



Australian
National
University



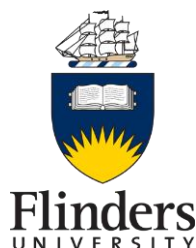
THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

General Practice from the perspective of a Learning Organisation

Anne Sinclair^{1,2}, Julie Johnson^{1,5}, Joanne Travaglia³,
Jeff Fuller^{1,4}

¹ Australian Primary Health Care Research Institute, Centre of Research Excellence in Primary Health Care Microsystems;

² Australian Institute of Health Innovation, University of New South Wales; ³ School of Public Health and Community Medicine, University of New South Wales; ⁴ School of Nursing and Midwifery, Flinders University, ⁵ Northwestern University, Chicago, USA.



ACKNOWLEDGEMENTS

Thanks to all the general practices staff and patients who generously shared their time and experiences to participate in this study.

This research is a project of the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health. The information and opinions contained in it do not necessarily reflect the views or policy of the Australian Primary Health Care Research Institute or the Australian Government Department of Health.

CITATION

Sinclair A, Johnson J, Travaglia J, Fuller J. General Practice from the Perspective of a Learning Organisation. APHCRI Centre of Research Excellence in Primary Health Care Microsystems, The University of Queensland, 2014.

APHCRI Centre of Research Excellence in Primary Health Care
Microsystems
Discipline of General Practice
The University of Queensland
Level 8 Health Sciences Building, Building 16/910
Herston, QLD 4029 Australia
T 61 7 3365 5545
F 61 7 3346 5178
E t.janamian1@uq.edu.au
www.aphcricremicrosystems.org.au

CONTENTS

Background.....	5
Context of the study.....	5
Aim.....	5
Research Questions.....	6
Literature review.....	6
Database Searches.....	6
Website Searches.....	6
Definitions.....	7
Why be a Learning Organisation?.....	7
Methods.....	8
Analysis.....	8
Study population.....	8
Participants.....	9
Tools.....	9
Results.....	9
The organisational context – an overview.....	9
Response rates.....	10
Years of experience.....	10
Base level qualifications.....	10
Postgraduate qualifications.....	10
Preparation for role.....	11
Professional Development.....	11
Dimensions of a Learning Organisation Questionnaire.....	12
Semi-structured interviews.....	13
Patients' results.....	24
Discussion.....	26
What characteristics of learning organisations do NSW general practice microsystems display?.....	27
How are learning needs addressed in general practice microsystems?.....	29
How does formal and informal learning occur in general practice microsystems?.....	30
Recommendations.....	30
Study limitations.....	31
References.....	32

APPENDIX ONE. Figure 1. Process Of Extracting, Identifying And Reviewing Literature On General Practice As A Learning Organisation	35
APPENDIX TWO – Figure 2. Study Design	36
APPENDIX THREE. Practice Staff Questionnaire	37
APPENDIX FOUR. Patient Survey	41
APPENDIX FIVE. Practice Manager Questionnaire	43
APPENDIX SIX. Tool Selection And Development Supplement	45
Quantitative data collection tools.....	45
Qualitative data collection tools.....	46
APPENDIX SEVEN. Practice Details	47
APPENDIX NINE. Aggregated DLOQ Scores	48
APPENDIX EIGHT. Staff Location And Designation For Completion Of DLOQ & Interviews	49
APPENDIX TEN. Supplementary Interview Questions	50
APPENDIX ELEVEN. Key Themes From Semi-Structured Interviews	51
APPENDIX TWELVE. Comparison Of DLOQ mean scores Across Studies	52

Background

CONTEXT OF THE STUDY

The focus of the study is situated in future directions for the health care of NSW residents. Across the world and in Australia it has been recognised that more emphasis needs to be placed on primary care with the goal of improving health outcomes and reducing health costs and health inequities ¹⁻³. With the need to reposition the Australian healthcare workforce in response to federal health reforms ³ and in order to meet the primary healthcare needs of future populations ^{1 4} a key strategy of NSW 2021 ⁵ is preventive health and effective management of chronic disease. The general practice microsystem is at the forefront of service provision.

A narrative literature review technique was conducted to discuss and synthesise ideas concerning the application and enactment of learning organisation theory in Australia particularly regarding general practice microsystems. A narrative literature review offers the advantage of integrating qualitative and quantitative evidence ^{6 7} and providing a broad coverage of issues on a topic ⁸⁻¹⁰. In order to overcome the perceived shortcomings of narrative reviews such as bias ^{9 11} and lack of transparency ^{8 9}, concepts investigated, search terminology used and inclusion and exclusion criteria for articles selected are carefully and succinctly explained.

A mixed method approach was chosen for the study as it incorporates the use of qualitative and quantitative strategies and results in collection of data that represents differing lenses ^{12 13}, perspectives and viewpoints ¹⁴. Quantitative data collection included data from staff (administrative, nurses and doctors), practice managers and patient questionnaires while qualitative data was derived from staff and practice manager interviews.

This project was part of the APHCRI CRE in Primary Health Care Microsystem which is a collaboration between The University of Queensland, Flinders University, University of New South Wales, Greater Green Triangle University Dept. of Rural Health, Mater Health Services, and other stakeholders www.aphcricremicrosystems.org.au/.

AIM

The aim of this study was to explore general practice microsystems from a learning organisation perspective focusing on general practice in New South Wales.

Learning organisations encourage learning, innovation and improvement and thereby increase organisational capacity to adapt to changing environments. In the business world, entities that have demonstrated excellence as learning organisations have also demonstrated innovation, market dominance and economic viability. Adoption and cultivation of the characteristics of the learning organisation has the potential to improve the quality and safety of care provided, benefiting health care delivery systems, consumers of primary healthcare, and the community and make a measurable difference to patient care ¹⁵.

‘A clinical microsystem is a small group of people who work together on a regular basis to provide care to discrete subpopulations of patients’ ^{16:474}. Features of high performing clinical microsystems include patient centred goal driven care achieved in an organised system (informatics and procedural), which recognises and appreciates staff contributions. There is significant overlap of these features and those attributed to learning organisations. This study has increased understanding of learning within a primary care setting.

RESEARCH QUESTIONS

The overarching question for this study: Are NSW general practice microsystems learning organisations?

In order to answer this question the following was explored:

- 1) What characteristics of learning organisations do NSW general practices microsystems display?
- 2) How does formal and informal learning occur in general practice microsystems?
- 3) How are learning needs addressed in the general practice microsystem?

LITERATURE REVIEW

Database Searches

The review was conducted between October 2012 and June 2013. The literature search included the following terms in multiple combinations – learning organization/organisation, learning inventory, learning questionnaire, microsystems, primary healthcare, Australia, general practice and family medicine. Searches were conducted for articles written in English in MEDLINE, EMBASE, CINAHL, ERIC, Informit e-Library: health collection and EBM Reviews: Cochrane Database of systematic reviews with date limiters of 1990 to current. In addition to Informit which focuses on the publications from Australia, New Zealand and the Asia Pacific region, these databases were identified as having extensive coverage of health, education and organisational learning related content.

Website Searches

Concurrently targeted searches using the same search terms were made of websites of leading health organisations, or organisations that have contributed significantly to research into improvement in healthcare such as the Robert Wood Johnson Foundation (USA), Microsystem Academy (The Dartmouth Institute, USA), National Health Service (UK), Institute for Healthcare Improvement (USA), NSW Ministry of Health (Australia), Australian Government (Health) and Kaiser Permanente (USA). . No additional relevant resources were located in these website searches.

A summary of the search results are presents in Appendix One. Figure 1. Process of extracting, identifying and reviewing literature on general practice as a learning organisation. Inclusion and exclusion criteria were broadened after initial searching owing to the relative paucity of work published on learning organisations in healthcare, the measurement of learning organisations in healthcare and the concept of clinical microsystems. Articles were included if they discussed learning organisations in the broader field of health care, including reference to general practice, family medicine, primary care, microsystems, learning inventory and learning questionnaire. Exclusion criteria included articles relating to computer microsystems technology, learning preferences and styles, psychometric testing, learning processes, disability and motivation and school education systems were excluded. Using the inclusion criteria abstracts reviewed and found to be relevant were entered into Endnote X5, a bibliographic and reference organiser (n=225). Following in depth reading of the remaining 225 publications, and using a snowball technique and reference tracking a final selection of 72 publications was made.

Of the publications included in this review, 28% (n=20) were written prior to 2000 with majority of the publications relating to learning organisations, organisational learning and learning originating in the United Kingdom. All of the microsystem publications

and majority of the learning organisation assessment tools publications were written since 2000. Ten of the 13 included publications on clinical microsystems originated from the United States.

Much of the more recent literature on learning organisations is based on previous definitions rather than developing new contributions¹⁷. In the period covered by this literature review (1990 to current), prominent authors in the field of learning organisation theory are Pedler, Senge, Watkins and Marsick and for organisational learning, Argyris is noted.

Definitions

A learning organisation can be defined as ‘an organisation that is continuously expanding its capacity to create its future’^{18:14}. For an organisation to survive and flourish, it is said that it must incorporate learning that is adaptive, that is responsive to the immediate situation and generative with systems established that promote continuous change and growth. Organisational systems must ensure the behaviour of employees can meet this challenge, that is all employees must participate and the collective genius of people must be harnessed at all levels of the organisation¹⁹. Of equal importance is the role of the leaders in organisations who according to Senge (1990) are responsible for providing opportunities for employees to learn and expand their capacity. Implicit in a supportive model is a suitable organisational design with proactive learning processes, coaching and facilitated learning.

Why be a Learning Organisation?

In identifying numerous essentials for the creation of a learning organisation for example systems thinking, strategic vision, policies and processes and knowledge management, it is hypothesised that being or becoming a learning organisation will ensure a competitive edge for a company^{17 20-23}. Ellinger, Ellinger, Yang and Howton (2002) examined the return on investment for companies wishing to embark on the learning organisation journey and found a positive association between perceptual and actual financial performance in a learning organisation. The global expansion in knowledge technology is a major impetus for the development of learning organisations, particularly with the extended availability of information that facilitates rapid change and growth²⁴. Changes in health consumer expectations, new care methodologies as well as insurer and government imperatives to reduce length of stay in hospital and costs are all good motivation for developing a learning organisation²⁵.

In the health environment learning organisation teams are particularly pertinent in helping to translate new research into practice and in successfully crossing professional domains and status barriers²⁶. Additionally, in using Senge’s (2006) learning organisation dimensions and a modified job satisfaction instrument, a relationship between learning organisations and retention of workers in the IT industry was demonstrated²⁷. Application of LO principles could significantly reduce attrition rates thereby reducing health care employment costs, currently estimated to be around 5% of total annual budget²⁸. These costs combined with the hidden costs of untapped knowledge repositories, that is knowledge workers as key assets²⁷, leaving the organisation²¹ are significant motivators for the establishment and maintenance of learning organisations.

Embarking on a ‘progressive cultural journey’^{29:238} towards a learning organisation in a large Melbourne teaching hospital effected significant improvement in all key performance indicators for the organisation over a five-year period. Birelson (1998) advocated for the adoption of learning organisation dimensions (especially those of Senge) and increased accountability of team members as an improvement strategy for child and adolescent mental health services in Victoria, Australia. In doing so, the

organisation increased consumer orientation, a culture of outcome measures and continuous improvement ³⁰.

METHODS

A mixed method approach was chosen for this study into learning in general practice microsystems. The approach incorporates the use of qualitative and quantitative methodologies and results in collection of data from differing lenses ^{12 13}, perspectives and viewpoints ¹⁴.

A partially mixed concurrent equal status design ^{31 32}, similar to Creswell's (2011) convergent design, was used as it was considered methodologically appropriate for the purpose, available resources and the context ³³. A convergent study design has two phases occurring simultaneously, data is not mixed until it has been collected and analysed, and equal status is given to qualitative and quantitative results from the data. The purpose of a convergent design may be to use one set of data to illustrate the other, ascertain convergence or divergence of opinions, develop greater understanding of and/or corroborate the data. Analysis of each set of data occurs independently and is followed by mixing prior to establishing a comprehensive interpretation ³⁴. Adding a qualitative component to this study enabled exploration of and expansion on staff opinions obtained in the questionnaire and strengthened findings. The patient questionnaire (quantitative) was included as a strategy to confirm or dispute staff opinions. Synthesis of methods at analysis allowed for greater contextual understanding of learning in general practice as learning organisations and the ways this may be enacted individually and collectively.

Data collection occurred between July and September 2013. The researcher was present until data collection saturation was reached for each practice that is when no new data was coming to light. Data collection generally occurred over two to three days.

Analysis

For this study the domains of the Dimensions of a Learning Organisation Questionnaire (DLOQ) have been pre-determined and as a result inform categories for the quantitative data analysis. Quantitative data from the patient questionnaire and the DLOQ staff survey were entered into and analysed using SPSS – a software package used for statistical analysis. Data were interrogated using descriptive analysis with the intention of comparing responses across the four sites.

For the qualitative data, interviews were digitally recorded and transcriptions were entered into QSR NVivo (10), a qualitative data analysis software. Through an iterative inductive process data were thematically analysed and coded into 'nodes'.

STUDY POPULATION

For this was exploratory study participants were drawn from four purposively selected ³³ general practices in New South Wales (NSW). Selection was based on their self-identified interest in learning and research. Minimum staff requirements were to have at least three general practitioners and a practice nurse but preferably two to ensure that anonymity in reporting could be maintained. Larger numbers also provide a greater representation of views concerning individual practices. Practices were located in inner and outer metropolitan Sydney, the Blue Mountains and north coast NSW. Practice Managers (PM) were the point of contact for the researcher and they acted as the liaison for all negotiations relating to scheduling site visits and interview times.

PARTICIPANTS

- a) All staff from each of these practices were eligible for inclusion in the study. Staff self selected and included:
 - Doctors – fully qualified as principals of the practices, contracted or employed and trainee doctors who were general practice registrars
 - Practice Nurses – generally these were Registered Nurses however one person identified as an Enrolled Nurse
 - Administrative staff.
- b) Patients from the same practices were enrolled into the study during the same time frame as staff. Patient eligibility was defined as any patient who had had a consultation at the practice with a health professional on at least three prior occasions.
- c) Practice Managers or their representative.

TOOLS

All participant information, consent forms and questionnaires were pilot tested in April 2013 in a large Sydney suburban general practice. Data from this practice is not included for analysis in this report. Subsequently several form and questionnaire amendments were submitted to the UNSW Human Research and Ethics Committee prior to commencement of formal data collection in July 2014. Quantitative data were collected from three sources/questionnaires (see Appendix Two. Figure 2. Study Design):

1. A questionnaire for clinical staff (doctors and nurses) and administration staff working in general practices as they represent the dominant workforce in primary healthcare (Appendix Three. Practice Staff Questionnaire). This document included (DLOQ)³⁵, a tool that has been used and validated in a variety of business organisations including in the U.S.A, South America and several Asian countries
2. A questionnaire for twelve patients randomly selected from the same practices. The purpose for engaging patients was to ascertain whether their opinions would support or disconfirm those of practice staff for example regarding opportunities to learn about their conditions and management options and inclusivity in decision-making (Appendix Four. Patient Survey)
3. A questionnaire for Practice Managers requested details relating to the practice and learning opportunities provided therein (Appendix Five. Practice Manager Questionnaire).

