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Cover picture: The cover picture is representative of networks and reflects the articles in this issue which are part of the health network systems in which we operate.

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EDITORIAL

Tinkering Towards Real Reform: a need for a more cohesive health policy

In the last editorial I paused to comment on the fact that Australia seemed to lack an overarching vision for healthcare following the then recent publication of the Commission of Audit Report. [1] Subsequent to that, the debate has continued about the wisdom or otherwise of the proposed co-payment for GP visits and the move to Primary Health Networks (PHNs). This brings into question not so much the vision but what we consider to be good health policy in Australia and if can we gain consensus about that? This is a time when there is also increased speculation and interest in the implications for the proposed review of the Federation through a 'White Paper' announced by the Prime Minister. [2]

In what might be described as tinkering with health policy drivers, the PHN proposed boundaries have been announced with large geographic boundaries reducing 61 Medicare Locals to 30 PHNs. The new role of the PHNs will be purchasing and contracting rather than service delivery. So we have moved to a purchaser-provider split in PHC without much public discussion about how to do this, what might work best and any assessment of the system's capacity to make this change. The immediate question that springs to mind is if this is to occur in PHC, when is it to be implemented in the acute care sector? The alignment of PHN and LHD boundaries is logical but may not achieve much if financing systems remain distinct and only the PHC system is contestable. In the absence of known public policy that describes the strategy behind these changes, the description of tinkering remains apt.

This tinkering with elements of how the health system functions and is financed is said to be a response to the overall economic circumstances of the nation, the so-called need to curtail the 'age of entitlement' era and is, therefore, the result of economic and political policy. This is evidenced by the fact that the co-payment policy is meant to limit utilisation and expenditure but may adversely shift utilisation and costs to the hospital system and may decrease access to those least able to pay. This circumstance demonstrates the tensions between differing policy goals and the positive and negative consequences of decisions made in isolation and from a lack of understanding of underpinning economic and public policy theory. [3]

The Federation White Paper suggests opportunity for more considered attention to developing health policy around how best to finance and deliver healthcare in Australia. In a positive sense the current tinkering with aspects of how we finance and structure our health system makes us think about our existing systems and our assumptions about what works or doesn't; the effect of governance structures based around State and Commonwealth entities; and the role of public and private providers that all deliver parts of the system and healthcare.

Health economics and the financing of health systems are like the system itself, complex. [3] Health reform at best is hard to achieve and the National Health reforms of not so long ago are testimony to that. These reforms in the end gave greater agency to the State rather than the market, were partially implemented and not necessarily well embraced by different levels of government and only gave notional acknowledgement to localism, having made little difference at the service delivery level. They are now substantially being dismantled, perhaps best described as 'reform without change and change without reform'. [4, p.693]

Good public policy takes into account local and global knowledge [5] about what works where and how the introduction of a particular approach might be translated to another system. Local knowledge also more clearly exposes poor health status and outcomes, say at a local government level, that are diluted or unseen at the aggregated level of a regional health entity or in national comparisons. We are also conditioned to compare ourselves with 'like' countries and often adopt ideas from them, sometimes

when they are still not proven, or under further change themselves. We are adept, in Australia, at providing advice and support to developing and middle income countries in the development of their particular health policy. [6] Perhaps it is time to extend our vision and use of that global knowledge in responding to the health policy challenges our local knowledge tells us are out there to be addressed in the Australian healthcare system.

Comparing how health systems work is often a collegiate practice for many of us and provides a collaborative framework for comparison of both local and global knowledge. It allows us to question and reflect and, hopefully all parties become better informed and apply new knowledge and skills to their own circumstances. In addition there is a substantial global body of health system research knowledge that documents health policy and health financing systems in both developing, middle income and developed countries.

Recently Thailand, amongst others has come to attention through these global health system researchers who have given positive recognition of the advances made in achieving high financial protection and health coverage for its population and achieving greater equity of health outcomes in little more than the past decade. [6,7]

The success and recognition given to the Thai health system has been attributed to the implementation of a range of cohesive health policy initiatives. These initiatives include a relatively high government expenditure on health, tax-financed social health insurance that was pro-poor, payment mechanisms that prevent mercenary provider practices and improved provider stewardship, good infrastructure, high quality health information systems and improved health literacy. [6, p.515] Others commenting on Thailand's success also attribute it to the capitation payment system and the introduction of purchasing of hospital and specialist services and contracting units both nationally and at the District level, the entry point to the health system. [7]

So what are the health policy lessons from Thailand and other Asian countries? The lessons learnt are that out-of-pocket payments should and can be reduced, insurance coverage should and can be expanded, escalating costs can be partly contained, inefficiencies can be corrected, and provider payment systems can be improved. Another lesson relevant to Australia is the need to clarify and strengthen accountabilities to both national priorities and meeting local communities' specific needs and this will most likely require a shift from governance of health to 'multisectoral governance for health' particularly where issues of equity and social and economic determinants are concerned. [6]

Thailand has achieved consensus and development of a Universal Health Care (UHC) policy approach of some duration in a decade that saw seven governments, six elections and a coup d'état as well as the usual procession of departing senior health bureaucrats. This stability and improvement of the UHC policy is largely attributed to stable leadership of the entity established to implement UHC and a purchasing approach by the National Health Security Office (NHSO) since its inception in 2001. [8] In Thailand the UHC co-payment was terminated, the reach of the coverage extended and the out-of-pocket expenses decreased from 33.1% in 2001 to 13.9% within the decade. Capitation was introduced for outpatient services, global budgets and casemix for inpatient services saw good technical implementation of this health policy and capped expenditure. A single purchaser of services with multiple sellers of services has seen cost savings and outsourcing of some public sector hospital services to the private hospital sector. [8]

Health policy in Thailand describes five levels of service delivery, notably commencing with self-care, followed by district and subdistrict services that are substantially PHC, community health, screening and preventative services. The government has invested substantially in the capacity at this level in the past decade. So much so that together with community hospitals, the next level up, these units are collectively described as a 'Contracted Unit of Primary Care (CUP)'. [9] The NHSO contracts them to deliver services at that level. These initiatives have seen a significant reduction of outpatient services used at regional and general hospitals and a similar substantial increase in utilisation of these services at the community, hospital, health centre (CUP) level; a clear example of effective use of PHC. [9] The efficiencies of this contracting/purchasing approach have provided sufficient fiscal space to further invest in additional and improved health services.

The health systems of different countries reflect differing political systems and cultural and social structures that influence how health policy is developed and implemented. This editorial is not suggesting that the example used should or could be easily translated into the Australian context. It does, however, reflect many of the key factors found in the global national health system reform literature that describe successful reform. Prior to seriously addressing the potential

of the proposed Federation White Paper it would be good to see a document that identifies a philosophy for the Australian health system, a description of the elements of a desirable system, identification of the issues and challenges confronting a movement to a more desirable system and at least some discussion of the applicability of key drivers from the global health system literature that might be applied in the Australian context. [10,11]

In achieving this objective and, desirably gaining some bipartisan agreement at that level, the current tinkering might be the starting point for the development of new approaches, providing less risk of 'reform without change and change without reform'. [4, p.693]

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Editor

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IN THIS ISSUE

The cover was selected to reflect the increasingly complex nature of healthcare and the greater emphasis on networking as a service delivery approach. This issue has a number of articles that reflect the concept of networks in the topics they address.

Way and Davidson present their perspective in an analysis of management practice that describes a model for clinical networking across a large health district in NSW Australia. The article describes the implementation of clinical networks and the increasing effectiveness of that approach and describes what they consider are the nine key success factors.

Anderson and Malone undertook a literature review as an approach to reviewing the success of multi-purpose centres in meeting their purposes some 15 years after the introduction of this concept in smaller rural and remote communities across Australia. These authors reviewed 38 relevant articles to identify common themes and issues raised about multi-purpose centres. They describe that these centres have been responsive to community needs, flexible in service delivery and demonstrate the ability to deliver a range of different services together.

Keenan and colleagues, in an analysis of management practice, describe the implementation of a leadership development strategy in a Melbourne, Victoria based service that focused on integrated leadership capability in inter-professional teams but with an emphasis on developing nurse leaders for the future. They indicate that their experience provides useful learnings for similar organisations.

Buchhorn and Shannon provide a research article that describes the experience of health professionals in their transition from service provider to service manager in the Tasmanian health context. Their findings further confirm some of the contested nature of the transition described elsewhere and the emphasis required in terms of personal and organisational support.

Boyd and Sheen in a review article examines the requirements of the National Safety and Quality Health Service Standards for an effective orientation and induction program. The requirements of the Standards in relation to orientation and induction were mapped from a literature review that identified potential content. The author suggests that there is a lack of a standardised framework within which the content might be arranged.

Kelly and colleagues present the results of their study that examines why medical trainees do not always escalate concerns to more senior staff when a patient shows signs of clinical deterioration. They identify the top barriers to escalation of the cohort of trainees that participated that might be of value to other organisations involved in the development of medical trainees.

