entering the profession by 2016 (Schwartz 2012). This trend is replicated internationally throughout Canada, Europe, Australia and New Zealand (Liedvogel *et al*. 2013, Chamberlain 2010, McCarthy *et al*. 2012, Gutkin 2008, Royal College of General Practitioners 2013). To meet the demands associated with a growing shortage of GPs, it is increasingly important to look towards strategies which empower nurses in general practice to provide more care within their scope of practice (Bodenheimer & Smith 2013).

It is broadly recognised that the general practice environment is a complex and multidimensional work environment. Throughout the UK, US, Canada, Australia and New Zealand general practices are predominantly privately owned small business enterprises (Fuller *et al*. 2014, Crampton 2005). Income is largely generated via publicly funded national health insurance schemes or a blended payment model combining fixed capitation with variable fee for service (AMLA 2012, Fuller *et al*. 2014, Altschuler *et al*. 2012).

Demonstrating the diversity of the general practice workplace, practices may operate as either a solo practice; a multi-physician practice; a multifaceted corporate business where all staff (including doctors) are employees; or as a 'superclinic' which may include a pharmacy, radiology, community nurse and pathology (AMLA 2012). Adding to the complexity of the general practice workforce different categories of nurses are employed in general practice. These may include, but are not restricted to, Diploma prepared enrolled nurses with a limited scope of practice through to Baccalaureate prepared registered nurses and Masters prepared nurse practitioners with an extended scope of practice (AMLA 2012, Grover & Niecko-Najjum 2013).The nurse's role within this setting is subject to a range of environmental factors, including the practice size; patient demographics; practice structure and individual employment arrangements (AMLA 2012).

Background

Collaboration and teamwork between health professionals has been shown to be key elements in the delivery of cost effective health care, positive patient outcomes and enhanced patient and professional satisfaction (Barrett *et al*. 2007, Jacobson 2012, Zwarenstein *et al*. 2009). Other views however, link collaboration to conflict and poor team outcomes (Mitchell *et al*. 2010, Jansen 2008). This implies that despite its demonstrated benefits, collaboration between health professionals is a complex and multifaceted issue.

A frequent misconception associated with collaboration and teamwork, is the assumption that one is inextricably linked to the other (Xyrichis & Ream 2008). Whilst collaboration and teamwork share common characteristics around shared goals, decision making, trust and respect, the two comprise subtle differences in relation to leadership, power and autonomy (D'Amour *et al.* 2005, Taggart *et al.* 2009, Meads *et al.* 2005). Similar to collaboration and teamwork, shared care is also used to describe an approach where different health professionals work together and share skills, knowledge, decision making and responsibilities (Condon *et al.* 2000, McCann & Baker 2003). In a complex health system striving towards the delivery of high quality primary care, it is important that health professionals are able to differentiate characteristics of collaboration and teamwork within the context of their workplace.

Unlike the acute care literature, there has been limited research investigating the ways GPs and nurses work together in the general practice setting. However, it is surmised that both disciplines work in complimentary roles with a multidisciplinary approach to teamwork (Halcomb *et al.* 2006, Finlayson & Raymont 2012). In exploring multidisciplinary and interdisciplinary approaches to teamwork in settings outside of general practice, Körner (2010) noted that multidisciplinary teams comprise different disciplines with clearly defined roles, specific tasks and hierarchical lines of authority working independently and in parallel to each other. Further, multidisciplinary team members do not challenge disciplinary boundaries and interaction or collaboration across disciplines is limited (Choi & Pak 2006). Given the importance of optimising the quality of service provision, it is timely to investigate issues which influence collaboration and teamwork between nurses and doctors in general practice.

THE REVIEW

Aim

The aim of this integrative review was to identify the facilitators and barriers influencing collaboration and teamwork between general practitioners and nurses working in general (family) practice.

Design

The conduct of this integrative review was guided by the framework described by Whittemore and Knafl (2005). This methodological approach allows the simultaneous synthesis of qualitative and quantitative research methods (Whittemore & Knafl 2005). Similar data are extrapolated, reduced and categorised for analysis in succinct chronological themes. Visualisation within a single matrix allows an iterative process of evaluation to isolate patterns, commonalities and emerging themes (Whittemore & Knafl 2005). Conclusions are drawn from each theme and integrated into a summary statement (Whittemore & Knafl 2005).