The selection and/or development process for these tools is detailed in Appendix Six. Tool selection and development.

Results

The organisational context – an overview

The organisational context presents data collected from the PM and staff questionnaires. Data from the PMs questionnaires provided a practice overview for example summary of services offered, hours of operation, accessibility index, population served, staffing accreditation and whether the practice has an Internet presence. The staff questionnaires provided data such as years experience,

qualifications, preparation for role and continuing professional development. Appendix Seven. Practice details summarises general information.

All practices were independent owner operated businesses that employed the principals. Other staff involved in this study included doctors (DRs) who were either employed by the practice or contracted, salaried registered nurses (RNs) and administrative staff (AS). Other sessional staff were not included in the study due to logistical constraints. All practices were involved in ongoing accreditation – two with General Practice Australia (P1 and P3) and two with Australian General Practice Accreditation Limited (P2 and P4). With one exception (P4) the practices have an Internet presence. The web sites were easy to navigate and contained general service related information for example contact details, address, hours of operation and options for emergency situations. Two practices identified how and where consumers may make and escalate a complaint.

Response rates

Appendix Eight. Staff Location and Designation identified that 53 DLOQs were completed and returned and 39 staff participated in interviews. Overall this represented 61% and 45% of the total staff (n=87) in the four practices, with the response rates for DRs, RNs and AS being 29%, 10%, and 18% respectively for completion of questionnaires and 20%, 9% and 14% for participation in interviews. Additionally two Practice Managers (PMs) (P2 and 3, 50%) and one Enrolled Nurse (EN) completed the questionnaire. For ease of interpretation and confidentiality, hereafter the EN data is include with the RN data.

Years of experience

In total 41% (n=21) of staff had 20 or more years experience with doctors being most likely to fall into this category (n=11) while 63% (n=10) of AS had less than 10 years experience. Of the RNs 78% (n=7) had 11 or more years professional experience with an even spread across the year categories.

Base level qualifications

No minimum level base qualification is stipulated for AS in general practice although the RACGP standards suggest the following:

'computers, software applications, first aid, medical terminology, medical practice reception and cross cultural engagement' and use of 'the patient health records system, making appointments, recognising medical emergencies when patients present in reception, confidentiality requirements and familiarisation with the practice policy and procedures manual' (RACGP, 2014).

Of the AS 50% (n=8) did not have a qualification relevant to their role in general practice.

Majority of the RNs (n=5) had a hospital certificate while 23 of the 25 DRs stated they had an undergraduate degree (MBBS) as their base qualification.

Postgraduate qualifications

The highest qualification held by AS was a Certificate IV (n=3). A postgraduate certificate or diploma was held by five of the RNs while a total of 12 (48%) of the doctors held postgraduate diplomas, three a Masters Degree and one a Doctorate. One person held dual postgraduate qualifications – these were a diploma and Masters Degree.

Preparation for role

Overall 85% of staff were satisfied with the level and content of the preparation they received for their role with 77% (n=41) receiving an orientation, 87% (n=46) receiving on the job coaching, 58% (n=31) receiving information on policy and procedure, 34% (n=18) on communication skills and 49% (n=26) receiving skills training eg. computer and medical software package and telephone system.

Continuing professional development plan

Staff were asked to report whether they had a continuing professional development plan (CPD plan) and indicate how frequently it was reviewed, how many CPD hours they had in the previous year, how this had been funded and whether they believed future CPD needs would be supported. As a prerequisite of national professional registration RNs and DRs are mandated to attend and document a minimum number of annual CPD hours relevant to their area of practice. There are no legislated national requirements for PM however CPD is inherent in membership of the Australian Association of Practice Managers (AAPM) although membership of this body is voluntary. There are no requirements for CPD for AS at a national or professional level.

Three AS indicated they had a CPD plan that was reviewed monthly to annually. AS were more likely to have less than 16 hours of CPD per annum. Eight RNs indicated they had a CPD plan that was reviewed monthly through to annually. Four RNs indicated they had in excess of 40 hours CPD in the past year with RNs more likely to partially or totally self fund ongoing education. Eighteen DRs indicated they had a CPD plan that was reviewed six monthly through to triennially with 11 stating they had in excess of 40 hours CPD in the past year. Funding arrangements are variable and linked to employment status, that is contracted DRs will self fund whereas for example registrars in training may be assisted with funding.

Professional Development

Ongoing CPD for DRs is achieved by attending education programs, conferences, workshops and participating in for example practice audits as a quality improvement activity and for RNs is similar but may include facilitation of learning opportunities for students and self directed learning.

Professional development opportunities conducted on site at practices was limited and varied between professional groups. For DRs this typically took the form of clinical meetings, sometimes with invited guests and case presentations. The frequency of these varied between weekly to bi-monthly. P3 had in-services relating to evidence-based and safe use of medicines provided by the National Prescribing Service Medicine Wise 2-4 times annually. Meetings were seen as a means of updating staff with new initiatives, publications or circulars however at one of these practices meetings were not interdisciplinary (P4) and as a consequence RNs and AS conducted their own meetings with a practice principal/s and the PM in attendance.

P1 did not specify availability of study leave for staff however did indicate that staff were supported to complete external courses relevant to role requirements. P2 identified an annual allocation of 0-8 hours for all staff, while the other practices stated that needs were assessed on a case-by-case basis that would be influenced by the role of the person and workload. Practices are unlikely to contribute financially to ongoing education needs of contracted staff who are mostly DRs, although AS and RNs may be assisted through supportive rostering and/or payment of course fees (P2) and/or payment of wages (P2, P3 and P4) for the duration of the education activity.

The PMs indicated topics for professional development were identified through staff self identifying gaps in knowledge, insufficiencies in role performance or where partners (principals/DRs) identified need, for example, in relation to targeted population service provision. A significant proportion of the administrative (87%) and nursing staff (89%) received supervision or on the job coaching for their roles, for example induction into the role and one on one training when new technology/treatment options were introduced. A 'buddy' system was used to support new staff, particularly AS.

"Corridor teaching" was mentioned by a PM (P1) as a valuable learning tool. This is a form of ad hoc, informal and just in time teaching/learning that addresses a specific need. It can be applied to any discipline and is often signaled by "Have you got a minute?"^{36:745}, indicating the desire for a short conversation/consultation with an experienced practitioner seeking clinical management options or opinions.

When PMs were asked what options were available to help staff if they were having difficulties with performing some aspects of their role, support was indicated with variations of one on one refresher/training internal or external to the practice, role play, watch and learn (lead by example) and one practice indicated that if clinic staff were not competent to perform clinical duties they would be removed until remediation were complete. Another practice stated that staff were supported through annual job appraisals.

As identified previously staff are generally made aware of policy, procedure, legislation changes or updates for example in immunisation schedules, to fulfill their job requirements through staff meetings. Internal email or the internal messaging system that is integrated into patient appointment and file management systems were used regularly. Hard copies, for example of circulars were distributed to in trays and/or pigeonholes as required.

All practices facilitate placements for General Practice Registrars and medical students. P2 and P4 offered placements to Hospital Resident DRs. P1 offered placements for undergraduate nursing students and P4 offered placements for undergraduate and postgraduate nursing students. An RN in P3 identified that lack of space precluded having nursing student placements in addition to other students, and in P2 both RNs were open to the option of having nursing students in the future, as they were relatively new to their role in the practice at the time of interview.

Dimensions of a Learning Organisation Questionnaire

The following data summarises responses to the DLOQ for all participants (n=53). The DLOQ has seven dimensions with three items allocated to each for a total of 21 items for rating. Each item had a potential maximum score of 6. Almost always and a minimum of 1. Almost never. Intermediate scores of 2, 3, 4 and 5 did not have any nomenclature attached. Appendix Nine. Aggregated DLOQ scores identifies the dimensions, items and aggregated scores for each professional group. Apart from Item 1 there are substantial differences between the PMs scores and other staff categories with a trend for the PMs scores to be higher. Differences range from 0.9 to 1.8 however this should be viewed with caution, as there were only two PM responses out of a combined total of 53 responses.

Dimensions

Overall there were two dimensions that scored equally well with an aggregated score of 5.5 – these were *Creates continuous learning opportunities* and *Provides strategic leadership for learning*. The lowest scoring item within the former dimension was for DRs with *Item 3. In my organisation people are rewarded for learning* rated at 4.9 and the lowest score within the latter was for PMs who rated *Item 21. In my*

organisation leaders ensure that the organisation's actions are consistent with its values at 4.5. The lowest aggregated score overall for a dimension was *Creates systems to capture and share learning*, with scores for the three items being 4.9, 4.8, 4.5 and 5.2 respectively for AS, RNs, DRs and PMs. The lowest scoring item within this dimension was *Item 12. My organisation measures the results of the time and resources spent on training* with scores of 4.6, 4.7, 3.9 and 4.0 for AS, RNs, DRs and PMs respectively.

Within the dimension *Connects the Organisation to the Environment* interesting trends emerged with interdisciplinary differences of opinion being strongest in *Item 16. My organisation encourages people to think from a global perspective* with RNs scoring 5.6 and DRs scoring 4.9. Likewise, in *Item 17. My organisation works together with the outside community to meet mutual needs* showed a disparity of opinion with scores of 5.9 and 4.9 respectively for RNs and DRs.

Items

Using aggregated average scores for all items overall in the DLOQ the RN scores were highest followed by PM, AS and DRs with respective scores of 5.7, 5.5, 5.4 and 5.0. In looking at individual items there was consensus by the disciplines for only one high scoring item - *Item 1. In my organisation people help each other learn* was scored 5.6, 5.9, 5.7 and 6.0 by AS, RNs, DRs and PMs respectively. There was only one low scoring item on which there was agreement by all disciplines, that being *Item 12. My organisation measures the results of the time and resources spent on training*. Scores were 4.6, 4.7, 3.9 and 4.0 for AS, RNs, DRs and PMs respectively. There was high scoring agreement between the AS and RNs with *Item 18. My organisation encourages people to get answers from across the organisation when solving problems* with scores of 5.5 and 5.7 respectively for AS and RNs whereas DRs only scored 5.1. Yet another point of agreement, however on low scoring was *Item 15. My organisation support employees who take calculated risks*. RNs and DRs concurred with low scores of 4.6 and 4.2 respectively and conversely AS scored 5.1.

Semi-structured interviews

Qualitative data were collected via semi-structured interviews. Interviews were conducted with any practice staff member who agreed to participate and who had previously completed the DLOQ. Of those who completed the DLOQ 74% (n=39) also participated in an interview. Appendix Eight. Staff location and designation for completion of DLOQ & interviews shows the numbers of staff who participated in interviews in the shaded columns.

Prior to completing the DLOQ, staff had completed a consent form indicating their willingness to participate in both in the questionnaire and an interview. Interviews commenced with the researcher seeking clarification and a rationale for participant responses to the DLOQ items, most particularly those questions that the participant had scored 3 or less on the rating scale of 1-6. The rating of 1 represented "Almost never" while 6 represented "Almost always". A score of 1, 2 or 3 was judged to represent significant dissatisfaction or disagreement with the specific item. In some instances participants required clarification of the questionnaire items. Supplementary questions used during the interviews are shown in Appendix Ten. Supplementary interview questions.

Digitally recorded and subsequently transcribed staff interviews were imported into QSR NVivo (10), a qualitative data analysis software. Through an iterative process data were thematically analysed and coded into 'nodes' that are a repository for a collection of references related to a theme. As the wording would suggest sub-nodes operate as a way for the researcher to refine and classify themes. Initially constant

comparative analysis³⁷ using the research questions as a foundation was used to discern emerging themes on a random sample of eight transcripts.

Six broad themes emerged from the data – communication and support, learning, risk management, the patient voice, the Practice Nurse role and clarification of the DLOQ. Risk management is further sub-divided into three more specific but closely aligned categories - patient results management, patient notes and policy and procedure. The themes are not mutually exclusive, for example, without communication and support, learning does not occur and the patient voice would not be elicited, while practice improvement underpins all categories. The themes also do not necessarily align with the items of the DLOQ – some span several dimensions for example communication and support or learning, while others appear to have no obvious relevance to the dimensions for example, risk management or the practice nurse role.

Communication and support, learning and risk management including the sub-categories were most commonly referred to. The key themes, an explanation of the interpretation of the term used, an exemplar and major issues/themes appear in Appendix Eleven. Key themes from semi-structured interviews. Although not strictly a theme that emerged from the data collection itself, Code 6. Clarification of DLOQ draws attention to two contentious items in this study – *Item 12. My organisation measures the results of the time and resources spent on training* and *Item 15. My organisation supports employees who take calculated risks.*

1. Communication and support

A variety of modes of communication are used in general practice including verbal interpersonal, written materials in 'pigeonholes', telephone and computer based (email and internal messaging/notifications). This was confirmed by majority of those interviewed.

Data relating to openness of communication was conflicting with some AS stating they always had a voice and would be heard. For example when asked if people feel free to bring up all issues an administrative person (P4) responded emphatically '*Yeh I do actually*' and '*I would approach X (practice manager) first and say I think we could fix this area up and then 99% of the time she says go for it*' (P2AS). This contrasts with a comment at P3 that indicated staff have a voice but they may not be listened to '*... I just think sometimes they just feel um... reception staff don't need to know some things so that's the opinion I get*' (P3AS). Despite a wealth of experience elsewhere another administration person volunteered that there was a hierarchy related to longevity of employment among AS and hence she would be reluctant to offer suggestions for change '*With regard to reception, this is what I think, that people who have been here for a long time, they consider that they have experience and they are the wiser ones*' (P4AS). When pressed whether she would address issues with the practice manager she responded '*I don't do it because I just don't like to rock the boat. I have to work with these ladies*' (P4AS). The practice manager at this practice had stated '*We try really hard not to work in a hierarchical kind of way*' (P4PM).

The majority of doctors reported that communication was open and transparent for example '*It's a wonderful work place culture you know and I think ...we're collaborative So we make decisions you know in a collaborative fashion as much as we can*' (P4DR) and '*I like the aspects of work culture here*' (P3DR). However this was tempered by '*I made one suggestion about changing the set up of our intranet website, so making it a bit more user friendly, but that hasn't happened... that's fine I just work with it*' (same P3DR) and '*... the suggestions I've made have never been*

looked into' (P2DR). Professional support for doctors by doctors was apparent, for example *'I ... would point out both strengths and weaknesses (to colleagues). As we've had more senior people coming in it gets harder to do that'* (P2DR) and *'I thinkif we have a difficult experience will debrief with somebody else about it often informally, often whoever happens to be there'* (P1DR).