Stiven and colleagues report on a research project that examined the potential to rationalise Laparoscopic Adjustable Gastric Banding to achieve 23 hour stay as routine for that surgery. This involved a retrospective audit, a time and motion analysis and the development and implementation of a fast track protocol.

Uddin and Hossain present a research article that utilises a social network-based research framework to explore and model coordination performance in health settings and demonstrated this approach within a patient–centric care network.

Clinical Networking for Regional, Rural and Remote Australia

P L Way and P M Davidson

Abstract

Objective: To describe the development and implementation of a model for Clinical Networking across a large Health District in New South Wales, Australia and to identify principles of implementation and operation that will lead to successful clinical engagement and sustainability.

Approach: This Clinical Network Program was developed and implemented based on network models in Australia and overseas. A series of formative evaluations were utilised to drive development and to ensure that the structure of the Clinical Networks program is appropriate to the organisation's and clinicians' needs.

Outcomes: The implementation of this Clinical Networks Program has been successful in terms of meeting its aims of health professionals working together to facilitate timely and appropriate response to issues, promote evidence-based health care, develop capable competent staff and support innovation and research. There was a high degree of acceptance of the Clinical Networks Program as an organisational construct by both clinicians and managers. There is significant evidence of a large number of quality clinical practice changes that have improved patient care and experience being successfully implemented by the Clinical Networks and Streams.

It is clear that over time, the Clinical Networks and Streams are becoming more effective. This is likely to continue with the guiding influence provided by the nine key success factors identified through evaluation.

Conclusions: A successful model of Clinical Networks and Streams has been developed within a district level Health Service that is successful and supported by both clinicians and management.

Key words: Clinical networking; community of practice; clinical engagement.

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Introduction

Developing and ensuring clinician engagement in strategic planning and the management of healthcare has been a priority for governments and health services for a number of years. Over the last decade, the development of Clinical Networks in healthcare has been one option for engaging clinicians, nationally and internationally. However the efficacy of this approach has been reported to be variable, with some networks being effective in achieving their aims while others have been largely ineffective and unsustainable. [1, 2, 3, 4, 5] The operation and scope of the Clinical Networks that were envisaged to be developed in this health service differed from those described internationally which covered smaller geographic areas, had operational

control of their services and were built on a structure that had integration of hospital and primary care providers. [2, 3, 4]

This paper describes the implementation of a Clinical Network Program in a large district health service and explores what can be learnt from the experience in terms of ensuring success and sustainability.

Background

This large district health service was formed in 2005 from the merger of three smaller health services. This health service is responsible for services across more than 120 sites, from small rural community health centres to major tertiary referral hospitals. With over 15,000 staff and an expenditure budget of $1.8 billion per annum, it provides services to a population of more than 840,000 across an area of 130,000 square kilometres.

Due to the size and range of services within the health service, the Health Executive identified the development of Clinical Networks as a key strategy to engage clinicians in decision making and planning for the health service.

The definition of Clinical Networks and Clinical Streams adopted by this health service was drawn from international definitions [6] and then adapted to the local context. Networks or streams are either population, disease or service based and are categorised as being a network or a stream based on size of target population and heterogeneity of services provided. Clinical Networks support more services with large target populations, are heterogeneous in type of services provided, and possess an outward focus in regard to integrating services across a continuum. In this context Clinical Networks are made up of two or more Clinical Streams, with Clinical Streams seen as aligned with relatively small target clinical populations, are more homogenous in service type and tend to be inwardly focused around a type of service or medical condition. For example a Cancer Clinical Network (disease based, heterogeneous, large target population) was formed which is made up of six clinical streams. Radiation Oncology (service based, homogeneous small target clinical population) is one of these six clinical streams.

The Network program has seen a total of seven Clinical Networks containing 26 Clinical Streams, plus five non-network aligned Clinical Streams, developed since 2005.

Approach

The goals of the Clinical Network Program were developed with reference to clinical networks in other countries including Canada and the United Kingdom. The Scottish Department of Health 1998 Acute Services Review defined clinical networks as 'linked groups of health professionals and organisations from primary, secondary, and tertiary care working in a co-ordinated manner, unconstrained by existing professional and organisational boundaries to ensure equitable provision of high quality effective services, [7] the principle being that communities of practice consisting of both clinicians and managers are flexible, adaptive and responsive to both health systems and patient's needs.

This definition was adapted as a starting point for discussion and allowed the development of the following goals for the Program:

- To shift the emphasis from buildings and organisations towards services and patients;
- To move from competition between sites to cooperation; and
- To focus on clinical issues and create a dynamic system, the design and function of which can change in response to a changing environment.

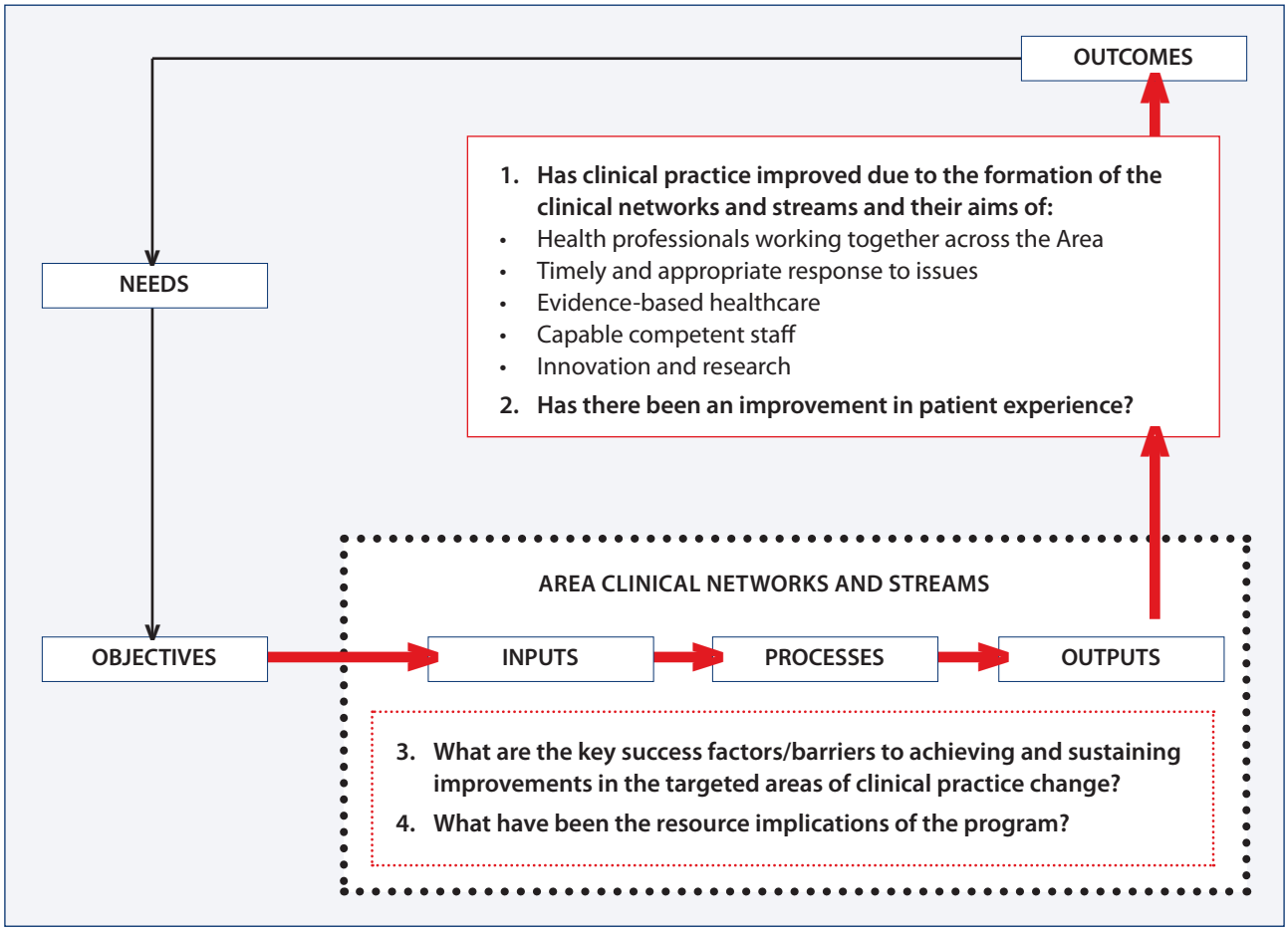
A steering committee was formed in 2005 to oversee the introduction of the Clinical Networks and Streams. Its key task was to develop a framework for the development and implementation of Clinical Networks and Streams. This framework included appropriate coordination, monitoring, and promotion of the program as well as the development of an evaluation plan that would be used to inform further development of the program.

The steering committee guided the development of the Clinical Networks based on core principles articulated by the Scottish Department of Health [7] that networks must have clear structures and accountability as well as include representation that is diverse in relation to geography, professional groupings and service level. Support for the development and operation of the Clinical Networks Program is supplied by a Network Coordinator as well as support units such as planning and performance, communications and workforce as required.