Search strategy

A multistep approach was employed in the search for primary literature. This included keyword searching of electronic databases, systematically investigating the reference list of identified papers and hand searching of relevant publications (Conn *et al*. 2003). Databases searched were CINAHL, Scopus, Web of Life, Cochrane Library, Joanna Briggs Institute Library of Systematic Reviews and Trove (dissertation and theses). Search terms included collaboration, team, multidisciplinary, interdisciplinary, interprofessional, nurse, physician, general practice, general practitioner, family practice, family medicine and primary care. As general practice is an ever changing environment, studies were only included if they were published between January 2000 and May 2014 (Table 1).

Due to resource constraints only peer-reviewed papers published in the English language were included. Primary research papers were eligible for inclusion if any of the findings related to collaboration or teamwork between GPs and nurses working in general practice. Studies which did not isolate or allow extraction of data between GPs and nurses working in general practice were excluded. Papers examining collaboration between GPs and nurse practitioners in general practice have a fundamentally different focus and so were excluded from this review. Similar consideration was applied to papers exploring collaboration between GPs and other allied health professionals and consumers. Interventions aimed at improving collaboration between GPs and nurses to enhance care for a specific patient group were excluded from this review as they reported outcomes related to health rather than collaboration.

Table 1. Eligibility Criteria

Inclusion criteria	Exclusion criteria
• Paper reports on collaboration or teamwork between a nurse and a doctor working in general practice. • Published between January 2000-May 2014. • Published in a peer-reviewed journal. • Published in the English Language.	• Unable to isolate or extract data around collaboration or teamwork between the GP and nurse working in general practice. • Paper examines collaboration or teamwork between GP and consumers, nurse practitioners or other allied health professionals. • Discussion papers, literature reviews, anecdotal reports or editorials.

Search outcomes

Results from all database searches were exported into Endnote© Version 7. All duplicates were removed. Remaining titles and abstracts were screened for relevance based on inclusion and exclusion criteria by one author. Two authors independently screened remaining papers as suitable for inclusion. Consensus was reached by all authors on papers for full review. In total, 11 papers met the inclusion criteria for this integrative review (Figure 1).

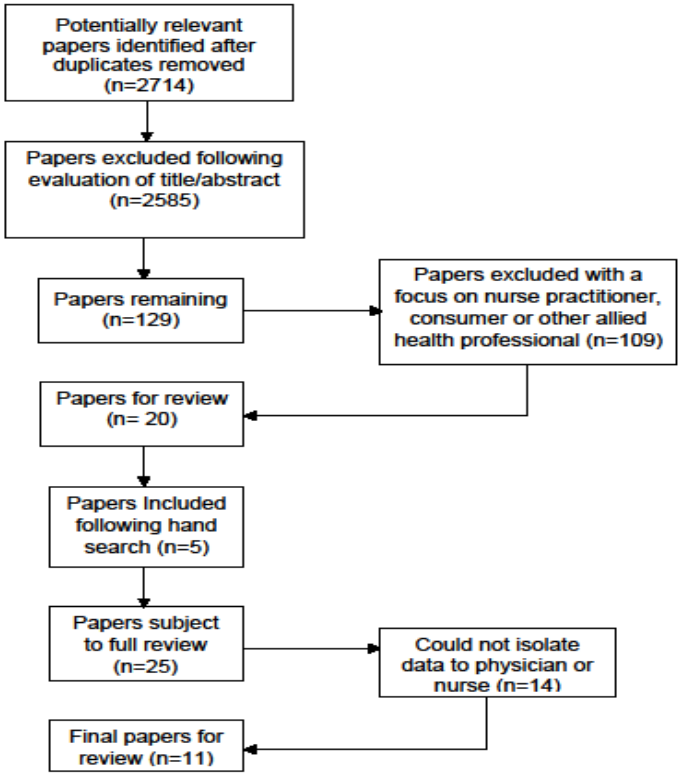

Figure 1. Process of paper selection – Prisma Flow diagram

Appraisal of methodological quality

According to Whittemore and Knafl (2005), there is no gold standard for assessing methodological quality. Confirming a lack of valid criteria for the concomitant appraisal of methodological quality, Pluye *et al.* (2009), developed a set of guidelines for the conduct and reporting of mixed studies. Similar guidelines for the critical review of qualitative literature were revised by Letts *et al.* (2007) and were also used to appraise the methodological quality

of papers in this integrative review. Qualitative studies in this review were considered to be of low methodological quality if data saturation was not achieved, consent was not gained and the researchers influence on the study was not addressed (Letts *et al*. 2007). Mixed methods studies which did not describe the sampling, variables, methods to combine data or analysis were considered to be of low methodological quality (Pluye *et al*. 2009).