All practices reported having staff meetings – one has profession specific meetings (P4) and three have profession specific and interprofessional meetings (P1, 2 & 3) *'It's a full on meeting with everyone and we close the practice for one hour'* (P2DR). The frequency of meetings varied from weekly (P1 for doctors), monthly (P1) to 6/8 weeks (P4) for nurses and up to six monthly (P4 for AS). One problem that arises in all practices due to the part time nature of employment in general practice is the capacity to have all staff at meetings *'... we have different girls working different days and if it's your day off you don't necessarily want to come out to a meeting for an hour'* (P3AS).

Communication and feedback in the practices generally occurred from AS and RNs through the practice manager to the practice principals although staff reported that they could approach particular individuals at any time *'If there's something in particular to deal with a certain doctor I'll go to that doctor straight away'* (P3AS). At P3 each person at interprofessional staff meetings are asked individually if they have any concerns to be addressed *'... at the end of the meeting we go around and ask each person individually if there is anything that they want to bring up, so nobody can be a shrinking violet and feel unheard'* (P3DR).

Clinical practice matters were monitored and amended as necessary by the principals but had often been channeled to them via the practice manager. For other policy and procedures and practice matters again the practice manager was the first point of contact for actioning of issues.

Responses to *Item 4 – in my organisation people give open and honest feedback to each other* were mitigated by the need for harmonious relationships, for example *'Opinions not necessarily honest opinions but opinions that agree with everybody'* (P3AS) and *'I think we err on the side of being polite so its awkward. We may tend to avoid awkward conversation'* (P3DR).

A doctor in P2 and P3 remarked that they believe having a common tea room for all staff promoted a sense of belonging and encouraged communication *'... the building structure makes a difference to how the practice runs and if you have a room like this where people can... sit down and talk makes a huge difference'* (P2DR) and *'I think it's great if you want to be part of a service that's all got the same ethos and moving together...chatting beats emails and all sorts of stuff'* (P3DR).

Doctors reported the informal practice of handing patients over to other doctors when they are going on leave had the beneficial effect of ensuring optimal patient care, relieving any feelings of guilt and sharing the burden in anticipation of a reciprocal arrangement *'I can go and have my long holiday because I've helped out when necessary so kind of a reciprocal arrangement'* (P1DR). As well as practicality, this system of shared responsibility of patients engendered trust between doctors *'...the trust develops over time as we manage one another's patients and become more familiar with one another'* (P1DR) and *'one of the reasons I have been here for 23 years is that I can trust.... everybody to say that my patients will be cared for very well. And that's always reassuring when you are on holidays or away'* (P2DR). Support for and trust in RNs developed over time with a doctor stating *'Just over time as we've got more confidence in each other'* (P3DR) and the RNs have learned new skills.

2. Learning

The primary modes of learning in general practice were a combination of attendance at formal events such as workshops and conferences, learning/teaching on the job, mentoring and coaching. Overall practices reported being open to learning and trying new ways of working within the parameters of safe practice, for example *'I think it's (training) more deeply entrenched in what we do.... it's just part of what you should do as part of your quality improvement cycle'* (P1DR) and *'We run a philosophy here strongly supported by the practice principal that everybody here is a learner – the patients, their parents, their carers, reception, nurses, doctors – we all come to work to learn and this is a learning centre'* (P2DR) and *'we are a learning culture'* (P4DR).

All practices and all professional groups identified colleagues as a source of support to whom they could go at any time to confer about patient issues for example *'...you learn every day...and we share when we learn something'* (P3AS) and *'... basically any of the doctors ... can be consulted at any time about any problem'* (P4DR).

How lessons learned are implemented depends on the nature of the issue but would include one on one feedback, sharing of information at clinical or interprofessional meetings and/or implementation or changes to protocols transmitted via the internal mailing system *'it may be that there is a new protocol that's brought into place'* (P1DR) and *'It needs to be appropriately shared and sometimes that's not appropriate for patient confidentiality and staff confidentiality to be shared with everyone'* (P1DR). Individuals embraced training and learning at different levels *'I think traditionally in general practice you do things the way you do them, because that's the way you've always done them'* (P3DR) and *'...we've spoken to the doctors about it, some are receptive and say we'll go ahead with it (new treatment strategy), others would prefer to go and use what they are used to doing'* (P3RN).

The amount of formal training varied between professional groups with AS receiving the least as is expressed here *'There's not much training the receptionists get'* (P3AS) although at times computer training, customer service, dealing with difficult patients and software systems training and annual cardio-pulmonary resuscitation training did occur (P2 & 3). The administrative role is varied with all practices stating that most of the learning occurred 'on the job' particularly for practical task *'... they sit with us at the desk and then after a period of time we allow them to take over from us and somebody will sit with them'* (P4AS). P2 AS were supported to complete a Certificate IV in work hours.

In house training was generally facilitated for the doctors by their colleagues and by doctors as supervisors of registrars or medical students. This took the form of clinical meetings which occurred *'every couple of months'* (P3DR), in which for example clinical protocols and specific interesting cases were discussed. Clinical meetings did not occur at P2 however *'There is a lot of informal sharing'* (P2DR) for example at the doctors meetings. P1 also reported weekly doctor meetings for sharing interesting cases was complemented by case studies run by the NPS (P1 & 3).

Processes concerning registrar supervision differed between practices. For example during initial training registrars meet three times a week over the first few weeks for induction (P4) versus debriefing sessions with their supervisor at the end of each day for the first six months and thereafter lunch time case presentations were selected and delivered by the registrars (P3). The daily debrief was seen as a strategy to check the registrar's level of knowledge and ensure contemporaneous knowledge for the supervisor (P3). Registrars reported that intermittently they would receive verbal feedback from senior doctors who have followed-up patient care (P2 & 3) and confirmed by this comment *'...you can give the Registrar feedback as to how you think that they could have managed it differently'* (P2DR). P1 pointed out that they have a formal teaching hour every week for registrars *'they have a formal teaching*

hour...so mistakes or learning occurs they'll discuss there' (P1PM). Medical students were directly supervised by doctors during all patient consultations and at times were supervised by RNs when undertaking specific clinical routines *'We teach them the hands on stuff, how to do ECGs, yeh simple things they don't get taught'* (P3RN).

RNs did not usually participate in in-house training as doctors did, *'There's nothing structured'* (P2RN) however they may have learned skills directly from doctors *'The doctors have been more than happy to teach me things, let me know how they want things done which is fine, it's their practice'* (P2RN). RNs shared information if they have attended formal education opportunities *'It's not a formal process, they just tell each other, but they're working side by side all the time'* (P3DR) and *'... we don't mind learning from each other'* (P3RN). RNs from all practices frequently attended clinical management updates that were provided by Medicare Locals for example immunisation, triage, paediatric care, breast feeding and asthma management updates *'X (Medicare Local) ... here are fantastic, they have stuff going all the time'* (P2RN). Some modules could be accessed online and other RNs reported being supported by the practice to attend the annual National Practice Nurses Association conferences (P3). Nurses at all practices were likely to be supported to attend external programs with the level of support being influenced by program relevance to general practice *'the practice will pay for the time and attendance if it's something that is considered relevant to the educational needs of the staff member'* (P1DR) and *'they pay us to go'* (P4RN). RNs facilitated undergraduate placements at P1 & 4.

Application of knowledge learnt by RNs however was variable and depended upon approval from individual general practitioners *'... yes we'll go ahead with it (new treatment option), others would prefer to go and use what they are used to doing'* (P3RN) and another RN (P3) *'...the doctors tend not to take stuff on board so much ... push that one under the carpet sort of thing'*. Despite this latter comment the same RN subsequently stated she had made changes to infection control processes and management and administration of cytotoxic drug procedures.

Frustration was expressed by AS at one practice with regard to the desire to learn to trouble shoot computer issues *'In regards to computers and things like that where we're sort of kept... out of the loop where we might have an interest in wanting to learn to how to ...be able to fix things.... and we just sort of have been dismissed kind of thing'* (P3AS). There was a perception that there were only a few keepers of information and in their absence workplace difficulties could arise.

Patients played a considerable role in learning that occurred in the practices in so far as allowing student observation or consultations and/or having the sessions videotaped (with registrar training) and by providing feedback on services received. This was particularly acknowledged in P2 and P4 *'You can't be taking students without having a wonderful patient group. Our patients are very generous with their time'* (P4DR)

3. Risk Management

The risk management process commences with identifying where an organisation may be exposed to adverse operational or strategic events. Causes of risk are analysed and appropriate changes applied to eliminate or reduce the likelihood of subsequent harm. Ongoing monitoring of changes and their effects is an inherent component in the process. In health services risk includes all services provided by clinicians to and for patients either for direct care or health promotion activities. For this study investigation of risks in general practice were limited to practices, policies and procedures that impacted operational events, as the researcher was not privy to strategic planning processes.

Accreditation (by AGPAL or GPA) is a comprehensive, formal, structured and regular method of general practice review that contributes to risk management by ensuring at least minimum standards. Participation in accreditation was seen positively as a quality improvement process *'We do it to keep safe'* (P2DR) and as a reminder to practices to update policy and procedures *'... if it wasn't formal like that people could forget to do it'* (P2DR). Although there was some confusion among clinicians as to whether accreditation was every two, three or four years *'... The practice is accredited with one of the organisations ... It's not just about minimizing risk, it's about improving quality of care and part of that is reducing hazards and risks where they can be done'* (P1DR).

Each practice reported that they had participated in the Practice Improvement Collaboratives sponsored by the Improvement Foundation, a peak organisation that works with healthcare organisations to improve the quality of their services. Formal continuous risk reduction review cycles of plan, do study and act (PDSA) are used to promote practice improvements. Practices tended not to use the formal PDSA strategy on an ongoing basis. Rather improvements were likely to be tested on a small scale and informally *'... if I want to do something She'll say give it a shot, then I will do it and she says OK yep let everybody know or how about we fix up this or that'* (P2AS) and *'The PDSA stuff We do it more intuitively.... What are the small things.... So we'll try one thing and then we'll review how it's going ... and whether we've achieved it'* (P1DR).

Evidence that the full practice improvement cycle was completed was in some instances not apparent, for example uncertainty whether a change of policy had been documented following a privacy breach *'... it might be written in the policy, I'm not sure... but that was changed'* (P1AS) and following an immunisation event *'I don't know if it was actually written, but it is known by reception, nurses and everybody that that is the (new) procedure.....It will be written up.....because its part of our practice and procedure to prevent us from making that mistake again'* (P3RN).

Conversely in the latter practice an RN who recently attended an update on infection control and sterilization had had changes approved to procedures and intended closing the improvement loop and ensuring knowledge had been shared and incorporated into practice by undertaking audits. Following an incident concerning the misplacement of a skin biopsy at this same practice a doctor cited the implementation of *'a written chain of accountability'* (P4DR) witnessing the presence of specimens in containers ready for shipment to the laboratory.

As noted by one doctor risk in terms of clinical practice may be averted by the way general practice is set-up. A culture of safe practice was ensured, in so far as patients frequently needed to book appointments with a doctor other than the one of their first choice, if they are to have a timely consult. That many GPs do not work full time is a major contributor to this occurrence *'It is very uncommon for one patient to see only one doctor ever and so I think the practice by its structure does ensure that (safe practice)'* (P2DR). This person went on to say *'...there is feedback between most of us, it doesn't happen with all of us and I think it's personality driven'* (P2DR) and *'the kinds of thing that I guess are informally in place are because we tend to see one another's patients at different times, we're reviewing notes that other people write'* (P2DR).

All practice had an allocated/rostered doctor who reviewed, acknowledged and acted on all patient results on a daily basis – particularly abnormal reports. In preparation for leave, doctors delegated a clinical buddy to oversee patient results and ongoing management *'The other thing I think we do really well is when doctors are going to be away on leave even if it's for a week, they will hand their patients over to other doctors'* (P1DR) and *'... there are good systems around reviewing results ... If people*

go away for any reason they appoint a clinical buddy who actually checks the results' (P2DR).

A systems approach as opposed to for example 'a blame and shame' approach was most commonly taken when an adverse event arose. One doctor mentioned systems analysis as the exemplar and the need to have numerous layers in a system in order to prevent adverse events occurring. This approach was demonstrated by the following comments *'identify what the issue is and follow the chain of events....if there's something that should be done differently then what needs to be done in response?'* (P1DR), *'is there a system that is practical that we can put into place?'* (P2DR) and *'we tend not to blame the people but look at the systems behind it that could be improved so that it wont happen again'* (P3DR) however there was also a recognition that everyone is human and that mistakes do happen *'Well we are imperfect creatures. And we've got a safety net against that... doctors should write in the notes and tell the patients I'm not well at the moment'* (P2DR).

Where a clinical error had occurred practices erred on the side of transparency *'We're not into hiding mistakes'* (P4DR) and it was cited that patients were notified in a timely manner *'we always address it with the person who was mentioned (staff member) in the complaint and feedback to the person complaining ... and explain'* (P3DR) and *'... its not the service we would have wanted and thanks for your feedback we've done something about it'* (P2DR). These events were said to be infrequent but excellent learning opportunities for example P4 indicated that resident doctors or students would be guided by the supervising doctor through the process of contacting the patient and explaining the error and likely outcomes *'... there's nothing like an error to remember it for the rest of your life so really..... with support they need to manage that process'* (P4DR). Then again, in P3 a registered nurse who made an immunisation error was supported by a practice partner to contact the patient and explain the error and a management option.

3a. Management of Patient results

The Royal Australian College of General Practitioners (RACGP) Standards for General Practice (4th Edn.) state that all GPs should have a written policy regarding the documentation and management of patient results. This standard refers to the need for follow-up of clinically significant results (for example, where results may be within normal limits however the patient continues to report a deviation from normal) and that there should be a safety net within the system should the patient or GP fail to follow-up when required. The following excerpt from the RACGP Standards provides guidance on results management

'While practices are not expected to follow up every test ordered, or to contact patients with the results of every test or investigation undertaken (where results are) clinically significant, the practice needs to create additional safeguards to ensure that potentially clinically significant information does not get 'lost in the system'

and

'The practice needs to have a system that protects against the failure of both the GP and the patient remembering to follow up on tests or results' (RACGP, 2013, p41-42).

Procedures for patients to obtain test results varied between doctors and occasionally in contravention to stated individual practice policy. In P2 the stated

ideal by at least one doctor was a scheduled follow-up appointment to obtain results however this was not adhered to *'We have a practice policy of people should really come in to get their results although when they are normal we don't'* (P2DR). In response to time constraints and professional legal responsibilities 'workarounds' occur *'The lawyers would like us to see everybody, Medicare certainly doesn't like it ...There's a bit of a compromise that goes on'* (P2DR). Workarounds are defined as:-

"observed or described behaviours that may differ from organisationally prescribed or intended procedures. They circumvent or temporarily 'fix' an evident or perceived workflow hindrance in order to meet a goal or to achieve it more readily" (P2, Debono 2013).