Network Structure and membership

The application of these core principles led to all Clinical Network/Streams forming leadership groups with a membership of approximately 16-20 individuals. The groups were mandated to comprise clinical representation that was multidisciplinary and geographically diverse. Each Clinical Network included an executive sponsor (member of the Executive Leadership Team), an operational service or facility manager and an Aboriginal health services representative.

Figure 1: Program logic model



Each Network had a formally appointed clinical leader and network coordinator/manager.

Evaluation as a guide for development

Evaluation of the program was seen as key to its ongoing success and development. Staged evaluation enabled review and revision of processes in a way that was timely and responsive to emergent issues. An evaluation framework, based on a program logic model (Figure 1) was developed in 2007. The logic model shows how the inputs (resources) that are available to deliver the program are ultimately converted into the intended outcomes. Formative evaluations using this framework were carried out in 2008 and 2009, leading to a comprehensive evaluation in 2010. Hence, the development of the Clinical Networks and Streams has been a flexible and considered process that has been driven by the findings from these evaluations.

Program outcomes

In line with other evaluations of Networks and Streams conducted internationally, it has been difficult to attribute direct service improvement or clinical outcomes benefits to the development of the Clinical Networks and Streams within the health service. The 2010 comprehensive evaluation however provided evidence that the program had contributed to a number of outcomes for the health service:

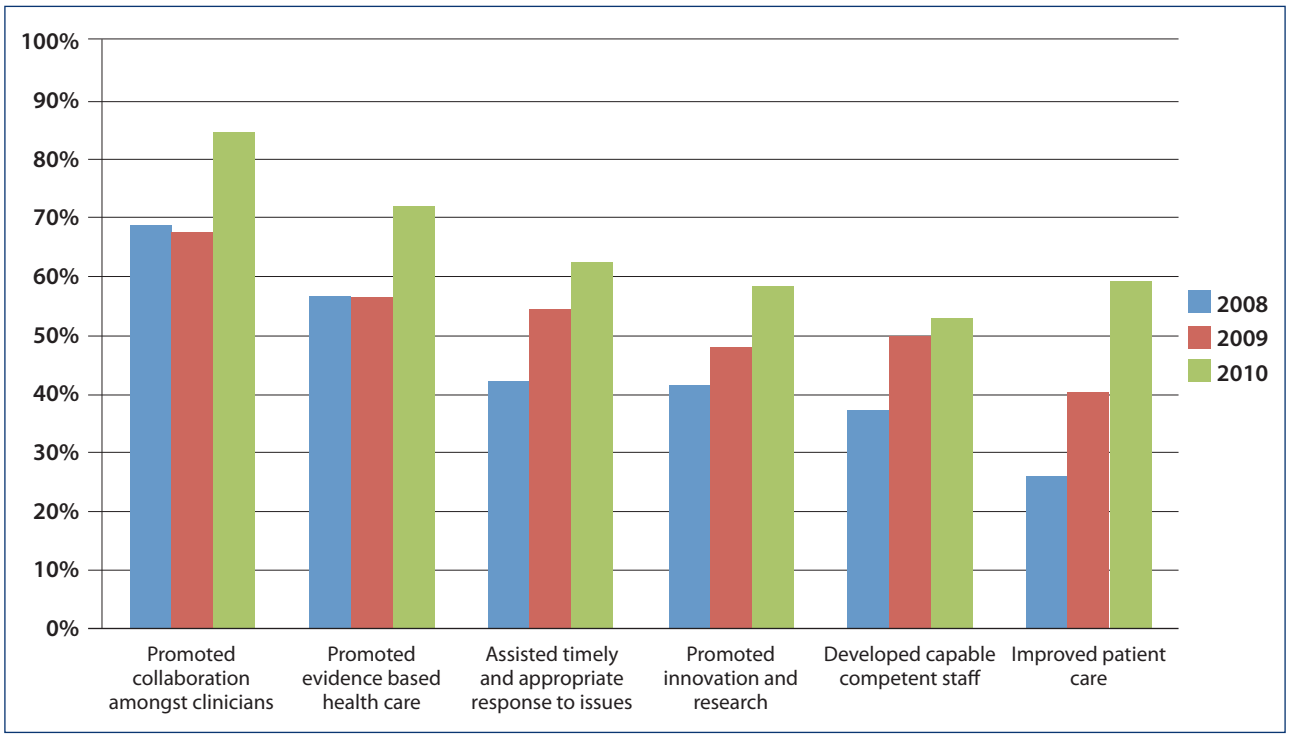
Health professionals working together

A major question when evaluating the program was to ask whether it had achieved its aims. A staff survey (2010 n=393, 2009 n= 531, 2008 n= 393) over three years provided evidence that improvement did occur in a number of domains that contribute to the health service (Figure 2).

These being:

- Health professionals working together
- Timely and appropriate response to issues
- Evidence-based healthcare
- Capable competent staff
- Innovation and research
- Improvement in patient experience.

Figure 2: Overall staff (from staff survey) rating of effectiveness of achieving the program aims



Patient care

There is evidence of numerous achievements that can be related to the Clinical Networks Program. These include the development of 210 evidence-based clinical guidelines, protocols and policies; an increase in the number of outreach clinical services from tertiary referral services to smaller sites across the health service increasing collaboration with more isolated practitioners; standardisation of equipment, forms, disposables and guidelines throughout regional, rural and remote facilities; development of standardised data collection systems; and standardised approaches to staff development that increased clinical education within the community of clinicians in a Clinical Network or Stream.

Patient experience

The program has been shown to enhance the patient experience by changing referral patterns so patients are treated closer to home with reductions in patient and family travel time especially for those with complex care. Timely transfers between sites increased as a result of better communication between clinicians. Clinicians worked together to identify and advocate for better resourcing in critical areas to increase access. Innovative patient-centred models of care delivery that take into account the distribution of clinical services across the large geographic region have increased.

Clinician support

Importantly the program was shown to be supported by clinicians as reflected in the response to a key question in the 2010 staff survey (n=393) – Would you recommend the health service Clinical Networks/Streams model to a colleague? Seventy nine percent of respondents indicated they would recommend the model to their colleagues with either no changes (29%) or only minor changes (50%). Just 7% said they would not recommend the model at all.

Success factors

An important outcome of the evaluations and program review has been the ability to define the core factors for the success of the Clinical Networks Program within the health service. Thirty four (34) interviews and four (4) focus groups with network leads, operational staff and executive members were conducted with participants asked 'What do you think were the critical success factors for achieving these network/stream aims?' Themes from these were tested in the staff survey and found to be consistent. Guthrie et al (2004) and Goodwin et al (2010) – two milestone studies on Clinical Networks – previously articulated core success factors based on the United Kingdom model. A comparison between these factors and those within the health service highlighted that there were more similarities in key success

factors than differences, which indicates that differing models of clinical networking may have core factors that govern their success.

The nine core success factors found for the health service included:

A suitable organisational environment

For the Clinical Networks and Streams to be effective, it was seen they needed an appropriate and fertile soil in which to grow. Several key elements in this were: a united health service; strong support by the Executive for the Clinical Network Program; and the presence within the one organisation of all levels of clinical services. Supporting this was the development and rollout of effective health service wide clinical information systems.

Flexibility to evolve and develop

The health service Executive Team decided that if the Networks and Streams were to function well, the clinicians in the teams had to have the flexibility and accountability to determine what they regarded to be the best model and approach.

> *It didn't have to follow a formula. It really just said, alright, we'll get a good clinical lead who we think has got the right vision. And we'll get a good person to support them. Let's just see where it goes…. because it was all about relationships. It wasn't so much about what boxes they had to tick. They just had to work together on something. I don't care. That's what I used to say to them. I don't care what it is. As long as it's something that you think will benefit patients and you can work on your relationships in the meantime…… I really do think that has made a difference. We haven't told them how they had to do it. We haven't told them what they had to do. We basically said we really want you to get together and work across the Area for the good of the patient. What do you think you're going to do? Be realistic. You can't do everything. (Health Executive)* [8]

Influential and credible clinical leadership and management

Clinical Network leadership is a common key success factor identified in Network evaluations. For the health service, it was seen as particularly important that both the Clinical Lead and the Coordinator/Manager were influential and credible.

Proactive engagement fostering visibility, accessibility and trust

The Clinical Network teams needed to visit other Health sites, listening, learning and developing relationships, as well as responding in a timely and appropriate way to their issues and concerns. This needed to be done proactively rather than waiting for clinicians to raise matters thus minimising communication delays and optimising a collaborative approach as early as possible.

Clinical and geographical inclusiveness

Without the inclusion of geographical and clinical representation, Nursing, Allied Health and Medical representatives, the Networks and Streams would be severely diminished in what they understood as health-wide issues and priorities, and what might be the most effective way of addressing them. This assisted the credibility of the Clinical Networks/Streams with other clinicians and managers.