Topic relevance was based on inclusion and exclusion criteria (Whittemore & Knafl 2005). Papers included in this review were similar in their methodological quality and met all key considerations relevant to the study. No paper was rejected based on methodological quality (Whittemore & Knafl 2005)

Data abstraction and synthesis

Given the heterogeneity of the included literature, meta-analysis was not possible and therefore, thematic analysis was undertaken (Braun & Clarke 2006). To facilitate analysis, data were extracted into an evidence table. The tabulation of qualitative and quantitative findings within a single matrix supported the fusion of both narrative and statistical data (Whittemore 2005). Patterns and relationships were identified via an iterative process where the findings of all included studies were carefully read line by line. Analysis of data occurred as outcomes were coded according to similarities and differences and verified for accuracy and relevancy by all authors (Whittemore 2005, Braun & Clarke 2006). Data in each theme were compared and contrasted (Pfaff *et al*. 2014).

RESULTS

After the removal of duplicates, the initial database search identified 2714 papers. 2585 papers were excluded based on title and abstract. A further 109 papers reporting on collaboration between GPs and nurse practitioners, other health professions or consumers did

not meet the inclusion criteria. In total, 25 papers were subject to a full review. Of these, 14 papers did not isolate data to either the general practitioner or nurse and were also excluded.

Eleven papers met the inclusion criteria and are presented in an evidence table (Table 2). These 11 papers described 9 separate studies, with two studies (22%) producing 2 papers each (Condon *et al.* 2000, Willis *et al.* 2000, Pullon 2008, Pullon *et al.* 2009). Three studies (33%) were conducted in New Zealand, 3 (33%) were undertaken in Europe (Finland, Germany and France), 2 (22%) in Australia and 1 (11%) in Canada. Most studies reported using qualitative methods (n=7; 78%), whilst 2 (22%) studies reported mixed methods.

Defining collaboration and teamwork

Two papers (18%) sought to explore collaborative models in general practice (Vedel *et al.* 2013, Akeroyd *et al.* 2009), three papers (27%) focused on teamwork (Jaruseviciene *et al.* 2013, Finlayson & Raymont 2012, Pullon *et al.* 2011) and two papers (18%) (Condon *et al.* 2000, Willis *et al.* 2000) investigated aspects of shared care in general practice. Only Pullon *et al.* (2009) explored both collaboration and teamwork in general practice. Three other papers focused on increasing the clinical integration of nurses in general practice (Pullon 2008, Rosemann *et al.* 2006, Lockwood & Maguire 2000).

Before we could synthesise the review findings it was clear that there was variation in defining collaboration and teamwork. Understanding these differences helped to contextualise the subsequent themes. Only one study provided a detailed definition around the concept of interprofessional collaboration (Akeroyd *et al.* 2009). Despite assertions in the preamble that collaboration and teamwork depend on effective interprofessional relationships, Pullon (2008) did not provide a clear, formal definition of either collaboration or teamwork. This however, was not an isolated omission. Both Vedel (2013) and Rosemann *et al.* (2006) support collaborative models of care and team approaches, yet do not provide

the reader with a substantial definition of either. Whilst Pullon *et al.* (2011) does describe multidisciplinary, interdisciplinary and transdisciplinary teamwork, the explanations relate solely to the adjective, not the underlying concept of teamwork. Further definitions which were provided around collaboration and teamwork were largely limited to brief descriptions around different disciplines working together to improve patient outcomes (Condon *et al.* 2000, Willis *et al.* 2000, Pullon *et al.* 2009, Jaruseviciene *et al.* 2013).

Facilitators of and Barriers to collaboration and teamwork

Analysis identified three themes common to the facilitators of and barriers to collaboration and teamwork between GPs and nurses working in general practice. Namely; (1) roles and responsibilities; (2) respect, trust and communication and (3) hierarchy, education and liability. Each of these are discussed in more detail below.