All workarounds were implemented following a doctor having reviewed results first and included:-

- Patients telephoning for results that were given by the doctor they had the appointment with
- Patients telephoning for results that were given by a doctor from the practice
- Patients telephoning for results that had been documented by the doctor as no abnormalities detected and this information being given by AS *'there are three options so it's just what we know we are able to give out and what we are not able to give out'* (P2AS)
- and *'Patients find it extremely difficult to necessarily book an appointment and just come for the results, I tell them if there is anything wrong I'll give you a call which is not good enough but that is the best I can come up with'* (P2DR)

Other comments included:

- *'No patient would ever be allowed to get away with saying "oh you will ring me if there's a problem". OK we go no'* (P2DR)
- *'They've got a very good system here ... It's managed by the girls at the front desk'* (P2RN)
- *'I don't tell them you must call for results. I don't'* (P2DR)
- *'We never give out results due to the confidentiality act ... and if we told them the wrong thing'* (P3Admin).

3b. Patient notes

Patient notes were mentioned infrequently however one doctor considered them to be a significant matter that required a balance between pragmatism in terms of adequacy, accuracy and legal requirements versus good clinical practice *'They're not perfect (patient notes at that practice) and they shouldn't be perfect because that means your spending not enough time on something else'* (P2DR) and that he encouraged registrars to write comprehensive and contemporaneous notes with *'I want this to be as good as you want your mother's notes to be..... you know you live and die by your notes.'* (P2DR).

3c. Policy and procedure

As a proactive risk management strategy each of the practices reported that they had a Policy and Procedure manual available as a paper and/or electronic copy to which staff could refer. Contents were extensive however how these document were used appeared to vary *'... to be brutally frank that's a document (policy and procedure manual) that's very rarely referred to unless there's an accreditation in place because it's far too big and it's not the way doctors work'* (P3DR). This same doctor when

pressed regarding clinical procedures went on to say *'...the beauty of how we work here is we've had people working here you know for 20, 30 years and they've grown as the procedures have grown, so the procedure manual is in their heads'* (P3DR) and *'We try and have a common way of doing stuff'* (P3DR) and for patient related documents *'We have systems in place to make sure that every single document that comes into the practice is seen by a doctor before its filed ... systems to make sure patients are recalled.... If they have significant abnormal results'* (P4PM).

Strategies for management of patients requesting drugs of addiction to be prescribed were mentioned by two practices. Their policies differed however were seen as equally effective in ensuring patient safety. P2 indicated that policy stipulated that an initial consultation for a patient new to the practice was of an extended length and required full fee payment on conclusion of the consult *'we have already a system in place where the first consult is always charged and it's always a double and that's probably one of the reasons we don't see a lot of narcotic people cause that's told to people over the phone'* (P2DR). This practice also intended to erect a notice in the waiting room stating that no drugs of addiction are given out at the first consultation. P4 indicated restrictions on prescribing practices *'...opiate medication, S8 medication ... you can only get your ongoing S8 from your primary GP... so they sign contracts to say that I will take my medication as prescribed, I will only get it from DR X ... I'll only pick it up from Y Pharmacy'* (P4DR).

Staff safety was paramount at all practices with for example a hierarchy of escalation in the case of an aggressive patient. If AS were not able to resolve a situation they referred to the office manager, then practice manager and finally a doctor or one of the principals as available and police if necessary. P1 and P4 identified that they have a duress alarm, P2 and P4 stated policy dictated that no staff be in the practice alone in the evenings and that if required staff accompany each other to vehicles following closure of the practice. P4 reported that doors are locked at a pre-specified time each day.

4. Patient Voice – surveys and complaints

The primary means for patients to be heard is via patient surveys and complaints. Each practice reported that they undertake a written patient survey at least once every three years in line with accreditation requirements. Some staff were unsure if accreditation occurred every two, three or four years and stated results are not always shared *'I think we would have heard if it wasn't (positive)'* (P2AS) and *'... they do surveys.... it's not really shared'* (P3AS). P3 also engaged patients via a short feedback form, to assess their opinion if new services were introduced for example, their script only clinic or chronic care management program. Other sources of feedback could be verbal, directly to a staff member and there was the option to contact the practice in writing for example via letter or email. P1, 2 and 3 had statements on their websites encouraging feedback and providing information regarding taking matters to the Health Care Complaints Commission. P1 and P3 had a suggestion/complaints box located at reception *'but nothing ever got put in it anyway'* (P1DR). Practices 1, 2 and 3 reported that information disseminated when patients first book into the practice contained details of how and where to provide feedback/complaints.

Feedback via complaints was generally viewed as an uncommon (P1DR, P2DR) but positive occurrence *'This patient thought that they wanted to help us understand something, what are we going to do about it?'* (P2DR) and *'thank you for your feedback and that's not the service we want you to have'* (P2DR). Complaints were generally managed through the practice manager (P1DR, P3AS) and partners (P1DR, P3DR), by examining how the system could be improved to prevent recurrence of the issue (P1DR, P2DR, P3DR) *'we tend not to blame the people but*

look at the systems behind it that could be improved so that it wont happen again' (P3DR) and *'we look at the issues behind that'* (P1DR). Complaints or feedback were acknowledged *'They want that their complaint has had an action'* (P2DR).

Feedback from patient surveys was said to tend to be the pragmatics surrounding service provision rather than direct clinical care provided for example *'there's no parking, it takes too long to get an appointment'* (P3DR) and *'can never get a booking'* (P4DR) although it was seen as useful for providing feedback regarding the performance of registrars *'... patient complaints are quite good at highlighting a registrar issue'* (P1DR). Issues that had been raised by patients in the past have been addressed for example with *'script only' clinics* (P3), chronic disease management clinics (P3), taking on associates (P4), quarantining of some appointments for day of contact high priority/emergency patients (all practices) *'...we've instituted that each doctor has some allocated bookings on the day appointments so that patients can get urgent appointments'* (P1DR) and increasing nursing staff *'we have increased our nursing staff to be able to do... health assessments ... the over 75 health assessments ... our indigenous assessments Our 45-49 year old assessments'* (P1DR) and similarly with P2. Staff stated to some extent this latter strategy has resulted in closer working partnerships between doctors and nurses with an initial consultation and comprehensive history update completed by the nurse being followed up with a short wrap up consultation with the doctor *'... That improves waiting time if the nurses have the time to basically be doing a lot of what's involved in the assessment and then the patient only needs a 15 minute appointment with the doctor'* (P1DR).

5. Practice Nurses role

Primary healthcare nurses are commonly known as Practice Nurses. This theme became apparent largely due to issues about the scope of practice. Characteristics of the role include:

- being part of the first level of contact with the health system
- working within their scope of practice, nurses provide socially appropriate, universally accessible, scientifically sound, first level care
- working independently and interdependently in teams
- working in a range of settings with work covering some or all of the following - health promotion, illness prevention, treatment and care of sick people, rehabilitation and palliation, midwifery, antenatal and postnatal care, community development, population and public health, education and research, policy development and advocacy. (adapted from Definition of primary health care – APNA - <http://www.apna.asn.au/scripts/cgiip.exe/WService=APNA/ccms.r?PageId=11012> accessed 12.5.14).

One RN succinctly pointed out that her role as a practice nurse was *'within the scope of a registered nurse competencies but we have to work autonomously, so that's where it's different* (from other RN roles). *Yeh you have to be able to make decisions'* (P4RN). The RNs worked at all times under the direction and supervision of doctors either indirectly, for example by following established practice guidelines (taking observations and ECGs, allergy testing, childhood or travel immunisations) or directly, for example by completing clinical tasks such as dressings, assisting with local anaesthetic administration. The extent and scope of their role differed from doctor to doctor and from practice to practice *'Since coming here I've discovered that every general practice is different. They all have different scopes of interest ... so I've learnt a whole new set of skills'* (P2RN). In P3 the role was extended for example inserting cannulas with one doctor acknowledging *'I think they've expanded (the role) the longer they've been here'* (P3DR) and a nurse concurring. This same doctor

commented that he believed the success of the practice RN role was in part due to the leadership skills of the RN team leader *'X was a good leader in that she wasn't sort of threatened by trying to teach her skills to each new nurse as they came along'* (P3DR). A nurse at this practice observed that the role scope had extended based on the nature of relationships between the professions as in longevity and trust *'...that's an understanding we have between the doctors and the nursing staff. Something that's a trust that we've built up over many years'* (P3RN). She also confirmed *'the guys (doctors) are easy to talk to'*. Another RN expressed concern at the extended scope of practice *'well there are things that are out of our scope and you know you are frowned upon if you say that we're not comfortable doing that'* (P3RN). On the other hand this same RN stated she would be happy to take on the extended role if she and her colleagues had relevant training.

Assessing, history taking and triaging of patients is a significant part of the role as is care planning, for example for patients with Diabetes and other chronic diseases (P3 and P2 RN). As identified previously the corollary of doctors being time poor has been to employ more practice RN who use their skill set as an adjunct in chronic care management and health promotion strategies *'It's a lot of chronic disease management ... patient assessment ... doing sets of obs ... getting a brief history'* and *'we sit down with the patient and we discuss it a lot more, like how they're going with their diet, their exercise'* (P2RN). For one practice the nurse led chronic disease management program represented a departure from traditional general practice. In this model the patient diagnosis was known therefore the emphasis was on *'self management skills and making sure they've got the resources and confidence they need for the next few months.... it's not the traditional way you do general practice'* (P3DR).

Working relationships with doctors at times presented challenges especially where the doctor/nurse ratio was greater *'where every doctor thinks they're currently working so they want the treatment room or they want you for their patient'* (P2RN). This particular issue was overcome in one practice by the RN having their own list of booked patients visible in the universal booking system. Having to be aware of practice preferences of the doctors was a concern for the RNs *'every GP that you work with has a different idea of how they want the care done and you have to adapt to every individual GP ... that can be quite challenging.... There is a degree of you're recognized as a professional who has an opinion but there's still a slight barrier to it being the doctors patient'* (P3RN).

6. Clarification of DLOQ

Generally staff completed the DLOQ without assistance. While not strictly a theme that emerged from data collection per se, staff sought clarification of Item 12. *My organisation measures the results of time and resources spent on training* and Item 15. *My organisation supports employees who take calculated risks* from the researcher on a number of occasions and hence merits discussion.

Item 12. My organisation measures the results of time and resources spent on training was scored 3.9, 4.0, 4.6 and 4.7 respectively by DRs, PMs, AS and RNs. Staff requested examples of how this would be achieved in order to check it against practice behavior. The researcher suggested that there may be a raft of possibilities of how this might be achieved, with one suggestion being to record the number of patients consultations/reviews conducted using an updated management plan within a specified time frame following a clinical management workshop relating to that condition. Ultimately practices stated that measuring the results of the time and resources spent on training was not seen as a priority by any of the practices as the need for staff who were safe and competent in their role necessitated ongoing training *'No I don't think we measure.... I mean its just part of our culture ... we just*

do it' and 'we don't need to be accountable for spending money on it because its just part of what you should do as part of your quality improvement cycle' (P1DR)

Item 15. My organisation supports employees who take calculated risks speaks to staff opinions relating to self-efficacy. A marked variation in scoring was shown between professions with scores of 6.0, 5.1, 4.6 and 4.2 for PMs, AS, RNs and DRs respectively. Consistently it was either rated lower than other items or staff sought clarification prior to rating it. If the item was rated without questioning the researcher it was often lower, however if clarification had been sought it was rated higher. The researcher explained the item as staff deciding to deal with an event/issue/scenario that was unfamiliar to them but that they believed to be within the scope of their role.

Responses were dichotomous, on the one hand being risk averse and aligning with safe practice guidelines, and on the other acknowledging that the practice of medicine is a risk in itself and that taking a calculated risk with in the scope of a practitioners knowledge, expertise and scope of practice with support was acceptable. Responses to this item include:-

- *'I don't know what kind of risk it would be appropriate to take in general practice but I would say none. You don't take risks with clinical issues, you don't take any risks with administration of patient records, you don't take risks at all' (P4PM)*
- *'... we don't want to take too many risks in medicine' (P3DR)*
- *'I don't think its particularly encouraged to take calculated risks because we are dealing with medical care so I think we always want to be as low risk as possible' (P1DR)*
- *'... we really don't want to be too risky in our practices..... its very important personally and for our practice to practice in a safe manner' (P2DR)*
- *'I mean you are always taking risks professionally.... And professionally you are given freedom to do that and ... the practice supports that (P2DR)*
- *'It's OK to experiment with stuff so its OK to try new things ... I think my bosses are very happy for me to try something that I haven't done before with supervision' (P3DR - registrar). This comment was supported by a senior doctor in the same practice who iterated that junior doctors are encouraged to be independent in their decision making, however that there was always a 'fallback position', that is a supervisor to confer with.*

AS and RNs were comfortable with the concept of taking risks within the confines of their role descriptions, for example with AS for the patient's safety *'I think they trust us to make decisions on their behalf... you really should come up to be on the safe side' (P3AS)*. And this from a nurse *'I do take quite a few risks within the role that I have been trained, educated by the people I work with, knowing full well I would assume they would back me to the hilt because I'm doing it for them' (P3RN)*.

Patients' results

A total of twelve patients from each practice were invited to complete a survey requesting brief demographic data and their opinion of learning and inclusivity in decision-making relating to their health. These patients were randomly selected as they arrived for appointments. Their selection was based on the AS knowledge that the patients had attended the practice for a consultation on at least three previous occasions. Once consented patients were asked to complete an 18-item questionnaire (Appendix Four. Patient Survey).

Patient profiles

Items one to three of the Patient Survey requested data such as age, gender and presence of chronic disease. Responses were from 13 males and 35 females, of

whom a total of 30 reported having a chronic disease, while 17 did not have a chronic disease and one patient did not provide a response. Majority of the patients were aged 26-45 years (n=16) followed by those over 66 years (n=15); 46-65 years (n=13) and less than 25 years (n=4).

Patients were asked if they were able to get an appointment with the staff member of their choice on the day and who that professional was on the day of data collection. Results indicate that 73% (n=35) of patients were able to get an appointment with the staff member of their choice and that 71% (N=34) consulted a doctor only.

Patient opinions

Patients were asked to answer Items six to 16 using a rating scale of Excellent, Very Good, Good, Fair and Poor. *Item 6. I am able to get an appointment when I choose* was rated Excellent or Very good by 81% (n=39) of patients and *Item 7. I am able to get an appointment with the health professional that I choose* was rated Excellent or Very good by 77% (n=37) of patients.