Effective communication and collaboration with operational managers

As the majority of the Networks and Streams do not have operational control, it is challenging for many of the solutions to be adopted through into day to day clinical practice and care unless there is good communication and partnership between the Networks and operational managers.

Clarity of purpose with achievable goals

In the early stages, it was clear from a number of key stakeholders that there was lack of clarity about the role of Networks and Streams and that the strategic planning processes were much too complicated with unrealistic goals. Once these were simplified following the first evaluation, there was a much better embracing of the Clinical Networks Program by clinicians throughout the health service.

Adequate resourcing and support for Network and Stream coordination

The level of success that has been achieved would not have been possible without dedicated resourcing for Clinical Leadership, Network Coordinator/Managers and the creation of a Network Coordinator position. The funding has been essential for consultation, collaboration and integration.

Perceived clinical benefits

Clinicians would not be willing to be involved unless there were clear benefits for clinical care. This meant there needed to be some early clinical benefits that were communicated and shared with the Clinical Network or Stream. Seeing these benefits creates its own momentum and helps to keep the program moving forward.

> *In the heart of every clinician is somebody who actually wants to do the right thing so the patient is what actually matters. (Network Clinical Lead)* [8]

Discussion

The success factors that we have described include a suitable organisational environment, flexibility to evolve and develop, influential and credible clinical leadership and network management, proactive engagement that fosters visibility, accessibility and trust whilst being both clinically and geographically inclusive with effective communication and collaboration between clinicians and line-managers ensuring clarity of purpose with achievable goals that are perceived to be clinically beneficial. Clinical Networks and Streams should be adequately resourced. The results achieved in this health service indicate that the Clinical Network Program undertaken has been successful in terms of meeting its aims and becoming accepted amongst clinicians and managers as a successful basis for clinical improvement. Both staff and patients have benefited through improved collaboration and decision-making regarding clinical care. Furthermore, it can be argued that the large number and quality of process level achievements completed by the Clinical Networks and Streams, most of which are evidence-based, has led to flow-on benefit to clinical practice both staff and patients. The additional feature of clinical education has improved staff development particularly for rural and remote practitioners. Clinicians and Managers have expressed increasing confidence in the model to support clinical care across a large geographic region with widely dispersed populations and services. The formal structures, inclusiveness, executive and clinical leadership have transformed disconnected practicing clinicians into increasingly coherent clinical teams that work in partnership with managers to improve clinical outcomes.

It is clear that with time, the Networks and Streams are becoming more effective in the health service (see Figure 2) and this is likely to continue if the key success factors guide future decision-making.

The value and utility of these key success factors warrants further research in order to understand how they inform Network development across contexts and support sustainability over time.

Conclusions

The development and evaluation of the Clinical Network Program within this health service has demonstrated a sustainable model for Clinical Networks and Streams that is supported by both clinicians and management. The model developed could be utilised in other Health Districts across Australia.

The use of the identified nine key success factors for Clinical Networks and Streams will be further explored within this health service and will be subject to further research.

Competing interests

The authors declare that they have no competing interests.

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REVIEW ARTICLE

Suitability of the Multi-Purpose Service Model for Rural and Remote Communities of Australia

J Anderson and L Malone

Abstract

Context: **Multi-purpose services (MPS) as healthcare delivery models have been in existence in rural and remote areas of Australia for over 15 years. The services are designed to specifically address the needs of small rural and remote areas which are unable to sustain stand alone acute and aged care services due to small populations.**

Issues: **The objectives of the MPS model are to provide improved coordination and flexibility of health and aged care services which are responsive to community needs in a cost effective and efficient manner. This article provides an overview of the issues identified from the available literature that address the question of the MPS models' suitability to rural and remote communities. In order to achieve this, a literature review of 38 relevant articles was conducted. Common themes were extracted and major issues were identified. This article will then discuss significant aspects of the model in relation to its suitability and provide a critical opinion as to the successful implementation of this model.**

Conclusions: **The literature available demonstrates that the MPS model is responsive to community needs and much needed flexibility of services. One of the benefits of the MPS is the ability to tailor it to individual community needs. Although small rural health services will struggle to remain financially viable the MPS model allows sharing of staff among services and some ability to gain economies of scale through the amalgamation of acute and aged care services.**

Abbreviation: **Multi-purpose service (MPS).**

Key words: **Multi-purpose service; rural and remote; acute and aged care services; rural healthcare model; staffing model; flexible services.**

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Introduction

Multi-purpose services (MPS) as a healthcare delivery model have been in existence in rural and remote areas of Australia for over 15 years. What makes the MPS model of healthcare the right model for small rural and remote communities? In order to explore the ability of the MPS model to address the healthcare needs of rural and remote areas this article will critically discuss significant aspects of the model in relation to its suitability and to provide a critical opinion as to the successful implementation of this model. With this in mind, a search of the literature was conducted of published work in relation to MPS in Australia to extrapolate common themes and issues in relation to the appropriateness of the model.

Background

Reports found within the grey literature indicate that the health of people living in rural Australia is generally worse than that of their metropolitan counterparts. [1-3] It is acknowledged within the literature that poor rural health can be related to socio-economic disadvantage, Indigenous status, shortage of healthcare providers, poor personal health management, greater exposure to injury risks, lack of public transport, poor road quality and geographic isolation. [3-6] The MPS Program was developed over a decade ago to implement the MPS model as a joint initiative between the Commonwealth and State Governments of Australia to address these rural health problems. [7,8] Currently across Australia, there are 134 MPS in operation distributed throughout the states with more to be developed in the future. [9]

Despite an 'enormous demand' to develop MPS, [10] there is commentary within the literature that suggests that this type of health service is not suitable for all rural and remote communities, based on population size and geographical location. In an evaluation of five Victorian MPS, Sach and Associates [11] found that the following criteria supported some communities as being suitable for an MPS. These criteria included communities that had a population which was too small to sustain separate services [1000–4000 people); isolation from mainstream services; similar service boundaries for core existing services; a single set of services; existing service providers and a community that was supportive of the MPS concept. The first two of these conditions were also identified by the earlier national evaluation of the Pilot Multi-purpose Services Program (involving eleven sites) by Andrews et al. [12]

Method

A database search of EBSCOhost Health (including CINAHL, Academic Search Complete, Health Business Full Text Elite, Health Source, Psychology and Behavioural Sciences Collection and SocINDEX) was undertaken, followed by a search of the grey literature (limited to conference presentations, government documents and reports) which was identified in the reference lists of the relevant articles from the database search. The search terms: 'multi-purpose health service', 'MPS health' were used for the database searches with no limits on date of publication. Preliminary results of the search identified 240 potential articles. Duplicates of articles identified through the database search were removed and an initial screening was undertaken of titles and abstracts. Following this the full text articles which remained were assessed for eligibility. The inclusion criteria were that the article was related to MPS in Australia. The search yielded 38 relevant articles; these were then reviewed and grouped into the following common themes: flexibility of services, financial viability of MPS, coordination of health and aged care services and responsiveness to identified community needs.

Flexibility of services

The literature reported that the model of health service delivery in an MPS has a strong focus on meeting community needs. [10-12, 17-20] This focus acknowledges the unique nature of the communities involved, leading to a flexible range of services being combined in a unique mix for each community. The majority of MPS aim to function on one site as a 'one stop shop' for healthcare within that particular community. However, being on one site is not essential, with several MPS operating over multiple sites. [11,17] This in turn leads to challenges for the health service managers to run services in an efficient and effective manner in relation to staffing, economies of scale and resource management.

The flexibility which the model provides to meet individual community needs provides little guidance to managers or community members about what services an MPS should include. In progressing the development of an MPS, a steering group is usually formed comprising health representatives and community members. [17,20] Community members may not necessarily be experts in health or aged care, and staff members are frequently alienated by policies which do not acknowledge them as members of the community despite many having lived within these small rural communities for many years. [20] The difficulty in developing functional layouts of buildings is particularly prominent when existing buildings are adapted due to limited capital funding resulting in renovation of existing buildings rather than beginning a new development on a 'green field' site. For example when recently constructed buildings have been developed prior to the implementation of an MPS, communities are often unwilling to relocate these facilities to a greenfield site as this is seen to be a waste of financial resources. [20]

Within the literature, it was also noted that a community's perspective often focused on the acute care services which they felt were essential for their safety; however, community utilisation of those services did not reflect the high value which communities placed upon them. [19,21,22] The determination for the development and location of a MPS facility was often politically driven and prioritised rather

than objectively determined through available data and health information. [20] A mismatch between community perceived needs and the availability of government resources often led to conflict and community dissatisfaction with the end result being a service that was a compromise and not necessarily what the local population required. For example the structure and design of some multipurpose services in the early days of development did not necessarily match the requirements of the population and have not been sustainable or effective for workflows, security of staff and aged care friendly. [20,21]

Financial viability of MPS

In Australia healthcare services are provided by a complex combination of Commonwealth and State Government funding. This system has created a division of government responsibilities where the Commonwealth manages the welfare budget (including aged pensions, nursing home subsidies, Medicare) while the State is responsible for the public hospital system. [14,23,24] This arrangement inhibits movement of funds across program boundaries, creating service fragmentation and duplication. [1,25,26] The MPS model is designed to allow pooling of funds across program boundaries in order to streamline healthcare services in small rural communities.