Roles and responsibilities

In terms of clinical responsibility, only one study verified that the participating practice nurses were registered nurses (Akeroyd *et al.* 2009). Condon *et al.* (2000), however, did report that one GP found it difficult to share care when the practice nurse was an enrolled nurse. A lack of clarity around nursing roles and scope of practice were reported as clear barriers to GPs and nurses working together (Condon *et al.* 2000, Rosemann *et al.* 2006, Vedel *et al.* 2013, Akeroyd *et al.* 2009, Lockwood & Maguire 2000). Territorialism around GPs protecting their own professional boundaries and expertise was also noted to cause tension and confusion (Vedel *et al.* 2013, Jaruseviciene *et al.* 2013, Rosemann *et al.* 2006), particularly when roles were perceived to overlap (Jaruseviciene *et al.* 2013). In contrast, clearly defined roles and shared leadership, which were skill set dependent, were viewed as key elements facilitating teamwork (Pullon *et al.* 2011).

Whilst GPs and nurses considered their professions to be complementary (Pullon 2008), team synergy was reported to be dependent on GPs delegating tasks to nurses (Condon *et al.* 2000, Willis *et al.* 2000, Rosemann *et al.* 2006, Finlayson & Raymont 2012, Jaruseviciene *et al.* 2013). In support of this assertion, Finlayson *et al.* (2012) identified that 68% of the nurses' work was delegated by the doctor. This practice led GPs and nurses to work independently from each other (Finlayson & Raymont 2012) and nurses to be dependent on the flow of work from doctors (Condon *et al.* 2000).

General practitioners were largely supportive of nurses expanding their role in the practice setting. Indeed, Finlayson *et al.* (2012) reported that 98% of New Zealand GPs participating in their survey encouraged nurses to expand their role to both increase the efficiency of the practice and to free up the GPs time. Two studies however, reported that nurses sometimes resisted requests by GPs to expand their role (Akeroyd *et al.* 2009, Condon *et al.* 2000). Reasons for resistance confirmed that similar to GPs, nurses also lacked clarity around their roles and responsibilities. That is, some nurses did not view role expansion within their scope of practice, (Akeroyd *et al.* 2009) or health promotion and education as part of their role (Condon *et al.* 2000).

Respect, trust and communication

Respect and trust were overwhelmingly represented as facilitating collaboration in general practice (Akeroyd *et al.* 2009, Lockwood & Maguire 2000, Jaruseviciene *et al.* 2013, Condon *et al.* 2000, Pullon *et al.* 2011, Pullon 2008). Pullon *et al.* (2008) clarified this representation by reporting that confidence in professional competence underpinned trust and respect. Further, in the context of gaining respect for professional competence, trust had to be earned and developed (Pullon 2008).

On average, only 11.5% of GPs would discuss a case with nurses (Finlayson & Raymont 2012). This is somewhat similar to Condon *et al.* (2000) who did not find evidence of shared care between doctors and nurses. Despite this, as doctors developed trust in the nurses abilities, they were more likely to acknowledge their expertise, particularly in relation to wound management (Condon *et al.* 2000). Conversely, a GPs distrust in the nurse's knowledge and skills to perform competently was negatively associated with collaboration (Akeroyd *et al.* 2009). Paradoxically, some doctors viewed nurses in general practice as a resource and complementary to their services, but did not accept the nurse as a peer with whom to engage in shared care (Willis *et al.* 2000, Pullon 2008).

A shared commitment to primary care, open channels of communication and an awareness of each profession's roles and responsibilities were identified as additional antecedents to teamwork (Jaruseviciene *et al.* 2013, Pullon *et al.* 2011, Pullon 2008). Poor communication and exclusion from activities such as practice meetings were negatively associated with teamwork (Condon *et al.* 2000, Akeroyd *et al.* 2009, Finlayson & Raymont 2012).

Hierarchy, education and liability

Nurses described that by their very nature, hierarchical structures, endemic in privately owned and operated small business general practices limited collaboration with GPs (Finlayson & Raymont 2012). Indeed, Finlayson *et al.* (2012) identified that no nurse held a board position on any of the 237 practices participating in their survey. Further, only thirty-seven percent of nurses attended practice meetings which provided opportunities to address management decisions (Finlayson & Raymont 2012). Nurses also reported that the traditional status of doctors was the impetus for assuming the GP as the team leader (Jaruseviciene *et al.* 2013).