Items 8 to 11 concerned the level of information given to patients by health professionals that enabled them to participate in decision making, goal setting and managing their conditions. This can be seen in Chart 1. Patient views of learning and inclusivity. The items were rated highly – with combined scores for each item of Excellent and Very Good representing 85%, 83%, 81% and 88% of responses respectively for each practice.

Patient satisfaction with the level of referral to community programs and other health workers is reported in *Item 12. I am encouraged to attend programs in the community that could help me* and *Item 13. I have been referred to other health workers when needed eg. dietician, counsellor.* The most common reason cited for not providing information (n=12) for Item 12. was that the item was not applicable to that patient. Of those who provided a response 69% (n=23) rated this item as Excellent or Very Good while Item 13. was rated highly with 83% (n=40) of patients identifying referral to other health workers when needed as Excellent or Very Good.

Item 14. The staff are respectful and show understanding of me and *Item 15. The technical skills of the staff eg. their competence and ability to do their job* reported on the level of respect staff showed to patients and the estimation of the technical skills of the staff by patients respectively. Patients were overwhelmingly positive in their response with regard to staff showing them respect with 96% (n=46) rating this item Excellent or Very Good. The technical skills of the staff were rated as Excellent or Very Good by 94% (n=43) of the patients.

Item 16. concerned the practice providing health information such as brochures and pamphlets. Almost 81% (n=38) of patients rated this item as Excellent or Very Good with one response being absent.

With *Item 17. 'If you could go anywhere to get healthcare would you choose this practice or go elsewhere?'* the unanimous response was to choose the current practice (n=48). Item 18. provided the opportunity for a free text response to the question *'Do you have any suggestions about how the practice could improve services or care for patients?'* Fourteen patients chose to provide a response.

Generally patients were satisfied with the service provided by their general practices for example *'This practice has a lot of respect and care for their patients. They don't need to improve on much, that's why they are such a popular practice'* (P2). Comment was made indicating that waiting times either for an appointment time slot or keeping to time on the allocated day, could improve, for example

'Just the usual difficulties with getting appointments with particular DRs. If you are unexpectedly sick or the kids are, it is

impossible to get appointment with usual doctor. But we have never been turned away when ringing for an appointment with on call doctor. Have even turned up without appointment with sick child in my arms and have not been turned away' (P4).

Despite this patients remained convinced they receive excellent care for example 'This practice is well run and offers a high standard of health care to both young and old patients. All in all an excellent health plan to older patients' (P3) and '... all the DRs I've encountered have been friendly and caring' (P1).

Other patient related data

Other data pertaining to patient opinions of the service provided by the practices were from the PMs Questionnaire which included the following questions –

- *'Does the practice do patient surveys? How often?'*
- *'What was the main feedback from the most recent patient survey and how were the identified issues addressed?'*

A total of three practices indicated that patient surveys were conducted at least once every three years to coincide with accreditation requirements (P1, P2 and P4), while P3 stated a practice wide survey was conducted by an external organisation on an annual basis. In addition local patient satisfaction surveys were conducted in P3 following the introduction of any new service initiatives that impacted patients. A component of the GP Registrar training seeks feedback from patients with regard to interpersonal skills. Although discussed by only one practice (P2), this would apply to each of the practices as they each facilitated GP training programs.

All practices reported that patient surveys generally yielded positive or excellent results although opportunities for improvements existed with regard to waiting times for appointments, especially with the preferred doctor. One doctor (P3) stated patients reported lack of parking as an issue. No evidence of patient surveys was provided to the researcher for inclusion in this study.

Discussion

This is the first instance of the application of the DLOQ tool to general practice microsystems in Australia. Comparisons across sectors are feasible because of the similarities between the business environment and general practice such as changes to regulations, competitors (such as super clinics in PHC), new technologies (and treatments in health care), consumer demands and factors that affect finances (Medicare rebates or Practice Incentive Programs for General Practice). Questions in the staff interview were developed to unearth the application of lessons learned to contemporary practice while the specifically customised patient questionnaire aimed to increase understanding of learning and inclusiveness from a consumer perspective.

Broad consensus from the DLOQ, staff interviews and patient questionnaires suggest that NSW general practice microsystems are learning organisations. Never the less it is essential to understand the more nuanced and sometimes contradictory qualitative data that suggests imbalances in professional development and lost opportunities for interprofessional collaboration. The former applies particularly to AS and has direct implications for patient safety, while the latter at times impacts professional values in favour of organisational imperatives with staff acquiescing to keep the peace and according to hierarchical order. The patient voice in particular intimates scope for

improvement in cross-sectoral collaboration as indicated by the lower levels of referral to other services to aid in managing patient conditions.

What characteristics of learning organisations do NSW general practice microsystems display?

This study has sought to identify the characteristics of learning organisations that NSW general practice microsystems display using the framework developed by Marsick and Watkins (2003) and measured in the Dimensions of a Learning Organisation Questionnaire. Majority of the data available in publications accessed for this thesis concerning the DLOQ relates to reliability and validity. Two articles by Marsick and Watkins (2003) and Jamali et. al (2009) provide raw data. These results can be seen in Appendix Twelve. Comparison of DLOQ mean scores across studies which shows the author, country of origin, industry and numbers involved, as well as comparative summative and individual data from each practice in this study. Marsick and Watkins (2003) present data from seven international and local studies in Taiwan, Colombia and Malaysia with a combined total of 2,653 participants. Participants were from a range of industries including small business, non-profit organisations, financial institutions, government instrumentalities and logistics firms. The study by Jamali et. al (2009) involved 227 participants in the banking (n=112) and IT (n=115) sectors in Lebanon.

Jamali et. al (2009) noted differences in results according to industry however concluded that the organisations in his study are evolving towards being learning organisations. Weaknesses lie in organisational level systems and given the interdependence of individuals, groups and the organisation, recommendations for improvement in this area were made. In analysing multiple results, Watkins and Marsick (2003) again determined the importance of 'systems, practices and structures' ^{35:133} in creating knowledge, engendering change and creating improvements, reiterating that systems thinking facilitates a learning organisation. In the aforementioned studies mean scores across the dimensions ranged from 3.13 to 5.01, whereas application of the DLOQ to NSW General Practice microsystems has demonstrated generally higher scores in all dimensions with a range between 4.18 and 5.60. By inference these high scores would establish NSW General Practice microsystems as learning organisations.

In the study of NSW General Practice microsystems as learning organisations the two dimensions that scored highly were at an individual (particularly *Dimension 1. Create continuous learning opportunities* with a score of 5.40) and global level (particularly *Dimension 7. Provides strategic leadership for learning* with a score of 5.65). Parallels can be seen in eight of the nine studies cited in Appendix Twelve. Comparison of DLOQ Means across studies where the global view dominated with *Dimension 7. Strategic leadership* scoring highest, however in contrast individual level dimensions appeared insignificant. Like the organisations in the study by Jamali et. al (2009) the NSW General Practice microsystems lowest scoring dimensions were at an organisational level. These were *Dimension 4. Creates systems to capture and share learning* (score 4.62) and *Dimension 5., Empowers people towards a collective vision* (score 4.88). This result is consistent with dimensions in five of the nine studies cited in the literature review.

The overall results of the DLOQ suggest that within NSW General practice microsystems there is ample opportunity for learning on the job and abundant prospects of ongoing education and development (Dimension 1.). This was iterated by majority of staff at all levels in the practices notwithstanding that access procedures differed between professional groups. What was exposed by the collection of data relating to professional qualifications, continuing professional development plans and hours spent in formal training in this study is that access is

not uniform. Seemingly there is a tension between informal on the job learning signaled, for example, by asking questions and through tearoom conversation versus formal structured training. In general, AS have limited access to formal training opportunities as demonstrated by the small numbers who have a continuing professional development plan, the relatively fewer hours of ongoing training received annually and above all the lack of mandatory prerequisites to perform the role. This exposes general practices, staff and patients to significant risk. RACGP accreditation standards are only advisory in relation to AS employment requirements. In an attempt to meet and balance the demands in busy practices AS may 'take on responsibilities and make judgments'^{38:7} that are not within the scope of their role. It is AS who without professional training determine who, when and sometimes how frequently patients see general practitioners and in doing this they make medical assessments or triage patients³⁹ without necessarily knowing all relevant details⁴⁰. Practices generally have protocols and procedures for making bookings however these concerns highlight issues with vicarious liability, and the quality and safety of care given to patients.

The other high scoring dimension was at the global level – *Dimension 6. Connects the organisation to the environment* and *Dimension 7. Provides strategic leadership for learning*. The few comments made by staff suggested they perceived the former as providing community services, for example by providing outreach telephone support and consultations in nearby nursing homes. Regarding the latter staff viewed each other with high regard and particular respect was shown to practice principals. A subtle sense of gratitude was expressed both for the opportunities they afforded staff and the supportive environment they cultivated. As previously reported there are contradictions between staff voiced learning opportunities and quantitative data.

While general consensus regarding the dimension *Dimensions 6. Connects the Organisation to the Environment* was positive, interesting trends emerged with interdisciplinary differences of opinion being strongest in *Item 16. My organisation encourages people to think from a global perspective* with RNs scoring 5.6 and DRs scoring 4.9. Likewise in *Item 17. My organisation works together with the outside community to meet mutual needs* showed a disparity of opinion with scores of 5.9 and 4.9 respectively for RNs and DRs.

Generally the positive patterns at individual and global level did not translate to the group and organisational levels although there was the occasional exception for example *Dimension 3. Collaboration and team learning* in P1 scored 5.40. Admittedly, several staff in each general practice clearly stated the existence of policy and procedure manuals that is a system to capture process, however this alone is insufficient to empower staff and promote collaboration. As an example of this it was reported by staff on several occasions that learning had occurred as a result of adverse events however few of the staff could emphatically report closure of the improvement loop by verifying translation into written policy or evaluation of the newly implemented strategy. There are several implications for the low scores at individual and global levels and the apparent failure to systematise practice improvement strategy. Firstly despite the fact that individuals are the repository of expert knowledge, a learning organisation is more than the sum of individual learners. These results signal instances of a gap between individual capacity to learn and the organisations receptiveness to harness what has been learned. Secondly the continued practice of engaging in discipline specific learning for example RN or DR only clinical meetings, limits shared understanding and collaborative efforts. And thirdly failure to measure gaps between current and expected performance and the results of time and resources spent on training may point to missed opportunities for professional development and to the ability to ascertain return on investment. To improve performance and facilitate change, learning must be captured and

disseminated systematically to ensure staff have shared mental models and values and that clinical practice has a common knowledge base.

According to Watkins and Marsick (2003) learning strategies are mediated by individual filters such as 'perceptions, values, beliefs'^{35:134} and understanding of the situations, and individuals are constrained in their capacity to act by their 'skills, authority, resources and power'^{35:134}. For NSW General Practice microsystems this latter point proved crucial specifically with respect to *Item 15. My organisation supports employees who take calculated risks*, which is in *Dimension 5. Empowers people towards a collective vision*. Low scores in the DLOQ were contradicted during interviews with many staff affirming an ability to take calculated risks within the scope of their professional practice. Reasons for these differences of opinion are unclear but it may be they are an artifact of the current system of professional registration and defensive practice. Two equally valid arguments provided by participants identified firstly that they were constrained by their professional roles and responsibilities and secondly that the practice of medicine is inherently high risk. For the former differences in the objectives and requisite outcomes of training for registered nurses and doctors strongly influences subsequent practice and is reinforced by regulatory authorities, scope of practice guidelines and 'a culturally and organisationally sanctioned pattern of role-domination by doctors'^{41:901} that commences during training in the acute health care setting and persists in sub acute settings. The statutory limitations and practice guidelines contribute to the quality and safety of care provided however the domination of doctor authority may act to disadvantage other staff in general practice microsystems particularly with regard to learning opportunities.

How are learning needs addressed in general practice microsystems?

Learning needs in general practice microsystems differ between roles and professions. Broadly learning is synonymous with continuing professional development (CPD) whether formal or informal. As autonomous and often contracted practitioners, doctors have the option to select ongoing education according to their areas of interest and expertise, and in cognisance of triennial CPD requirements for membership of the RACGP. For RNs initial competencies stipulated by registering authorities are complemented by annual CPD requirements for national registration and the competencies for practice nurses that are not mandatory. There are no mandated competencies for AS however the RACGP accreditation guidelines provides a list of suggested capabilities for role performance.

Majority of more formalised learning opportunities on site in general practice are targeted at qualified and training doctors in the form of clinical meetings. Given the positive outcomes for patients demonstrated by interprofessional collaboration (IPC)⁴² that is preceded by positive outcomes of interprofessional learning (IPL)⁴³ it would seem prudent for general practices to engage in this more.

RNs and AS are coached variously by their colleagues and doctors and medical students and registrars are coached by supervisory doctors. While ongoing coaching is a powerful tool to foster staff efficacy it must also be ensured that staff have role capacity. The impact of a corridor conversation or short coaching sessions should not be ignored however these methods need to be fuelled by the input of updated evidence based practice that most usually is found in formal education opportunities. It is therefore imperative that these continue irrespective of the source.

Yet another opportunity to foster learning is through performance review (PR). It is a widely accepted strategy used across industries to identify learning needs and encourage staff development. Longer term outcomes from well structured and undertaken PR in healthcare may include increased staff engagement that translates

into improved performance, reduced staff absenteeism and turnover and greater patient satisfaction ⁴⁴. In this study lack of performance reviews appeared to disadvantage AS staff who may not have the voice to address their need otherwise.

Overall patients were satisfied with the level of learning and inclusion they perceived occurred in consultations. How patient needs were addressed was most obvious where practices had or were in the process of establishing chronic care models of care wherein goal setting and personal accountability was sought from patients at regular intervals. At these consultations staff were tasked with ensuring patients had the knowledge and resources to self manage their conditions until further scheduled consultations. In addition to being a proactive strategy for health management, staff perceived this model of care to be effective in managing demand for appointments as the frequency of patient visits with poorly controlled conditions was reduced.

How does formal and informal learning occur in general practice microsystems?

Formal learning is accepted as including learning that takes place through off the job structured programs with specific objectives and outcomes, for example classroom based or workshops/conferences, or eLearning programs ⁴⁵. By contrast informal learning tends to be characterised by 'casual, unplanned encounters' ^{46:293} although some authors include coaching/mentoring in this category. The definitions emphasise instructor led versus learner led knowledge development. The latter is attributed with just in time learning such as 'corridor conversations' and account for up to 70% of learning ⁴⁵.

As previously identified DRs self select formal learning needs according to individual CPD plans and areas of interest/practice. RNs tend to participate in programs targeted at developing skills and knowledge for the scope of primary healthcare for example immunisation and chronic disease management. AS support tend not to engage in formal education programs.

There appears to be a hierarchy that exists for informal learning in general practice – AS consult colleagues and/or PM, RNs consult with colleagues and/or DRs, junior DRs consults with supervisors and ultimate arbiters are practice principals. As stated above the importance of on the job learning should not be diminished in its ability to influence and change practice however as a stand alone strategy it lacks the rigour of structured, informed and contemporary knowledge transfer and as such its use must be predicated on established or emerging evidence/best practice.