In Australia, economic rationalism has led to activity-based funding for acute care services in the belief that it is a better way to manage health services in a financial framework. [21,24,27] Although the MPS model contains acute care services, low levels of patient activity make these sites inappropriate for this funding model leading to difficulties in rationalisation of funding allocation. [27] These policies have resulted in reduced choice of, and tenuous funding for, services for the rural population which frequently leads to public cynicism and distrust. [24,28] The viability of a small rural community often hinges on its health service as a major employer within that community. Possible loss of employment within health services could have a destabilising effect on entire communities. [29,30,31] Despite these policies, healthcare costs continue to rise [1,32] and as demonstrated in New South Wales, access to health services for people in rural and remote communities has not improved. [33]

The formation of a merger between existing services creates the expectation of a reduction in management and administrative costs. The MPS model attempts to address some of these issues by merging services which would otherwise be unsustainable. Managers may perceive these as advantages of economies of scale but employees may perceive them to be disadvantages as they can be associated with a loss of jobs. [34] The literature provides little advice to health service managers in this area, with no studies of cost effectiveness having been published.

Flexible funding in the form of pooling is not always problem free. In MPS the Commonwealth Government provides average funding levels for residential aged care regardless of the acuity or dependency needs of the clients. [35] Existing aged care facilities found average funding levels to be a disincentive to merge with the health service as the income they were capable of attracting for each client would be reduced. Some existing aged care facilities also feared that funds would be drained from aged care to meet acute care needs which were often perceived to require more immediate resolution than those of aged care needs. [5,11,12] Despite MPS featuring a range of services, some small rural hospitals merely converted their existing acute care beds which were occupied by nursing home type patients into residential aged care beds to meet these requirements of nomenclature and to assist in securing their financial viability for their future. [20]

Coordination of health and aged care services

The combination of health and aged care services, which include community developed services, under a single model as in an MPS, can lead to an improved coordination of these services. [36] This combination of unique services which have developed historically rather than being driven by need can then lead to discrepancies between services within the same health districts. This presents challenges for ongoing education, staff development and sharing of human resources across the service.

Staff members, particularly nurses, are required to be multi-skilled because their roles are broader as more services are provided in an MPS. [20,37-40] The literature describes health professionals employed in small rural health services as having a 'specialist generalist' role: they are required to be multi-skilled and competent in a wide range of skills. [20, 37-40] Multi-skilling can provide needed flexibility in the provision of healthcare services in small rural communities which are unable to sustain the employment of several specialists. [20,37-40] Other authors [41-43] agree that many rural health professionals feel social and professional isolation which is compounded by the perception of limited access to ongoing education and peer support.

Many MPS have minimal staffing of two nurses per shift. This creates angst amongst staff that they are leaving acute and

aged care clients unattended when called into the emergency department to deal with unexpected presentations requiring various levels of care. [38] In some instances these patients require intense medical intervention for long periods of time, whereas in others they are minor situations but still require assessment and intervention drawing nursing staff away from providing care to their acute and aged care clients. [20] This can also create security issues for patients and residents who may be left unattended and also for nursing staff who are required to care for any emergency presentation including patients with mental health issues.

In small rural and remote areas the difficultly in attracting and recruiting staff is well known. [44,45] The difficulties in attracting staff to work in rural MPS can be attributed to the need to be multi skilled and at times the requirement to work in isolation without onsite medical coverage which detracts from the ability to recruit staff. Another complicating factor is the ability to release staff to attend professional development activities when the priority is to maintain service delivery. [20]

Responsiveness to identified community needs

The Australian population is ageing [3,13] and most people prefer to age in their own home or at least within their own community. [14] This desire to age within one's own community is reflected in the requirement for a residential care service and also in the *Aged Care Act (1997)* which includes a requirement to facilitate access to aged care regardless of geographical location. [5,15,16] The Commonwealth, with its responsibility for aged care, determines bed allocations for hostels and nursing homes. In the past some of these allocations, particularly in rural areas, were in numbers now considered to be unviable. [5] These low bed allocations have placed additional pressure on many small rural communities which built hostels and nursing homes that they believed would be sustainable and capable of addressing the future needs of their respective communities. The MPS model which integrates aged care services with acute care services, through economies of scale enhances the viability of these pre-existing services and provides additional services which can be tailored to meet community needs. [20,37]

Conclusion

The interaction of the rural context, an innovative model of health service delivery and complex financial viability issues all impact upon the development of multi-purpose services in rural Australia. The health issues of rural Australia need to be addressed and the MPS model with its focus on integration of acute, aged care services and primary healthcare attempts to do so. The need for further research is indicated by the absence of current literature on this topic. In order to support the aims of MPS, further research would need to take into account rural community needs rather than being totally focused on cost benefit analysis. The authors therefore conclude that the multi-purpose service remains the most appropriate model for the delivery of healthcare services in many rural and remote communities; however the challenge for future planners is to provide the most appropriate model of care which balances community desires and the reality of funding limitations.

Competing interests

The authors declare that they have no competing interests.

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Integrated Leadership Capability: building a model for today and tomorrow

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Abstract

In 2010, the senior management team at Kingston Centre, a stand-alone 315 bed sub-acute, residential and aged persons mental health service located in the south-eastern suburbs of Melbourne, embarked on an ambitious leadership development strategy to meet both current and projected challenges facing their service. This case study provides a description of the development, implementation and early outcomes of a local interprofessional development program for frontline leaders.

A three stage collaborative interprofessional approach was used that included aspirational planning, gap analyses, local solution development, action learning sets and ongoing professional support.

Strong ward based interprofessional leadership and active and visible nursing leadership around the clock were essential to success. Ongoing leadership development for all staff groups is a key component of succession planning to ensure that the service is well-positioned to meet future challenges. The findings provide useful learnings for similar organisations.

Abbreviations: ANUM – Associate Nurse Unit Manager; CB – Code Blue; MET – Medical Emergency Team.

Key words: Allied health; capability; change management; high performing ward teams; Interdisciplinary; leadership; nursing.

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Background

The landscape of the healthcare industry in Victoria, Australia, and internationally is constantly changing. Busy daily clinical demands, complex organisations, technological innovations, new treatments, and new regulations provide a continuous source of change demand in health service delivery. Within this context, leaders in healthcare settings seek to pursue an overarching goal to improve value in health services for their patients and community. In particular, efficient patient flow in the sub-acute area is integral to ensuring timely and accessible care for patients across the entire organisation and is a key area of focus for ward leadership teams. [1] Effective unit level leadership is critical to improving outcomes for patients. [2-4] This case study describes the process used by leaders at one health service who set out to achieve this goal by developing the individuals and teams within their organisation to be agile, capable and responsive to change demands.

In 2010, the senior management team at Kingston Centre, a stand-alone 315 bed sub-acute, residential and aged persons mental health service located in the south-eastern suburbs of Melbourne, embarked on an ambitious leadership development strategy expected to meet both current and projected challenges facing their service. Catalysts for embarking on the leadership development strategy included: rapidly increasing demand due to changes in the acuity, complexity and volume of patients using the service; a major organisational restructure and redistribution of services; commissioning of major capital works that provided a significantly different patient and staff environment; and changes in services and key personnel.

The site senior management team agreed that establishing high performing frontline leadership teams was essential to meet future demand. They recognised strong and effective ward based teams and interdisciplinary leadership that synthesises and links multiple disciplines into a coherent team [5-6] as fundamental to developing high performing ward teams that: 1) are committed to achieving ward goals that align with organisational priorities; 2) have a clear focus on their common purpose and 3) have a high level of shared trust. [2] The team projected that to reach their goal at the Kingston Centre site, developing strong local leadership would be the critical difference between success and failure and good versus great outcomes. They also identified that multiple strategies which embody principles of care that required as a standardised approach were not always viable and was unlikely to deliver the desired results.

This case study provides a description of the development, implementation and outcomes of a local interprofessional leadership development program at a single sub-acute hospital site within a larger organisation. The focus of the professional development initiatives described in this case study were predominantly nurse leaders in recognition that nurse leaders provided the most constant presence in frontline clinical leadership; hence were critical for the success of collaborative interprofessional frontline leadership teams. [6] Discussion of the development of frontline leaders from other disciplines is beyond the scope of this paper although other disciplines also embraced the change in work processes. The findings are expected to provide useful learnings for similar organisations.

Aims

The goal of the program was to strengthen interprofessional ward based leadership to establish high performing frontline teams and deliver enhanced ward performance.