It was further reported that hierarchical structures and government subsidised fee for service, were biased towards the remuneration of doctor/patient encounters (Pullon *et al.* 2009,

Condon *et al.* 2000, Lockwood & Maguire 2000, Finlayson & Raymont 2012). Such financial structures made it difficult to calculate the true cost benefit of nurses to the small business environment of general practice (Condon *et al.* 2000). Funding structures, including those which supported patient/team encounters and salaried positions reportedly improved access to services, enhanced efficiency and promoted teamwork (Pullon *et al.* 2009, Lockwood & Maguire 2000).

Both GPs and nurses felt that their training was largely unidisciplinary and that this negatively influenced their ability to work collaboratively as a team with other disciplines (Pullon *et al.* 2009). Whilst doctors reported a strong bio-medical, content based education (Pullon *et al.* 2009), the largely experiential learning of nurses working in general practice limited their integration with medical practitioners (Pullon *et al.* 2009, Rosemann *et al.* 2006, Lockwood & Maguire 2000). Additionally, doctors strongly believed that the education of nurses did not support their role as autonomous clinicians (Akeroyd *et al.* 2009, Rosemann *et al.* 2006). Nurses felt that educational programs would lead to improved competencies and greater allocation of care by GPs (Jaruseviciene *et al.* 2013).

Doctors operating small business enterprises were also cognisant of potential legal implications created by the autonomous practice of nurses and the subsequent exposure of themselves to a degree of risk (Condon *et al.* 2000). Doctors did however, recognise that nurses working in general practice improved awareness of health services to the broader community and helped reduce the sense of isolation experienced by solo medical practitioners (Lockwood & Maguire 2000).

DISCUSSION

Much of the international literature around collaboration in general practice has focussed on collaboration between GPs and community pharmacists (Dey *et al.* 2011, Jove *et al.* 2014),

nurse practitioners (Almost & Laschinger 2002, Clarin 2007, Schadewaldt *et al.* 2013) and allied health providers (Chan *et al.* 2010, Frost *et al.* 2012). This integrative review has now synthesised knowledge around ways that GPs and nurses collaborate in a team environment in general practice. It has reaffirmed that internationally, researchers and healthcare workers often blend or interchange attributes of collaboration and teamwork into a single entity (Xyrichis & Ream 2008). Further, this integrated review has identified that there is limited knowledge around the hierarchical constraints particular to general practice and the influence that these have on collaboration and teamwork.

Perhaps the most significant antecedent to be overlooked in the context of collaboration between GPs and nurses was the omission of nurses as valued participants at practice meetings. Significantly, practice meetings provide opportunities for disciplines to share decision-making, goal setting and responsibilities, each a core component of collaboration and teamwork (D'Amour *et al.* 2005, Xyrichis & Ream 2008). Brief, yet succinct practice meetings also enhance interprofessional awareness and provide nurses with opportunities to present their own professional skills and capabilities (General Practice Supervisors Australia 2014, Goldman *et al.* 2010).

Consistent with previous literature, this review found that the flow of work to nurses largely relied on the delegation of tasks and activities that provide remuneration to the practice (Bernard *et al.* 2005, Halcomb *et al.* 2008a). Rather than collaboration, delegation by the GP was perceived to improve the efficiency of the practice and allowed doctors to coordinate care and spend more time on complex cases (Bernard *et al.* 2005, Walker 2006). The conundrum however, is that effective delegation is dependent on a clear definition of the nurse's role; confidence in each other's competencies; trust; and positive feedback (Sibbald 2003). Papers included in this review consistently revealed significant confusion around the nurse's role and scope of practice, variable levels of trust and confidence in the nurse's

competencies and minimal evidence of open communication. Indeed, poor attendance by nurses at practice meetings limited opportunities to provide feedback or input into the management of health related care and clearly questions whether the handmaiden has truly been farewelled.