Learning for patients is largely informal and occurs through the consultation process, however practices had a range of brochures to enhance patient knowledge of conditions and services available to them. Patient learning may take on a more formal element should they be referred to specialist services, for example a dietician, physiotherapist or diabetes educator. Some patients believed their practice could improve on referring to community services to manage their conditions.

Recommendations

General practice microsystems are at the forefront of the Australian healthcare system and there is no doubt that a universal and comprehensive service for primary health care is offered. Unequivocally, the practices that participated in this study provided exemplary care. With any service that is provided to the public there is an onus to continue to offer a high quality and improved product. In looking at general practice microsystems from the perspective of a learning organisation it has been established that NSW practices are learning organisations however there are some gaps in practice that could be addressed as follows:

- 1) Establish a system for active involvement and feedback from patients
- 2) Provide an ongoing funding source to formally recognise the role of the quality improvement cycle
- 3) Foster interdisciplinary education sessions. Offering these in initial medical, nursing and allied health education programs would assist in breaking down the professional silos and foster collaborative learning
- 4) Establish mandatory entry level qualifications for administrative support staff who make critical decisions at the front line of general practice

Study limitations

The aim of this study was to explore general practice microsystems from a learning organisation perspective focusing on general practice in New South Wales. The exploratory nature of the study is reflected in the practice sample size and locations and the methodology used. The mixed method design ensured a focused examination of the complexities of a learning organisation while avoiding biases that a single research method may invite. Future studies could include:

- increased numbers of general practice microsystems
- inclusion of super clinics and practices in rural and/or remote areas
- expanded patient involvement for example through interviews.

While generalisability may not be possible the study paves the way for further investigation into strategies that undoubtedly have the potential to positively impact quality, safety and patient outcomes in general practice.

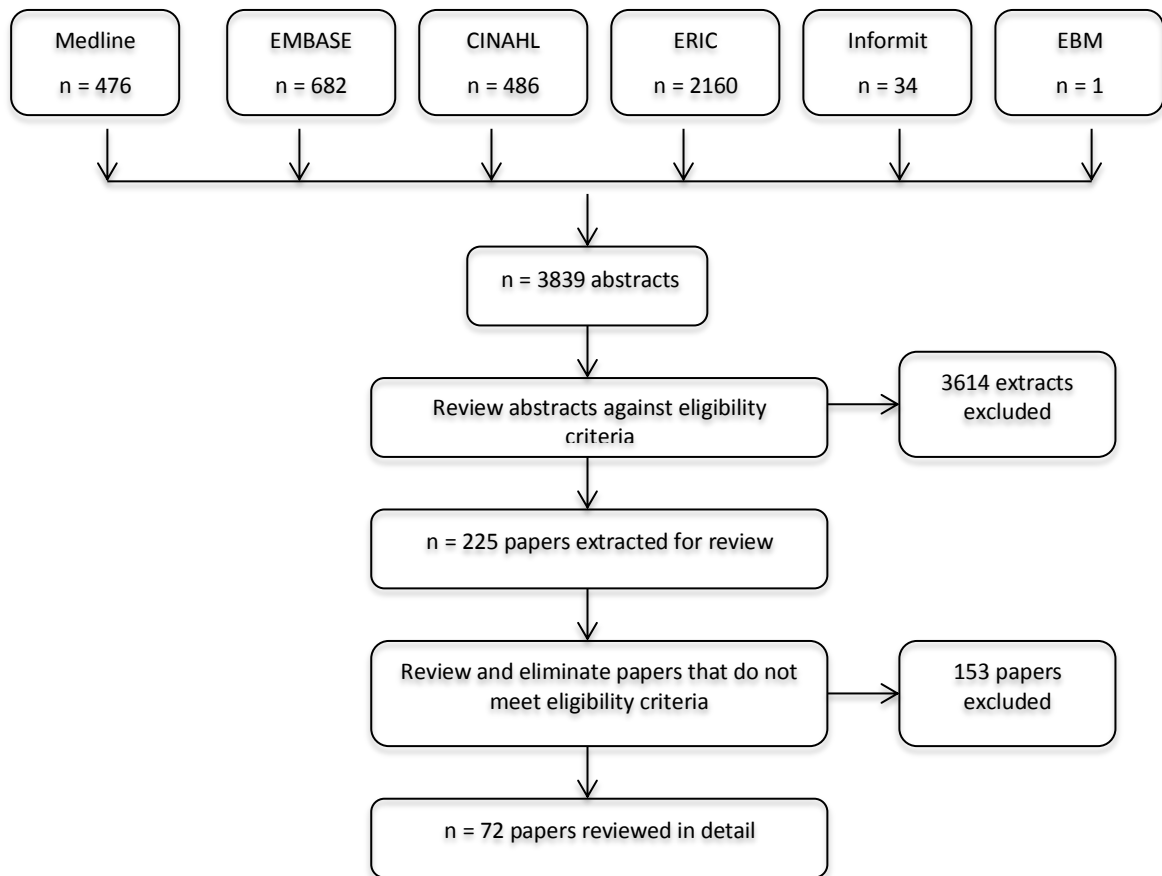
References

1. Douglas KA, Rayner FK, Yen LE, et al. Australia's primary health care workforce – research informing policy. *Med J Australia* 2009;191(2):4.
2. Pruitt SD, Epping-Jordan JE. Preparing the 21st century global healthcare workforce. *Brit Med J* 2005;330:3.
3. Harris MF, Zwar NA, Walker CF, et al. Strategic approaches to the development of Australia's future primary care workforce. *Med J Australia* 2011;194(11):4.
4. Glasgow NJ, Wells RW, Butler J, et al. The effectiveness of competency-based education in equipping primary health care workers to manage chronic disease in Australian general practice settings. *Med J Australia* 2008;188(8):5.
5. Department of Premier and Cabinet. NSW 2021 A Plan to make NSW number one. 2011.
6. Dixon-Woods M, Agarwal S, Jones D, et al. Synthesising qualitative and quantitative evidence: a review of possible methods. *J Health Serv Res Po* 2005;10(1):45-53.
7. Rozas LW, Klein WC. The Value and Purpose of the Traditional Qualitative Literature Review. *Journal of Evidence-Based Social Work* 2010;7(5):387-99.
8. Collins JA, Fauser BCJM. Balancing the strengths of systematic and narrative reviews, *Hum Reprod Update* 2005:103-04.
9. Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *J Chiro Med* 2006;5(3):101-17.
10. Baumeister R, Leary M. Writing Narrative Literature Reviews. *R Gen Psych* 1997;1(3):9.
11. Cipriani A, Geddes J. Comparison of systematic and narrative reviews: the example of the atypical antipsychotics. *Epidemiologia e Psichiatria Sociale*, 146 2003;12(3):146.
12. Denzin NK, Lincoln YS. *The Sage Handbook of Qualitative Research*: Sage Publications Inc, 2011.
13. Baxter P, Jack S. Qualitative cast study methodology: study design and implementation for novice researchers. *Qual Rep* 2008;13(4):544-59.
14. Johnson RB, Onwuegbuzie AJ, Turner LA. Toward a Definition of Mixed Methods Research. *J Mix Method Res* 2007;1(2):112-33.
15. Commonwealth of Australia. National Arrangements for Quality and Safety of Healthcare in Australia – the National Report for the Review of Future Governance Arrangements for Safety and Quality in Healthcare. 2005.
16. Nelson EC. Microsystems in health care: part 1. Learning from high-performing front-line clinical units. *J Qual Imp* 2002;28(9):472-93.
17. Matlay H. Organisational Learning in Small Learning Organisations: An Empirical Overview. *Educ Train* 2000;42(4):9.
18. Senge P. *The fifth discipline : the art and practice of the learning organization* New York: Double Day, 2006.
19. Senge PM. *The Leader's New Work: Building Learning Organizations*. *Sloan Manage Rev* 1990;32(1):7-23.
20. Ng PT. The learning organisation and the innovative organisation. *Hum Syst Manage* 2004;23(2):93-100.
21. O'Keefe T. Towards Zero Management Learning Organisations: A Honey-Bee Perspective. *J Eur Indust Train* 2005;29(9):14.
22. O'Sullivan F. Learning Organisations--Reengineering Schools for Life Long Learning. *School Leadership Manage* 1997;17(2):13.
23. Davies HT. Developing learning organisations in the new NHS. *Brit Med J* 2000;320(7240):998-1001.

24. Phelan DR. Applying the principles of organisational learning. *Healthcare R Online* 2002;6(2).
25. Nikula RE. Organisational learning within health care organisations. *International J Med Inform* 1999;56(1-3):5.
26. Michaux A. The Learning Organisation: Is it achievable in a human services context? Conference presentation 2002.
27. Lee-Kelley L. An Exploration of the Relationship between Learning Organisations and the Retention of Knowledge Workers. *Learn Org* 2007;14(3):18.
28. Waldman J, Kelly F, Aurora S, et al. The Shocking Cost of Turnover in Health Care. *Health Care Manage R* 2004;29(1):5.
29. Rowley SD. The journey of a teaching hospital to become a learning organisation. *Aust Health Rev* 2006;30(2):232-40.
30. Birluson P. Building a learning organisation in a child and adolescent mental health service. *Aust Health Rev* 1998;21(3):223-40.
31. Creswell JW. *Research Design - Qualitative, quantitative and mixed methods approaches*: Sage Publications, 2009.
32. Leech N, Onwuegbuzie A. A typology of mixed methods research designs. *Qual Quant* 2009;43(2):265-75.
33. Patton MQ. *Qualitative research and evaluations methods*. 3rd edn. ed: Sage Publications, 2002.
34. Cresswell J, Clark VP. *Designing and Conducting Mixed Methods Research*: Sage Publications, 2011.
35. Marsick V, Watkins K. Demonstrating the Value of an Organization's Learning Culture: The Dimensions of the Learning Organization Questionnaire. *Adv Dev Hum Res* 2003;5(2):132-51.
36. Pearce C. Corridor teaching. 'Have you got a minute...?'. *Aust Fam Physician* 2003;32(9):745-47.
37. Leech NL, Onwuegbuzie AJ. An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychol Quart* 2007;22(4):557.
38. Swinglehurst D, Greenhalgh T, Russell J, et al. Receptionist input to quality and safety in repeat prescribing in UK general practice: ethnographic case study. *Brit Med J* 2011;343.
39. Hall SJ, Phillips CB, Gray P, et al. Where there is no gold standard: Mixed method research in a cluster randomised trial of a tool for safe prioritising of patients by medical receptionists. *International J Mult Res App* 2011;5(1):25-39.
40. Patterson E, Forrester K, Price K, et al. Risk reduction in general practice and the role of the receptionist. *J Law Med* 2005;12(3):8.
41. Nugus P, Greenfield D, Travaglia J, et al. How and where clinicians exercise power: Interprofessional relations in health care. *Soc Sci Med* 2010;71(5):898-909.
42. Reeves S PL, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes. *The Cochrane Collaboration*, 2013:1-47.
43. Jackson CL, Nicholson C, Davidson B, et al. Training the primary care team - a successful interprofessional education initiative. *Aust Fam Physician* 2006;35(10):4.
44. West M, Dawson J, Admasachew L, et al. NHS Staff Management and Health Service Quality. 2011:16.
45. Cunningham J, Hillier E. Informal learning in the workplace: key activities and processes. *Educ Train* 2013;55(1):37-51.
46. Noe RA, Tews MJ, McConnell Dachner A. Learner Engagement: A New Perspective for Enhancing Our Understanding of Learner Motivation and Workplace Learning. *The Acad Manage Ann* 2010;4(1):279-315.

47. Pedler M, Burgoyne J, Boydell T. *The Learning Company: a strategy for sustainable development*. Berkshire, England: McGraw-Hill Book Company, 1991.
48. Tannenbaum SI. Enhancing continuous learning: Diagnostic findings from multiple companies. *Hum Resour Manage* 1997;36(4):437-52.
49. Rushmer RK, Kelly D, Lough M, et al. The Learning Practice Inventory: diagnosing and developing Learning Practices in the UK. *J Eval Clin Pract* 2007;13(2):206-11.
50. de Villiers WA. The learning organisation: validating a measuring instrument. *J of Appl Bus Res* 2008;24(4):11-22.
51. O'Neil J. Participant's Guide for Interpreting Results of the Dimensions of the Learning Organization Questionnaire. *Adv Dev Hum Res* 2003;5(2):222-30.
52. Yang B. Identifying Valid and Reliable Measures for Dimensions of a Learning Culture. *Adv Dev Hum Res* 2003;5(2):152-62.
53. Dartmouth College IfHI. Assessing, Diagnosing and Treating Your Outpatient Primary Care Practice Secondary Assessing, Diagnosing and Treating Your Outpatient Primary Care Practice 2005.
<http://www.clinicalmicrosystem.org/materials/workbooks/>
54. Jordan JE, Briggs AM, Brand CA, et al. Enhancing patient engagement in chronic disease self-management support initiatives in Australia: the need for an integrated approach. *Med J Australia* 2008;189(10).
55. Nagy Hesse-Biber S, Leavy P. *The Practice of Qualitative Research*. 2nd ed. California: Sage Publications, 2011.
56. Taylor PJ, Small B. Asking applicants what they would do versus what they did do: A meta-analytic comparison of situational and past behaviour employment interview questions. *J Occup Organ Psych* 2002;75(3):277-94.