The specific aims of this initiative were to:

- Improve leadership practices by establishing effective and sustainable ward based interdisciplinary leadership teams;
- Improve interdisciplinary communication and collaboration;
- Build leadership capability at all levels of clinical management;
- Re-focus care to become more patient centred by providing 'round the clock' patient-centred nursing leadership;
- Improve quality and safety practices;
- Improve operational efficiency and effectiveness; and
- Raise the profile and advance the reputation of the Kingston Centre.

Method/approach

The three stage collaborative interprofessional approach used aspirational planning, gap analyses, local solution development, action learning sets and ongoing professional support.

Stage 1

An interdisciplinary leadership steering committee was formed to provide direction for strategies to enhance and deliver improved interdisciplinary ward leadership and collaboration. Strong organisational and frontline interdisciplinary leadership was one of four key objectives resulting from an interdisciplinary model of care review conducted at the site in 2011. With the assistance of the organisational development and learning team the committee agreed on core leadership capabilities that were used to identify the learning needs and skill development requirements of frontline clinical nurse leaders, and design the proposed solution. We used analyses from leadership skill surveys and one on one individual interviews with nurse managers at all levels to identify common gaps in skills and knowledge and priorities for development. The findings informed the design of a series of tailored leadership programs for nurse leaders.

Stage 2

A series of 'interdisciplinary learning centres' attended by all local nursing, medical and allied health leaders were used to build the core leadership capabilities identified during the review as well as identify any additional capability gaps to guide future development. All senior nurse managers and Nurse Unit Managers (NUMs) within the service completed a customised leadership development program. This was

followed by a series of one-day workshops designed to equip them with the skills and confidence to meet current and future service delivery challenges and consolidate their learning. They also participated in ongoing monthly professional development sessions.

Stage 3

A number of strategies were introduced to provide ongoing support for leadership teams. A practice improvement and innovation team was formed to support ongoing leadership development for NUMs via action learning sets and one-on-one coaching sessions. Leaders were allocated mentors for support. An interdisciplinary executive management team was formed to assist ward teams with the effective management of patient flow, with a particular focus on long stay patients. Finally, electronic documentation support in the form of Web QI TM was also introduced to improve medical discharge processes.

In 2012, the nursing leadership development program was extended to include Associate Nurse Unit Managers (ANUMs). We recognised that developing the capabilities of this group of frontline leaders was pivotal to ensuring the quality, effectiveness and efficiency of care delivery around the clock. A comprehensive program based on desired capability, knowledge and skill development was devised and delivered over a four month period.

Results and outcomes

Leadership development

Leadership group guidelines established for all sub-acute units in 2011 outlined the objectives, group function, leadership capabilities, key roles, responsibilities and accountabilities of frontline leadership teams; members included the NUM, medical consultant and allied health leads. The support and resources needed for implementation with each leader group was also identified.

In 2012 we conducted our first leadership development course for ANUMs. All participants demonstrated improvement in functional leadership capability from the perspective of both the participant and their NUM. A customised 89 item pre-post program assessment, developed from leadership skill surveys and gaps and priorities identified in stage 1 was used in evaluation. The greatest improvement was reflected in the item 'Establishes collaborative networks across teams for mutual benefit'. Similarly, substantial improvement was also identified for items measuring 'change leadership' capability; however, this remains the item with the greatest potential for further improvement. Training in using LEAN methodology was a feature of the leadership development course for ANUMs and participants worked together in small groups on quality improvement projects outlined below.

We also witnessed significant performance improvements among our Deputy Directors of Nursing and NUMs. All of our Deputy Directors and NUMs have engaged in a variety of ongoing leadership development activities that have resulted in significant clinical professional recognition. For example, nursing staff at Kingston Centre attracted research funding for the first time. They were funded to undertake an in-depth qualitative study to examine the patient experience in their service. The results of this research is being used to inform future patient-centred care initiatives at Kingston Centre. A manuscript outlining the study's findings has been submitted to the *Journal of Clinical Nursing* for publication. Funding was also received from the Victorian Clinical Stroke Network to develop an evidenced based pathway for stroke patients in the sub-acute setting which was an interdisciplinary project led by allied health. Recently, allied health and nursing staff also received Department of Health scholarships for post graduate studies.

Significant clinical improvements were also achieved as discussed below.

Service improvements

Initiatives to enhance service improvement were identified and implemented by the leadership teams as part of the development program, these included: a Medical Emergency Team (MET) response to clinical deterioration; improvements in processes to support frontline service delivery; and review of roles and responsibilities of key staff to improve patient centred care delivery.

A significant achievement was to develop and introduce a modified MET response specific to managing patient deterioration in the sub-acute setting in a timely and effective way. Senior nursing staff collaborated with senior medical staff to develop and introduce the modified MET in June 2011 as an addition to the pre-existing Code Blue system. Between June 2011 and 2012, in the first 12 months after introducing the modified MET response; 181 medical emergencies were attended at the site. This included 31 Code Blue calls (CBs) (11.6%) and 160 MET calls (88.4%); 9 of the MET calls progressed to CBs (Table 1). This represented a dramatic increase in emergency calls when compared to the previous year, where between June 2010 and June 2011 (before the introduction of MET calls) only 10 CB calls were attended (Table 1). These findings suggest the MET call system has contributed to improved patient outcomes such as early detection and prevention of clinical deterioration.

Table 1: Medical Emergencies by place of treatment and outcome, Kingston Centre, June 2011 to May 2012

TYPE OF CALL	TOTAL CALLS	MANAGED ON-SITE N (%)	TRANSFERRED N (%)	DIED ON-SITE	DIED AFTER TRANSFER	TOTAL DIED N (%)
METs	160 (88.4%)	98 (65%)	52 (35%)	8 (5%)	7 (5%)	15 (10%)
CBs	31* (11.6%)	11 (35%)	20 (65%)	7 (23%)	5 (16%)	12 (39%)

**9 of these were MET calls that progressed to Code Blue*

Service enhancements to improve the delivery of patient centred care included review of key clinical roles. For example, the title of the pre-existing 'key liaison person' role was changed to 'key contact person' reflecting changes in the role responsibilities to enhance and streamline communication by providing a consistent link between the patient, family and carers, and the healthcare team.

The leadership teams, with support from senior management, identified and led the implementation of a range of frontline improvement measures, these included: journey board patient handovers; clear guidelines for the chairing and conduct of case conferences; admission processes for early identification of issues likely to complicate care delivery or delay discharge; electronic medical discharge summaries; and clear escalation guidelines for emerging issues. A review of these initiatives in March 2013 found that handover and case conference communication was more focused, concise and efficient; there was consistent use of goals for care planning and timely updates of any changes; improvements in documentation and communication of discharge plans.

Nurses have improved their change of shift handover process to occur at the bedside and explicitly focus on improving clinical communication and encourage patient participation. This improvement is still in progress as it is taking some time to fully embed as both nurses and patients adjust to this concept.

A specific quality project that arose from the ANUM leadership development program was to develop a continence management framework as a standard for planning and implementing strategies to optimise care for patients with continence impairment. Continence management was identified as a concern during an earlier project to improve efficiency in linen usage, the participants themselves identified this issue as a way to improve not only resource utilisation but also the quality of care and the patient experience.

Service efficiency

LEAN methodology was one of the tools that senior nurses learned and used to improve productivity. For example, they improved the efficiency of linen and stock management across the service; this resulted in a $72,000 (11%) reduction in linen costs and a reduction of $123,000 (16%) in medical/surgical supply costs in 2012/2013 financial year when compared to the previous year.

Discussion and future directions

Building the leadership skills of nurses and establishing a collaborative interdisciplinary model of care [5-6] at the site has created opportunity for greater synergy between health professionals. This has resulted in improved cohesion within the team and a shared focus on patients' goals, rather than goals related to care delivered by individual professional groups. There has been no increase in length of stay for patients despite increases in patient acuity and complexity, and communication and collaboration among the health care team has also improved.

The clear improvement in service delivery and clinical practice, particularly in the management of the deteriorating patient has been attributed to the improved interprofessional collaboration to problem solve complex issues. We identified the recognition and response to clinical deterioration was a clinical priority in the setting of rapidly increasing patient acuity and demands on the service. Prior to this work, we were aware that many of our nursing and medical staff were ill-equipped to meet this challenge and required up-skilling to be able to respond to this change in work practice. Senior nursing and medical staff worked together to facilitate inter-professional, simulated team learning that led to the successful introduction of the MET response as demonstrated by the data presented earlier in this paper. This model is now successfully embedded.

Equipping NUMs and ANUMs with knowledge and skills in leadership has similarly led to quality improvement and effective management of change to enhance service delivery. Lean methodology has become a key tool in our

armoury of quality improvement approaches and is now being applied by ward based teams to create innovative solutions to locally identified issues. As the unit based leadership groups become more confident and capable in their roles they will continue to work with their teams to establish clear role expectations for each member of staff, explicit ward-based values and standards of care and measureable objectives to achieve key quality and safety, patient flow, patient and staff experience and financial accountability goals.