Previous literature asserts that the varied nature of clinical presentations in general practice makes defining the nurse's scope of practice challenging (Grover & Niecko-Najjum 2013). However, it is of some concern that despite a long history of nursing in general practice, internationally, there remains significant confusion between and among disciplines regarding the nurse's scope of practice and the nurses perceived and actual roles (McCarthy *et al.* 2012, Jaruseviciene *et al.* 2013, MacNaughton *et al.* 2013). The consistent lack of clarity around the nurse's scope of practice identified in this review would appear to question the contractual framework of nurses working in general practice and the need for clearly defined job descriptions.

This review supports assertions in the literature that nurses and GPs work within the confines of a multidisciplinary work environment (Finlayson & Raymont 2012, Halcomb *et al.* 2006). Similar to settings outside general practice, hierarchical lines of authority were evident, nurses did not challenge disciplinary boundaries, the nurse's work was largely limited to specific tasks and there was limited evidence of collaboration between GPs and nurses (Körner 2010, Choi & Pak 2006). Indeed, this review found minimal evidence of shared knowledge between doctors and nurses. Any evidence suggesting that doctors conferred with nurses was largely isolated to wound management (Condon *et al.* 2000). To enhance collaboration and teamwork, GPs and nurses should strive towards a higher functioning interdisciplinary work arrangement where disciplines jointly and collaboratively set treatment plans and goals (Körner 2010).

It is clear from this review that the business model found in general practice frequently dictated power and leadership to the GP and that this negatively influenced the way nurses and GPs worked together. It is also evident that disparate job descriptions, role confusion and a lack of clarity around the nurse's scope of practice impact opportunities for nursing leadership in general practice (Halcomb *et al*. 2008b, Al Sayah *et al*. 2014). However, like pharmacists and allied health professionals, it is evident that nurses working in general practice can play an integral role in a collaborative team environment (Jacobson 2012). To enhance the productivity and quality of care, practice owners and managers must develop strategies which ensure that the most appropriate health professional delivers effective interventions in an efficient and timely manner. Leadership by the GP however, should not be interpreted as counter-productive to the functioning of general practice teams (MacNaughton *et al*. 2013). Rather, the GP's position of power should be used to positively develop the nurses' responsibilities and enhance collaborative interaction with nurses (MacNaughton *et al*. 2013).

Whilst the lack of clarity around the categories of nurses employed in general practice is a significant and on-going issue, leadership by the GP is also tied to the perception that as employers, GPs are liable for the standard of the nurses work (Phillips *et al*. 2008). Consistent with the literature, malpractice and liability issues were barriers to GPs relinquishing clinical leadership to nurses in general practice (Thornhill *et al*. 2008). This perception however, does not acknowledge nurses in general practice as clinicians with a decision making framework and scope to practice as autonomous clinicians (ANF 2005, Phillips *et al*. 2008). To both expand the role of nurses in general practice and to promote the clinical leadership of nurses in this setting, it is important that the indemnity of nurses in this setting is clarified.

Implications for practice, research and education

More nurses are working in general practice than ever before. However, despite the rhetoric around collaboration and teamwork, there is little evidence in the literature to show how general practitioners and nurses collaborate in a team environment. Findings from this review have therefore highlighted the need for further research to explore how a hierarchical business model, subject to complex ownership structures and reliant on the remuneration of fees for service, can promote collaboration between nurses and general practitioners. Given that the environment of general practice has historically focussed on solo doctors providing low acuity care, it is now important to understand how doctors and nurses can cohesively provide high complexity chronic care. To date however, the varied nature of clinical presentations in general practice and poorly defined nursing scopes of practice have challenged the way that doctors and nurses collaborate and delegate tasks and leadership across the general practice team. Findings from this review may also be used by tertiary institutions to inform curriculum development around factors influencing interprofessional working. Such preparation at a tertiary level may facilitate the work readiness of future practitioners so that they may effectively collaborate in primary care settings.

Limitations

This integrated review has several limitations. Firstly, despite the widespread employment of nurses in general practice there has been limited research published around how GPs and nurses collaborate and work as a team in this setting. Further, in the current literature there is limited definition around the concepts of collaboration and teamwork as they apply to general practice settings. Australian studies in this review also occurred prior to federal government initiatives designed to stimulate and expand the role of nurses in general practice. It may therefore be presumed that nurses working in general practice prior to these initiatives may have experienced minimal collaboration with GPs. Whilst these limitations may influence

the generalisability of the findings, this integrative review is the first review to examine factors which influence the way GPs and nurses collaborate and work as a team in general practice.