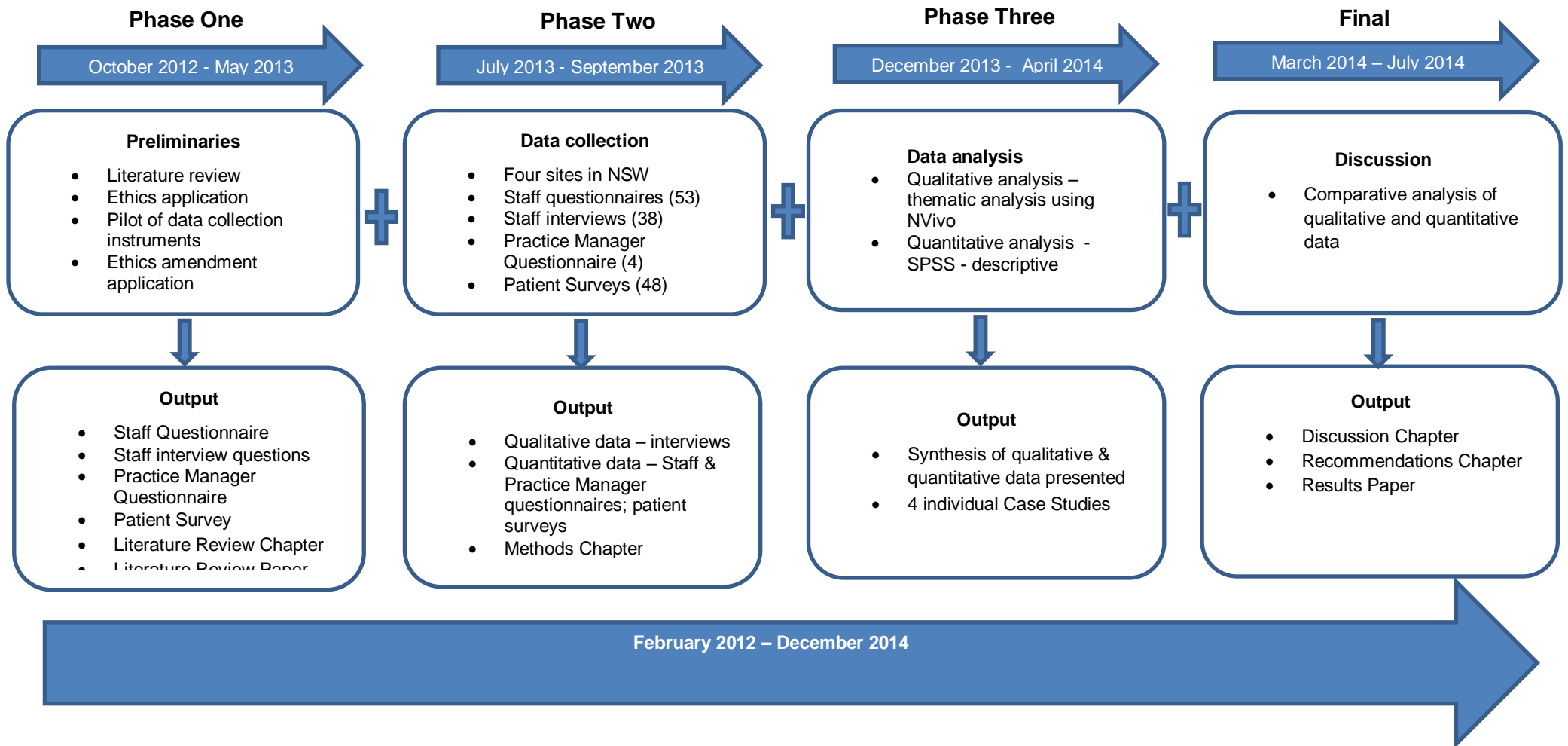
APPENDIX ONE. Figure 1. Process Of Extracting, Identifying And Reviewing Literature On General Practice As A Learning Organisation



APPENDIX TWO – Figure 2. Study Design

Research Questions

1. What characteristics of Learning Organisations do NSW general practice microsystems display?
2. How do formal and informal learning occur in general practice microsystems?
3. How are learning needs of the various professional and administrative staff addressed in general practice microsystems?



APPENDIX THREE. Practice Staff Questionnaire



Approval No: 2012-7-53

**AUSTRALIAN INSTITUTE OF HEALTH
INNOVATION**
FACULTY OF MEDICINE

PRACTICE STAFF QUESTIONNAIRE
General Practices as Learning Organisations

Please complete this questionnaire before the face to face interview with the researcher. It should only take 10-15 minutes of your time. When you have completed the questionnaire please give it to the researcher.

Part A of this form asks for demographic information. **Part B** is the Dimensions of a Learning Organisation Questionnaire

Practice ID: Date completed:

Name (Optional):

As this is a multi-centre study the Practice ID is used as an administrative tool in order to calculate response rates. It is only for the use of the primary investigator.

Part A

Please circle the response or write a few words as indicated below

1. What is your designation?

- Admin Support Enrolled Nurse Registered Nurse Practice Manager
- Doctor
- Allied Health – please specify
- Other – please specify.....

2. How many years experience do you have in the above role?

- 0 - 5 6 - 10 11 - 15 16 - 20 20 - 25 26 - 30
- 31+

3. What level is your base level qualification?

- Certificate III Certificate IV Hospital Certificate Undergraduate Degree
- Other – please specify Nil

4. What post-graduate qualifications do you have? (Select all relevant)

Certificate III Certificate IV Certificate Diploma
Masters Doctorate
Other – please specify Nil

5. In the organisation that you are currently employed in what training did you receive to prepare or assist you for your role (eg. Orientation, procedures, communications)? Circle all that are relevant

Orientation/Induction On the job coaching
Policy and Procedures Communications skills
Skills training eg. computer, taking ECGs Please specify

.....

Other – Please specify.....

.....

a. Did this training prepare you for the role?

Yes No

If you answered No to a. above please tell us why

.....
.....

6. Do you have a continuing professional development (CPD) plan?

Yes (go to 6a & 6b) No (go to 6c)

6a. If you answered Yes who do you review this plan with?

.....

6b. How often is the CPD plan reviewed?

Monthly Six monthly Annually Bi-annually

6c. If you answered No to Q6 please comment eg. why not, would you like to have a CPD plan, what prevents you having one?

.....
.....

7. How many hours of CPD did you complete in the past year?

0-8 8-16 16-24 24-32 32-40 40+

8. What topics were covered in the CPD that you have attended in the past year?

.....
.....

9. How were you funded to attend CPD in the past year?

Self funded as an employer Funded by your employer Self funded as an employee

Partially funded by employer

Other – please specify

.....

10. What other training do you think is needed to enable you to perform your role?

.....

11. Will you be supported to do this training?

Yes No

12. Please provide any other information/comment that you think may be useful in this research

.....

Part B

General Practices as Learning Organisations – Dimensions of a Learning Organisation Questionnaire

(Adapted from Marsick et. al 2003 Dimensions of a Learning Organisation)

Please circle the response that best represents your view. There is no right or wrong answer. In Item 1 if you agree that in your organisation people help each other learn then you would circle 6; if you disagree you would circle a 1. Otherwise your view may be elsewhere on the scale.

Item	Ratings					
	Almost Never					Almost Always
	1	2	3	4	5	6
1. In my organisation people help each other learn	1	2	3	4	5	6
2. In my organisation, people are given time to support learning	1	2	3	4	5	6
3. In my organisation, people are rewarded for learning	1	2	3	4	5	6
4. In my organisation, people give open and honest feedback to each other	1	2	3	4	5	6
5. In my organisation, whenever people state their view, they also ask what others think	1	2	3	4	5	6
6. In my organisation, people spend time building trust with each other	1	2	3	4	5	6
7. In my organisation, teams/groups have the freedom to adapt their goals as needed	1	2	3	4	5	6
8. In my organisation, teams/groups revise their thinking as a result of	1	2	3	4	5	6

group discussions or information collected						
9. In my organisation, teams/groups are confident that the organisation will act on their recommendations	1	2	3	4	5	6
10. My organisation creates systems to measure gaps between current and expected performance	1	2	3	4	5	6
11. My organisation makes its lessons learned available to all employees	1	2	3	4	5	6
12. My organisation measures the results of the time and resources spent on training	1	2	3	4	5	6
13. My organisation recognizes people for taking initiative	1	2	3	4	5	6
14. My organisation gives people control over the resources they need to accomplish their work	1	2	3	4	5	6
15. My organisation supports employees who take calculated risks	1	2	3	4	5	6
16. My organisation encourages people to think from a global perspective	1	2	3	4	5	6
17. My organisation works together with the outside community to meet mutual needs	1	2	3	4	5	6
18. My organisation encourages people to get answers from across the organisation when solving problems	1	2	3	4	5	6
19. In my organisation, leaders mentor and coach those they lead	1	2	3	4	5	6
20. In my organisation, leaders continually look for opportunities to learn	1	2	3	4	5	6
21. In my organisation, leaders ensure that the organisation's actions are consistent with its values	1	2	3	4	5	6

If you have any inquiries about this questionnaire please contact Anne Sinclair at the University of New South Wales on (02) 9385 9943.

THE UNIVERSITY OF NEW SOUTH WALES
 UNSW SYDNEY NSW 2052 AUSTRALIA
 Level 1, AGSM Building

T +61(2) 9385 2590 | F +61 (2) 9663 4926 | ABN 57 195 873 179 | CRICOS Provider Code 00098G

j.braithwaite@unsw.edu.au | www.aihi.unsw.edu.au

SYDNEY | CANBERRA | AUSTRALIA



APPENDIX FOUR. Patient Survey



UNSW
THE UNIVERSITY OF NEW SOUTH WALES

Approval No: 2012-7-53

**AUSTRALIAN INSTITUTE OF HEALTH
INNOVATION**
FACULTY OF MEDICINE

PATIENT SURVEY

General Practice as a Learning Organisation

Practice ID: Date completed:

Name (Optional):

As this is a multi-centre study the Practice ID is used as an administrative tool in order to calculate response rates. It is only for the use of the primary investigator.

Thank you for agreeing to complete this survey. It should only take 5-10 minutes of your time. When you have completed the survey please give it to the researcher.

1.	What is your age?	Under 25 years	26-45 years	46-65 years	66 years or older	
2.	What is your gender?	Male	Female			
3.	Do you have a chronic condition/disease? (A chronic condition is one that lasts for more than 3 months that will be treated but not cured)	Yes	No			
4.	Did you get an appointment with the staff member that you wanted to see today?	Yes	No	Did not matter who I saw today		
5.	Who will you see today	Doctor	Nurse	Other		
Please provide your opinion and rate the following items about this practice. Circle the response that best represents your view. There is no right or wrong answer.						
6.	I am able to get an appointment when I choose	Excellent	Very Good	Good	Fair	Poor
7.	I am able to get an appointment with the health professional that I choose	Excellent	Very Good	Good	Fair	Poor
8.	I am asked for my ideas when a treatment plan is made	Excellent	Very Good	Good	Fair	Poor

9.	I am given choices about the treatment available	Excellent	Very Good	Good	Fair	Poor
10.	I am helped to make goals and decisions so that I can manage my condition	Excellent	Very Good	Good	Fair	Poor
11.	I am provided with enough information to manage my condition	Excellent	Very Good	Good	Fair	Poor
12.	I am encouraged to attend programs in the community that could help me	Excellent	Very Good	Good	Fair	Poor
13.	I have been referred to other health workers when needed eg. Dietician, counsellor	Excellent	Very Good	Good	Fair	Poor
14.	The staff are respectful and show understanding of me	Excellent	Very Good	Good	Fair	Poor
15.	The technical skills of the staff eg. their competence and ability to do their job is	Excellent	Very Good	Good	Fair	Poor
16.	The practice provides health information like brochures and pamphlets	Excellent	Very Good	Good	Fair	Poor
17.	If you could go anywhere to get healthcare would you choose this practice or go elsewhere?	Choose this practice	Go elsewhere			
18.	Do you have any suggestions about how the practice could improve services and care for patients?					

If you have any inquiries about this questionnaire please contact Anne Sinclair at the University of New South Wales on (02) 9385 9943.

THE UNIVERSITY OF NEW SOUTH WALES
UNSW SYDNEY NSW 2052 AUSTRALIA
Level 1, AGSM Building

T +61(2) 9385 2590 | F +61 (2) 9663 4926| ABN 57 195 873 179 | CRICOS Provider Code 00098G

j.braithwaite@unsw.edu.au | www.aihi.unsw.edu.au

SYDNEY | CANBERRA | AUSTRALIA



APPENDIX FIVE. Practice Manager Questionnaire



Approval No: 2012-7-53

**AUSTRALIAN INSTITUTE OF HEALTH
INNOVATION**
FACULTY OF MEDICINE

PRACTICE MANAGER OR PRIMARY CONTACT OF PRACTICE

General Practices as Learning Organisations

Please complete this questionnaire. It should only take 10-15 minutes of your time. Any information that is obtained in connection with this study and that can be identified with you will remain confidential. In any publication, information will be provided in such a way that you cannot be identified. When you have completed the questionnaire please give it to the researcher.

Practice ID: Date completed:

Name (Optional):

1. What is the Accessibility/Remoteness Index of this practice? (Please circle)

Highly Accessible Accessible Moderately Accessible Remote
Very Remote

2. What is the size of the population served by this practice? (Please circle)

0 - 5,000 5,000 - 10,000 10,000 - 20,000 20,000-25,000

3. How many staff of each designation work in this practice?

Admin Support Enrolled Nurse Registered Nurse
Practice Manager Doctor
Allied Health please specify designation
Other please specify designation

4. Is this practice part of a network of practices?

Yes No

If you answered Yes to Q4 above how many practices are there in the network?

.....

5. What professional development is provided for staff?

.....
.....
.....

6. How are topics for professional development identified?

.....
.....
.....

7. Are staff provided with paid study leave?

Yes

No

If Yes how many hours of paid study leave is available to each staff member each year?

0-8 8-16 16-24 24-32 32-40 40+

If No how much study leave without pay is available to each staff member each year?

0-8 8-16 16-24 24-32 32-40 40+

8. What supervision or on the job coaching is provided to staff?

.....
.....
.....

9. If a staff member were having difficulties with performing some aspect of their role what options are available to help them?

.....
.....
.....

10. How are staff made aware of policy, procedure, legislation changes or updates that they may need to know to fulfill their job requirements?

.....
.....
.....

If you have any inquiries about this questionnaire please contact Anne Sinclair at the University of New South Wales on (02) 9385 9943.

THE UNIVERSITY OF NEW SOUTH WALES
UNSW SYDNEY NSW 2052 AUSTRALIA
Level 1, AGSM Building



T +61(2) 9385 2590 | F +61 (2) 9663 4926| ABN 57 195 873 179 | CRICOS Provider Code 00098G

j.braithwaite@unsw.edu.au | www.aihi.unsw.edu.au

SYDNEY | CANBERRA | AUSTRALIA

APPENDIX SIX. Tool Selection And Development Supplement

Quantitative data collection tools

The tool selected to investigate learning organisation capacity was the Dimensions of a Learning Organisation Questionnaire (DLOQ)(included in Appendix Three. Practice Staff Questionnaire) ³⁵. The tool is one of only four validated tools identified in the literature review for the study. The validation process was clearly described and the format was standardised and had a degree of clarity in the process for identifying responses and scoring items. Use was therefore more straightforward than the other validated questionnaires found during research for this study – Pedler's *Learning Company Survey* ⁴⁷, Tannenbaum's *Learning Environment Survey* ⁴⁸ and Rushmer's *Learning Practice Inventory* ⁴⁹. While Tannenbaum's validation process was clear, the questionnaire was lengthy (more than 50 items) and item response methods changed at the conclusion of the tool. Like Pedler's tool the Learning Practice Inventory (LPI) ⁴⁹ was also time consuming, while the latter was intended for use in a facilitated discussion around improvement strategies. The DLOQ was readily available in the public domain as was a scoring guide ⁵⁰.