Kingston Centre has gained a reputation both within the organisation and externally as a progressive and innovative workplace committed to excellence in patient centred care and staff development. Historically, frontline nursing management roles within the service attracted little interest and the quality of applicants was poor. In the last two years, vacancies have reduced and both the quality and quantity of applications has increased substantially.

Strong-ward based nursing leadership and ensuring that nursing leadership was active and visible around the clock was essential to this success. Ongoing leadership development among all staff groups is a key component of succession planning to ensure that the service is well-positioned to meet future challenges. The ANUM leadership development program is continuing into 2013 with a further three intakes planned for the year ahead. The program has also been recognised at an organisational level and will be used to inform the establishment of a nurse manager leadership development framework across the larger organisation of Monash Health.

Competing interests

The authors declare that they have no competing interests.

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RESEARCH ARTICLE

From Service Provider to Service Manager: exploring the transition experience

H Buchhorn and E A Shannon

Abstract

Objective: This study provides insight into the subjective experience of transitioning from service provider to service manager.

Design: Responses from ten groups of Tasmanian health and human services staff (n=298) were analysed to determine the dominant themes emerging from the transition experience.

Setting: Data were collected from participants in the Tasmanian Department of Health and Human Services Management and Leadership Development Course.

Main outcome measures: These front line and aspiring managers considered the strengths, weaknesses, opportunities and threats associated with the transition.

Results: Results indicate that service providers believed the strengths they brought to a management role were associated with system knowledge (clinical and organisational). A perceived low level of pre-existing management skills and experience was seen as their major weakness. The move into service management was thought to provide opportunities to affect system change and benefits associated with career advancement. Anticipated negative responses from colleagues were identified as threatening this role transition as previous relationships were disrupted. The importance of 'management mentors' was emphasised.

Conclusions: Service providers potentially bring significant background knowledge and capability to a management role. A successful transition from service provider to service manager requires both personal and organisational support. Development programs that include shadowing, coaching, mentoring or similar observational and interactive learning activities may provide a stronger level of support than those that focus solely on technical issues of resource and financial management.

Abbreviations: DHHS – Department of Health and Human Services; GT – Grounded theory; SWOT – Strenghts, weaknesses, opportunities, threats.

Key words: Management development; health and human services; role transition

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Introduction

Almost one-third of all health service managers in Australia have a health professional background. [1] The challenges faced during the transition from 'service provider' to 'service manager' have been acknowledged in a range of texts [2-5] and in an increasing number of published, empirical studies that have documented and reflected upon the transition experiences of Australian health professionals. [6-7] There is considerable discussion over the kinds of skills and competencies that are required to carry out the health service manager role. [8-10] At the same time, there is wide-spread agreement about the need for education and training in the area, whether this is work-based or involves a course of academic study. [2,4,7-8,10-11]

In Tasmania, the Department of Health and Human Services (DHHS) has initiated a series of programs that involves both academic and in-house activities to support this transition. [12-14] The in-house Management and Leadership Development Program ('the Program') involves a multi-day workshop followed by a series of workplace activities (shadowing, coaching, action learning and a workplace project). It takes a deliberately 'distributed' approach to leadership, with a focus on developing social capital as well as human capital, in contrast to many 'in house' development courses carried out in Australia and overseas. [15]

Participants in the Program broadly reflect the gender and professional profile of the DHHS and its three associated Tasmanian Health Organisations (local hospital networks). Three-quarters of all participants are female. Over one-third of participants are employed under the Nursing and Midwifery Industrial Award, while another third are employed under the Administration and Clerical Award. Approximately five percent of participants are employed by Ambulance Tasmania. There is an over-representation of allied health professionals in the Program (who make up 21 percent of participants but only 12 percent of employees), and an under-representation of medical professionals (one percent of participants as opposed to three percent of total staffing). [14]

It is in this context that Program participants – front line and aspiring managers – conduct the exercise 'Service Provider to Service Manager'. Here participants reflect on their own experience, to complete a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of the transition.

Methods

During the one-hour session, table-groups of participants discuss and record their ideas and reflections. The purpose of the exercise is to enable cooperative learning and the generation of strategies to support current and aspiring managers, within DHHS. With the permission of the Human Research Ethics Committee (Tasmania) Network, the written record of these small group conversations has been collected for analysis.

This study examined the responses generated by 298 DHHS staff, in ten separate Courses, held between October 2011 and June 2013. A grounded theory (GT) approach [16] was used whereby categories were developed from the common themes identified within the data. As the data were collated and coded according to Page 2 of 30 these themes, these were reviewed, clarified, refined and recoded, to develop the final categories used in the analysis. The higher-level categories that emerged from this process related to the individual, their relations with others, and their position within the broader organisation or system. These categories were used, along with the SWOT, in the resulting framework of analysis. The use of a GT approach allowed the analysis to be guided by participants' own responses rather than predefined categories, thus generating insights that may not have become evident if pre-existing conceptions of the transition from 'service provider' to 'service manager' had been applied. This methodology also guides the presentation of results, first focusing on the categories of results that emerged within the SWOT structure, then providing an analysis that links these findings to previous research.

Results

The SWOT exercise generated the greatest number of responses in the threats category (n=218), followed by opportunities (n=217), weaknesses (n=169) and strengths (n=164). Cross-cutting categories that emerged from the GT analysis resulted in 269 responses associated with participants' relationships with others in the work setting. There were 245 responses associated with the impact of the transition on themselves as individuals and 240 responses associated with the impact on the organisation.

Four points emerged from the analysis. The largest single category of response described the strength that service providers bring with them into their new role as managers: their intimate knowledge of 'the system', from the 'bottom-up' (n=76). The next largest category of response was the identification of personal and career advancement opportunities resulting from the transition (n=67). The threats arising from others' negative responses to the change of role (n=65) emerged as the third major point. The chance to influence system change (n=62) was the fourth point and the second most common opportunity identified. Perceived weaknesses included operational and strategic management skills and the difficulties associated with changing workplace relationships. Table 1 summarises these results.

Table 1. Service provider to service manager SWOT responses categorised

CATEGORIES	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Individual impacts	Personal experience, strengths, clinical knowledge (n=24) Vision (n=19)	Lack of operational management skills, experience, confidence (n=45)	Professional, career advancement (n=67) Personal material benefits, status (n=25) Broadening perspectives (n=22)	Lack of role clarity, resources increases risk of failure (n=31) Losing own clinical knowledge (n=12)
Relations with others	Know and understand team (n=44)	Established workplace relationships (n=47) Lack of managerial support networks (n=27)	Using existing relationships to achieve results (n=41)	Negative responses from others (n=65) Managing the changing expectations of others (n=45)
Contextual (systemic, organisational) understanding and impact	Knowledge of organisation, networks, clinical issues (n=76)	Lack strategic management skills (n=44)	Influence change (n=62)	Lack of support systems (n=41) Organisation losing clinical expertise (n=17)
Other (poor recruitment decisions)	n=1 (management already implicit in statement of duties)	n=6 (person unable to do job)	n=0	n=7 (wrong person for job)

Discussion

Principal findings

Despite a perceived lack of managerial skills and experience, participants felt strongly that their knowledge of the organisation, service and staff networks and – in the case of healthcare providers – clinical issues, represented a significant strength. They believed that their provider background gave them the insight and 'insider' credibility to lead the improvements the system required. Some examples of the 'system knowledge' strengths listed by participants in this exercise are given in Table 2.

Table 2. Service provider 'system' knowledge

- clinical knowledge
- contextual knowledge and experience
- core business and challenges
- corporate knowledge (familiarity and system)
- current barriers, challenges, potential changes
- existing networks
- 'how it works'
- organisational supports
- system, from the 'bottom-up'
- team dynamics, environment, politics ('culture')
- the 'bigger picture'
- the business 'from the inside'
- the clinical setting
- the needs of clients/service user/stakeholders
- the 'trouble makers'

Table 3: Perceived threats resulting from changed relationships

- competitiveness and undermining from ex-buds and rest of team
- de-valued if seen as bureaucrat
- 'driftwood' ('meat in the sandwich' – where do you sit, the 'us' and 'them' issue)
- jealousy, gossip and isolation (envy etc)
- horizontal violence and intimidation
- lack of friends – in 'no man's land'/isolation
- perceived persecution (going to 'the dark side')
- professional rivalries (jealousy)
- rebellion
- resentment/negative attitudes
- resistance from peers (old history)
- sabotage (from below and above)
- socially isolated – misinterpreted
- tall poppy syndrome
- unwillingness to involve you from top level management – also a threat to your unit

The flip side of the strengths arising from 'insider' credibility and knowledge was the anticipated results of disrupting the status quo. One of the most frequent 'threats' identified in the transition was the expected negative response from others, as a result from the role-shift from service provider to service manager. Participants perceived the renegotiation of relationships during the transition process as highly problematic. While participants could see the potential for leveraging existing relationships to achieve results, they expected negative responses from others and anticipated difficulties in managing others' expectations.