CONCLUSION

As the number of doctors entering and remaining in general practice declines, it is crucial that nurses are supported and encouraged to participate in decision-making processes and goal setting of the practice. Without the concerted support of GPs and clarity around the nurse's scope of practice, it is likely that nurses working in general practice will not receive recognition as a highly competent and respected interdisciplinary member of the general practice team. Further research exploring collaboration and teamwork between GPs and nurses working in general practice may provide insight into the issues which influence nursing leadership and staff retention in this hierarchical healthcare setting.

Conflict of Interest

Nil conflicts

Table 2: Evidence Table

Reference	Focus	Country	Sample	Methods	Findings
Akeroyd et al. (2009)	Healthcare professionals' perception of the nurses role as it relates to inter-professional collaboration (IPC)	Canada	Practices (3) Managers (2) Dietician (1) Physician (11) RN (6) OT (2) Pharmacist (1)	Qualitative Interviews and observation	1) Role ambiguity: The RN's role in family practice is poorly contextualised or defined. Rather, it is defined by tasks and blurred with the roles of other practice members. 2) Trustworthiness: A critical factor in the collaboration between physician and RN. Higher trustworthiness is associated with greater collaboration.
Condon et al. (2000)	Areas of effective shared care between GPs and PNs	Australia	Practices (8) GP (10) Nurse (9) NP (2)	Qualitative Interviews	1) GPs and practice nurses have effective working relationships that enhanced patient care. 2) Shared care was not found except around wound management

Reference	Focus	Country	Sample	Methods	Findings
Finlayson and Raymont (2012)	Teamwork between GPs and PNs	New Zealand	Practices (276) GPs (277) PNs (384)	Mixed methods Survey & Interview	1) New Zealand doctors and nurses see themselves as a team. 2) The nature of work and business context lends itself to a multidisciplinary style of teamwork.
Jaruseviciene et al. (2013)	Constituents of teamwork in primary health care	Lithuania	GPs (29) Community Nurses (27) (working in a general practice)	Qualitative Focus Groups	1) GPs and nurses formed the basis of the PHC team; 2) Team synergy depended on having a commitment to the team, trust, respect and to obey the GP; 3) Communication is important to teamwork; 4) GPs dominated leadership in PHC teams; 5) Some GPs would like nurses to be more independent yet nurses had to fulfil tasks delegated by the GP.
Lockwood and Maguire (2000)	Establishing professional partnerships between GPs and PNs.	Australia	GPs (21) Nurses (5) Managers (5)	Mixed methods Survey, interview and case study	1) Nurses improved access and provided better quality of care; 2) Inability to claim remuneration limited the services of nurses; 3) Doctors and nurses reported improved knowledge of the others profession.

Reference	Focus	Country	Sample	Methods	Findings
Pullon (2008)	Attitudes and perceptions regarding the roles and relationships of doctors and nurses working in primary care	New Zealand	9 GPs 9 nurses	Qualitative Interviews	1) Effective interprofessional relations do exist in the New Zealand primary care setting, but not always. 2) Business roles and professional identify form the basis of trust in interprofessional relationships 3) Professional identify is related to professional competence which leads to professional respect and enduring trust.
Pullon et al. (2009)	Perceptions of inter professional relationships, teamwork, and collaborative patient care	New Zealand	9 GPs 9 nurses	Qualitative Interviews	1) Fee for service, task based funding models discourage collaboration; 2) Teamwork was promoted when health services were bulk billed rather than individual practitioners; 3) Uninterrupted time for meetings, open communication and interprofessional respect promoted good teamwork; 4) Salaried doctors and nurses facilitated teamwork; 5) Training in teamwork was limited.
Pullon et al. (2011)	Feasibility of implementing a collaborative care model	New Zealand	GPs (2) Nurses (2) Patients with at least 2 chronic conditions (4)	Qualitative Interviews	1) Good communication facilitated teamwork; 2) Trust and interprofessional respect were important to teamwork; 3) Clearly defined roles are a prerequisite for effective teamwork; 4) Leadership should be shared and skill set dependent.