Additionally since the development of the original 43 item DLOQ, a 21-item DLOQ had been developed and validated as being of equal standing to the original ⁵¹. The short version of the DLOQ was selected as it has been validated and recommended for research purposes ⁵² as opposed to the longer 43 item version which is recommended for a diagnostic exercises ⁵². The short version of the DLOQ is ideal for use in an industry that is time poor as it is relatively short (21 questions) and easy to administer.

The 21 question DLOQ contains three questions relating to each of the seven dimensions of a learning organisation, that is 1) create continuous learning opportunities, 2) promote inquiry and dialogue, 3) encourage collaboration and team learning, 4) create systems to capture and share learning, 5) empower people to a collective vision, 6) connect the organisation to the environment and 7) provide strategic leadership for learning.

The patient questionnaire was adapted from the Assessment of Care for Chronic Conditions Survey in Assessing, Diagnosing and Treating Your Outpatient Primary Care Practice ⁵³. This questionnaire is part of a suite of tools and workbooks developed by the Dartmouth College, Institute for Healthcare Improvement aimed at improving the quality and value of the patient experience (11:2). Although not validated, the tool is best used as an adjunct to other tools that are 'designed to guide your clinical microsystem on a journey to develop better performance' ^{53:2}. The original questionnaire explores the type of help patients get from their primary health care provider, whereas the purpose of data collection for this study was to obtain patients' perception of their own learning in their interactions with healthcare staff in general practice. As a consequence some questions from the original tool were excluded from the questionnaire for this study eg. time spent getting through to the office by phone, number of visits to emergency in the last 12 months and feelings about the quality of the service received. Five questions relating to the individual patient were inserted at the beginning of this questionnaire. These pertained to age, gender, the presence or absence of chronic disease, whether the person got an appointment with the professional that they preferred that day and which professional they were seeing that day (see Appendix X). Nationally self-management education programs are the cornerstone of chronic disease management programs that are aimed at reducing disease burden ⁵⁴. The purpose of requesting chronic disease data was to ascertain if these patients do consider they receive sufficient information and are included in decision-making regarding their conditions.

A questionnaire was developed for completion by the Practice Manager or in their absence by a representative. It was developed by the researcher and was based on the needs of the study regarding learning. Data gathered included practice size, accreditation status, staffing levels (to facilitate data reporting), policies associated with professional development offered and study leave availability, collection of patient feedback and student placement capacity. Accreditation status is significant since the Royal Australian College of General Practice Standards for General Practice (4th Edn) incorporate several criteria related to education and learning eg. 1.2.2 that patients are provided with sufficient information to make informed decisions about their health, 1.6.1 that the practice engages with other services (relates to item 16 and 17 of the DLOQ), 3.2.2 that staff are qualified, registered with an Australian authority and engage in continuing professional development and finally 3.2.2 that admin staff are provided with role specific training. Collection of patient feedback attests to the practices ability to learn from feedback notwithstanding the physical limitations of the premises and the implications of this eg. fixed number of consultation rooms.

Qualitative data collection tools

Qualitative data collection was derived from semi-structured interviews with practice staff who self-selected (see Appendix Two. Figure 2. Study Design), however a prerequisite to interviewing was completion of the staff questionnaire. Interviews were conducted with any practice staff member who agreed to participate and who had previously completed the DLOQ. Interviews were semi-structured however commenced with the researcher seeking clarification and a rationale for participant responses to the DLOQ items, most particularly those questions that the participant had scored lower eg. 3 or less. In some instance participants required clarification of questions.

A list of open ended and situational and behaviourally designed questions were developed to use during the interviews (Appendix Ten. Supplementary interview questions). The aim of these questions was to elucidate how learning occurs and how lessons learned are shared with members of the team. Use of open-ended questions generally result in a greater depth of information being provided. While the questions guide the conversation participants have the freedom to discuss what is of most interest to them⁵⁵. Although controversial and most often applied to interview scenarios, the purpose of using situational/behavioral questions was to reduce the dissonance between what participants know 'should occur' versus 'what really occurs'. Both types of questions are based on previous experiences and application of knowledge and are predictive of future responses to a situation⁵⁶ and as such may reflect actual behaviour. Semi structured interviews are a useful tool for uncovering subjective opinion⁵⁵ and ensuring efficient use of time³³, which was an important consideration in the busy general practice environment. With these considerations in mind the following questions from Appendix Ten were prioritized:

1. If you have a new idea for how to do something in this practice how would you go about getting others to think about/make the change?
2. If it was discovered that a patient had not had an important test that had been ordered or that they had not been given a test result what would happen?
3. What happens if you have an issue that you are concerned about? How is it managed? How would this situation be prevented from occurring again? (Risks/issues logs, agenda items, processes, actions, outcomes) Prompt – this might be related to management of a patient or a policy or procedure.

APPENDIX SEVEN. Practice Details

Practice	Services offered	Accessibility/ Remoteness Index*	Population served	Staffing	Hours	Accreditation	Networked practice	Website
P1.	Preventive health care, antenatal care and paediatrics (including childhood immunisation), women's health, family planning, men's health, travel health, minor surgical procedures, chronic disease management, mental health and counselling.	Highly accessible	5,000-10,000	DRs = 10 RNs = 3 AS support = 6 PM = 1 Allied Health = 3 (AH not included in data collection)	5 days per week + Saturday half day	GPA	No	Yes includes information about appointment times, DRs hours, services offered, contact details, location details, the health team including allied health, medical complaints.
P2.	Family health – baby, children, vaccinations (including childhood immunisations), allergy testing, women's & men's, pregnancy & family planning, young people's health, aged care, palliative care, chronic care management, counseling – individual, couples & families, mental health, medicals and Workcover.	Highly accessible	20,000-25,000	Doctor = 7 RNs = 2 AS support = 4 PM = 1	5 days per week + half day Saturday & Sunday	AGPAL	No	Yes includes information about the health team, services offered, fees, appointments, after hours services, contact details, confidentiality, medical complaints
P3.	Family practice, preventive health checks, chronic disease management, skin checks & surgery, acute & emergency medical care, Women's health and contraception, travel medicine, wound management.	Remote	5,000-10,000	DRs = 9 RNs = 6 Admin support = 9 PM = 1 Allied Health = 1 (AH not included in data collection)	5 days per week + half day Saturday	GPA		Yes includes information about contact details, location, hours, emergency and after hours services, the health team
P4.	Women's health, including IUD insertions, men's health, mental health, paediatrics, sports medicine, aged care, chronic care, skin cancer work and acute care (from Medicare Local website)	Highly accessible	10,000-20,000	DRs = 13 RNs = 4 Admin support = 10 PM = 1	5 days a week + half day Saturday	AGPAL	No	No

*The purpose of the Remoteness Structure is to provide a classification for the release of statistics that inform policy development by classifying Australia into large regions that share common characteristics of remoteness. (<http://www.abs.gov.au/websitedbs/d3310114.nsf/home/remoteness+structure> accessed 12.2.14).

APPENDIX NINE. Aggregated DLOQ Scores

Domains	Items	AS	RN	DR	PM
Create Continuous Learning Opportunities	1. In my organisation, people help each other learn	5.6	5.9	5.7	6.0
	2. In my organisation, people are given time to support learning	5.1	5.4	5.4	5.5
	3. In my organisation, people are rewarded for learning	5.1	5.2	4.9	6.0
Promote Inquiry & Dialogue	4. In my organisation, people give open and honest feedback to each other	5.1	5.2	5.1	5.5
	5. In my organisation, whenever people state their view, they also ask what others think	5.0	5.2	5.0	5.0
	6. In my organisation, people spend time building trust with each other	5.1	5.3	5.1	5.5
Encourage Collaboration & Team Learning	7. In my organisation, teams/groups have the freedom to adapt their goals as needed	5.2	5.1	4.9	5.5
	8. In my organisation, teams/groups revise their thinking as a result of group discussions or information collected	4.9	5.1	4.9	6.0
	9. In my organisation, teams/groups are confident that the organisation will act on their recommendations	5.0	5.1	4.8	5.5
Create Systems to Capture & Share Learning	10. My organisation creates systems to measure gaps between current and expected performance	4.9	5.0	4.7	5.5
	11. My organisation makes its lessons learned available to all employees	5.1	4.7	5.0	6.0
	12. My organisation measures the results of the time and resources spent on training	4.6	4.7	3.9	4.0
Empowers People towards Collective Vision	13. My organisation recognizes people for taking initiative	5.1	5.4	5.1	6.0
	14. My organisation gives people control over the resources they need to accomplish their work	5.1	5.3	5.0	5.5
	15. My organisation supports employees who take calculated risks	5.1	4.6	4.2	6.0
Connects the Organisation to the Environment	16. My organisation encourages people to think from a global perspective	4.8	5.6	4.9	5.5
	17. My organisation works together with the outside community to meet mutual needs	5.4	5.9	4.9	5.5
	18. My organisation encourages people to get answers from across the organisation when solving problems	5.5	5.7	5.1	5.0
Provides Strategic Leadership for Learning	19. In my organisation, leaders mentor and coach those they lead	5.3	5.6	5.5	6.0
	20. In my organisation, leaders continually look for opportunities to learn	5.4	5.7	5.5	5.5
	21. In my organisation, leaders ensure that the organisation's actions are consistent with its values	5.8	5.5	5.3	4.5

APPENDIX EIGHT. Staff Location And Designation For
 Completion Of DLOQ & Interviews
 (Shaded Columns Show Numbers For Interviews)

		Designation										Total	
		AS	AS	EN	EN	RN	RN	PM	PM	DR	DR	Tot	Tot
Location	P1.	2	1	1	0	1	0	0	0	5	4	9	5
	P2.	3	3	0	0	2	2	1	1	7	5	13	11
	P3.	7	4	0	0	5	5	1	1	7	6	20	16
	P4.	4	4	0	0	1	1	0	0	6	2	11	7
Total		16	12	1	0	9	8	2	2	25	17	53	39

APPENDIX TEN. Supplementary Interview Questions



Approval No: 2012-7-53



**AUSTRALIAN INSTITUTE OF HEALTH
INNOVATION**
FACULTY OF MEDICINE

FACE-TO-FACE INTERVIEW QUESTIONS – SUPPLEMENTARY QUESTIONS

General Practices as Learning Organisations

1. What opportunities are there for you to learn parts of other workers roles? What happens to a workers tasks if they are away?
2. If you have a new idea for how to do something in this practice how would you go about getting others to think about/make the change?
3. If changes to the way something is done in the practice are needed what systems are in place to let people know?
4. If it was discovered that a patient had not had an important test that had been ordered or that they had not been given a test result what would happen?
5. What happens if you have an issue that you are concerned about? How is it managed? How would this situation be prevented from occurring again? (Risks/issues logs, agenda items, processes, actions, outcomes) Prompt – this might be related to management of a patient or a policy or procedure.
6. How is everyone kept updated with the latest in health management practices?
7. How is everyone kept informed of what is happening in this practice?
8. Does the practice engage in quality improvement practices? What are some of the recent improvements that have been made?

THE UNIVERSITY OF NEW SOUTH WALES
UNSW SYDNEY NSW 2052 AUSTRALIA
Level 1, AGSM Building

T +61(2) 9385 2590 | F +61 (2) 9663 4926| ABN 57 195 873 179 | CRICOS Provider Code
00098G

j.braithwaite@unsw.edu.au | www.aihi.unsw.edu.au

SYDNEY | CANBERRA | AUSTRALIA



APPENDIX ELEVEN. Key Themes From Semi-Structured Interviews

Code	Operational Definitions	Issues/themes
1. Communication and support	Methods of sharing knowledge and ways staff assist each other with daily responsibilities – interpersonal and practice wide	Being heard, openness to new ideas, giving and receiving feedback, supportive practices during doctors absences
2. Learning	Personal and practice wide – how learning occurs, sharing of lessons learned, who with, how and application of learning for example to practice improvement	Modes of learning, sharing and application, implementation of lessons learned, role of patients
3. Risk management	Proactive strategies that are in place, adverse events management including immediate resolution and long-term control.	Accreditation, quality and practice improvement, safety of clinical practice, adverse event management
3a. Patient results management	A system for checking and responding according to clinical significance to all patient results	Obtaining results
3b. Patient notes	Patient clinical notes that are used to record ongoing health management issues	Adequate and accurate for comprehensive ongoing patient management
3c. Policy and procedure	Including accessibility, use of, how updating occurs and how staff are informed of amendments that impact their roles	Availability and accessibility, staff safety,
4. Patient voice – surveys and complaints	How patient opinion/feedback is sought, responded to and acted upon	Whether undertaken and acted upon
5. Practice nurse role	The scope of the role responsibilities, how clinical tasks are learned and the intersection with the doctors role	Scope of the role and associated responsibilities, negotiating differences between doctors clinical management preferences
6. Clarification of DLOQ items	Questions that frequently caused uncertainty of meaning eg. Item15 – my organisation supports employees who take calculated risks - ? empowered to deal with out of ordinary occurrences eg. patient complaints, abhorrent behavior - ? discipline differences	Requests to assist with understanding items in DLOQ prior to assigning a rating – particularly Items 12 and 15

APPENDIX TWELVE. Comparison Of DLOQ mean scores Across Studies
 (Source: 1. Marsick And Watkins, 2003; 2. Jamali, 2009)

	Author	Context	N	Individual Level		Group Level	Organizational Level		Global Level	
	Author	Content	N	1.Continuous Learning	2.Inquiry & Dialogue	3.Collaboration & Team Learning	4.Create Systems	5.Empower People	6.Connect the Organisation	7.Strategic Leadership
1.	Watkins & Marsick	International	389	3.94	3.91	3.98	3.50	3.74	4.00	4.13
1.	Selden	South Eastern region (USA)	142	5.01	4.05	4.09	3.44	3.83	4.17	4.49
1.	McHargue	National	264	4.16	4.15	4.33	3.78	4.20	4.35	4.73
1.	Lien, Yang & Li	Taiwan	79	3.97	4.05	4.00	4.13	4.08	4.01	4.26
1.	Hernandez	Colombia, Malaysia	906 628	3.94 4.05	4.16 4.08	4.01 3.84	4.09 3.96	4.21 3.79	3.96 3.98	4.27 4.21
1.	Ellinger	National	208	4.12	4.04	4.13	3.70	3.93	4.19	4.26
1.	Milton & Watkins	Global	37	4.26	4.35	4.32	3.13	4.15	3.99	4.42
2.	Jamali, Sidani & Zouein	Lebanon	227	4.00	4.15	3.88	3.90	3.68	4.02	4.20
	Current study - cumulative	NSW, Australia		5.30	5.15	4.95	4.62	4.88	5.20	5.39
	P1		9	5.40	5.04	5.40	5.00	4.98	5.10	5.65
	P2		12	5.56	5.22	4.82	4.41	5.11	5.20	5.39
	P3		20	5.34	5.10	5.16	4.95	5.05	5.35	5.47
	P4		11	4.97	5.18	4.95	4.59	4.62	5.08	5.49