Reference	Focus	Country	Sample	Methods	Findings
Rosemann et al. (2006)	Involvement of practice nurses in patient care, possible areas of increased involvement and existing barriers.	Germany	20 GPs 20 Nurses 20 Patients	Qualitative Interviews	1) Practice nurses are only marginally involved in the treatment of patients. 2) GPs were sceptical about increasing the nurse's involvement in patient care. 3) GPs complained about the nurse's education and lack of medical knowledge. 4) Nurses were willing to be more involved but lacked time, were overloaded with administrative work and lacked professional knowledge.
Vedel et al. (2013)	Decision to adopt –or not- collaborative team models	France	Phase 1: primary care physicians (175) nurses (59) Phase 2: Primary care physician (40) Nurses (15)	Qualitative Longitudinal case study Observation and Interviews	1) Nurses were more likely to adopt collaborative team models than GPs. 2) Opinion leaders played a key role in the rate of adopting collaborative team models.
Willis et al. (2000)	Working relationships between GPs and PNs	Australia	Practices (6) GPs (10) Nurses (9) NP (2)	Qualitative Interviews	1) Despite nurses being highly skill clinicians, shared care is not a reality; 2) Questions emerged around the potential to expand the practice nurses role.

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Table 1. Eligibility Criteria

Inclusion criteria	Exclusion criteria
• Paper reports on collaboration or teamwork between a nurse and a doctor working in general practice. • Published between January 2000-May 2014. • Published in a peer-reviewed journal. • Published in the English Language.	• Unable to isolate or extract data around collaboration or teamwork between the GP and nurse working in general practice. • Paper examines collaboration or teamwork between GP and consumers, nurse practitioners or other allied health professionals. • Discussion papers, literature reviews, anecdotal reports or editorials.

Table 2: Evidence Table

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Willis *et al*. (2000)	Working relationships between GPs and PNs	Australia	Practices (6) GPs (10) Nurses (9) NP (2)	Qualitative Interviews	3) Despite nurses being highly skill clinicians, shared care is not a reality; 4) Questions emerged around the potential to expand the practice nurses role.

GP: General Practitioner, PN: Practice Nurse, NP: Nurse Practitioner, OT: Occupational Therapist

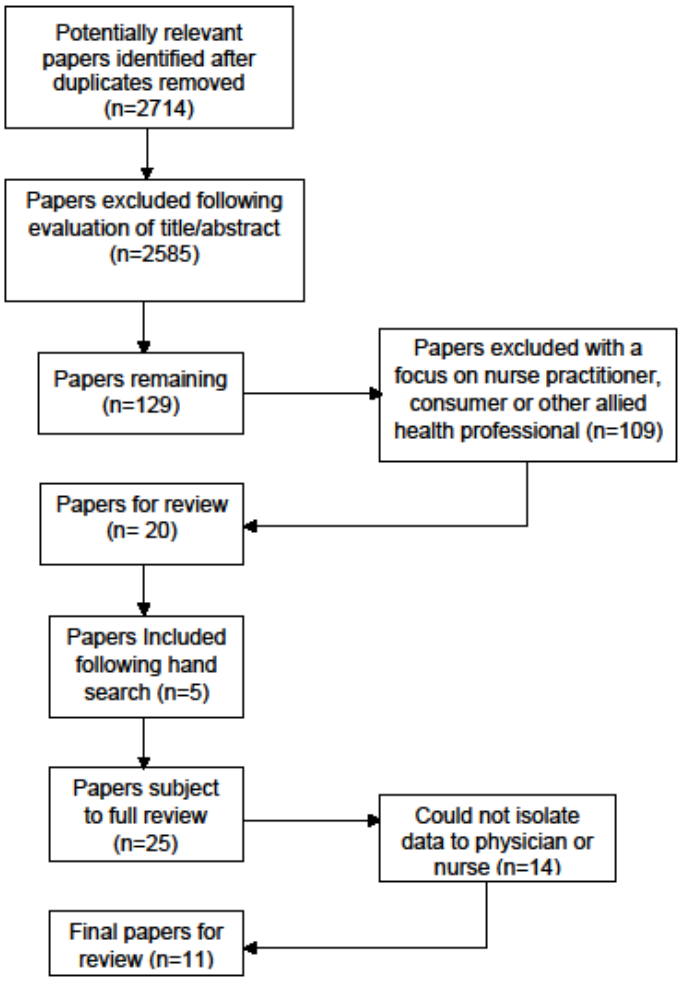

Figure 1: Process of paper selection – Prisma Flow diagram