An 'us and them' culture amongst staff was identified. This divide between service providers and higher-level management represented a threat to middle managers who were placed in the difficult position of deciding which 'side' to join. New service managers were seen as having gone 'to the dark side' by taking up a management position. It was thought that former colleagues would be less supportive of their decisions and actions, resulting in isolation and adding to an already stressful transition.

Participants noted the challenge of having conflicting loyalties and feeling stuck between their old peers and higher-level management, particularly when having to make difficult operational decisions that would impact on their old team. Losing friendships was a key concern for many participants and finding the (often blurry) line between 'friend' and 'boss' was difficult for many service managers with service provider backgrounds. Table 3 provides some verbatim examples.

However, participants believed strongly that their pre-existing relationships with staff and knowledge of the system could also contribute to an identified opportunity. The opportunity to influence change, at the organisational/systemic level, emerged as a strong theme in the analysis. Participants believed they could draw upon their knowledge of the organisation and the team to maximise outcomes; to build unity within the team; and to 'bridge the gap' between management and service providers; and to effect positive change. Some verbatim responses are listed in Table 4.

Table 4: Opportunities to influence system-wide change

- actively involved in change and improvements
- can make real changes
- change specific 'floor issues'
- change the way things are done
- create positive change
- dynamite always goes under the bridge (change what needs to be changed)
- facilitate realistic change due to knowledge of environment
- instigate change
- make change – some that have positive impact on service providers
- more influence and input to change
- promote change/advocate improvement
- strategic focus on influencing change
- to be a positive change agent
- to change culture
- to introduce/implement change

Table 5: Examples of individual development opportunities

• career advancement/development/change	• opportunity to develop more leadership/management skills
• develop leadership	• personal/ professional development
• develop political awareness	• self-development/career progression
• develop work-life balance	• self-development/growth
• developing networks	• to develop in the role
• developing personal skills set	• to develop skills
• develop relationships in other areas and link	• to learn, self-development
• insight development	

Participants also saw this as an opportunity for personal growth through challenging themselves with the role. The opportunity to develop a sense of the 'bigger picture' and to be involved in higher level strategic planning meant participants could develop personal networks and connections at a higher level, as well as to be supported and mentored by new people.

Personal opportunities were also identified in terms of professional career advancement and skills development. Participants saw an opportunity to increase their income, gain recognition for their skills and potential, and to improve their work-life balance through more regular working hours. The service manager role was also seen as a step that would open up further career options in the future. Examples of the opportunities identified by participants are provided in Table 5.

The weaknesses identified by participants were distributed across three main areas – operational management skills, strategic management skills and established workplace relationships. A smaller range of responses identified a lack of managerial support networks.

When discussing these weaknesses, participants noted that the transition from service provider to service manager was often poorly planned. Without time to prepare or undertake training, some new service managers were 'thrown' into the role before they were ready or willing to take it. Inadequate succession planning meant that when a service manager role suddenly became vacant, recruitment was 'reactive' rather than proactive. A lack of support networks for those undertaking the transition to service manager was perceived as resulting in stress, burnout and feelings of isolation. Feelings of fear and a lack of self-confidence in the ability to succeed in the new role were also identified. For the individual, the loss of clinical skills was seen as a weakness in both the role of manager (as it reduces knowledge of frontline issues) and at a provider level (as valuable skills may be lost). This was particularly important for those in management positions for short periods of time. The sense of loss that some new managers felt at losing their previous identity and skills as a service provider was not made any easier by the 'unsupported' nature of the new role. Of particular concern was a perceived lack of financial management skills, people management skills, communication and negotiation skills.

It was also clear that participants believed not all service providers were capable or suitable for a management position, in spite of the inclusion of this expectation in many statements of duties. Participants felt that there was often a flawed assumption that a good service provider 'naturally' made a good service manager.

Strengths, weaknesses and implications of this study

While limited to one organisation, in one state in Australia, this study adds to the relevant body of knowledge by presenting the experience and perceptions of those experiencing the transition from service provider to service manager. In doing this, it provides the necessary 'grounded account' of 'experience and sense-making' required for understanding the relationships and requirements for development. [17]

The study provides some surprising results, in light of participants' perceptions of the relative position and value of leadership in health service management. The need for a specific skill called 'leadership' was not mentioned in responses collected during the ten iterations of this exercise. The focus was on the skill requirements of management positions, including topics such as financial management and human resource management and on the emotional, collegial support required.

This is counter-intuitive and contrasts against the strong focus on distributed leadership ('from the ward to the board') in contemporary health services literature. [18] Dwyer and

Cahill concisely sum up the widely-held belief that 'at least in healthcare, you cannot be a good manager without being a leader as well'. [4, p.30] However, the absence of leadership as an item in the SWOT analysis does not necessarily mean that participants see leadership as unimportant. Other explanations, relating to participants' conceptualisation of leadership and how they see their own leadership, need to be further explored. This supports Fulop and Day in their call for contextualised, local research in this area. [17]

Similarly, the literature notes that, when selecting candidates, it is often assumed that because a service provider demonstrates expertise and strengths in their clinical role, they will be a good service manager. [3,7] A number of authors argue that knowledge of the on-the-ground operations of the organisation is essential for a service manager to be able to successfully manage the organisation. [5,19] Participants in this study agreed that knowledge of the organisation, networks and clinical issues were a strength in the transition from service provider to service manager. However, participants in this study believed their experience and knowledge did not fully prepare them for the transition. Their engagement with the DHHS Program for current and aspiring managers was one path towards this knowledge.

It is one of the insights of this study that, amongst this group of service providers at least, leadership is unnamed and implicit, while 'insider' status is considered to be both a strength and a weakness. While the challenge of conflicting loyalties resulting from the transition has also been identified in the literature, [2-4] as has the divide and tension between service providers and service managers, [3,8] the results from this study puts more emphasis on this element and suggests the need for relational, management mentoring.

Having a deeper understanding of what the transition to the service manager requires, future managers are better able to mentally and emotionally prepare. This is congruent with participant feedback in relation to the workplace shadowing, coaching and action-learning activities associated with the DHHS Program. [14,20] Other studies also confirm the value of these kind of relational supports to help overcome the 'uncertainty associated with moving beyond the familiar' [21] and to have a positive impact on job performance, attitude toward the organisation and stress-reduction. [22] Management mentoring (through shadowing, coaching and action learning) is a relatively simple, low cost, methodology, easily replicable by both provider and training organisations.

Participants' comments on the desirability of self-development and personal growth opportunities indicate that these kinds of flexible and incremental interventions may be welcomed by potential future managers. Closer engagement with those who have already made the transition from service provider to service manager brings the opportunity for addressing fears associated with the loss of existing (clinical) skill sets and the necessity for new (managerial) skills, as mentors demonstrate their own approach to these challenges. As the greatest number of participant responses were received in the 'threats' section of the SWOT, and the 'relations with others' category, the data suggest this kind of assurance may be welcomed.

Conclusions

This study sheds light on the subjective experience of health and human service providers transitioning to service managers in the Tasmanian public sector. In spite of being based on the reflections of participants in a management and leadership development program, leadership was not identified as a core skill for this transition. Strengths associated with system knowledge and a motivation to achieve positive change in the workplace were tempered with an awareness of the need for new, managerial skills, and a concern about collegial response. A need for both technical and inter-personal support emerged from the analysis, suggesting a role for 'management mentors' in the preparation for this transition.

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Competing Interests

The authors declare that they have no competing interests.

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REVIEW ARTICLE

The National Safety and Quality Health Service Standards Requirements for Orientation and Induction within Australian Healthcare: a review of the literature

L Boyd and J Sheen

Abstract

Introduction: A workplace orientation program is a core requirement of the National Safety and Quality Health Service (NSQHS) Standards in Australia. This is particularly important within healthcare as patient safety and the patient experience are at risk if the healthcare workforce is not supported with an effective orientation and induction program.

Aim: This study aimed to review the literature and map the requirements of the NSQHS Standards in relation to orientation and induction.

Method: This study utilised online databases to search for literature pertaining to orientation and induction within healthcare. Inclusion criteria included relevance to research questions, and originating in a country with a comparative health system to Australia.

Results: The search identified a total of 202 articles of potential relevance with 42 articles meeting the inclusion criteria. Articles were ranked according to hierarchy of evidence criteria for both qualitative and quantitative studies. The importance of using orientation to detail safety and quality roles, the organisations' risk management system, governance structure, operational processes and procedures was highlighted. Patient-centred care, antimicrobial stewardship, clinical handover and mechanisms for escalation of care and emergency assistance should also be covered within the orientation process.

Conclusion: There is a dearth of studies in relation to orientation and induction in the healthcare literature. Orientation content is now clearly prescribed, what is lacking within healthcare is a standardised framework. Concept mapping, educational theory and adult learning methods have been shown to enhance workforce problem solving and engagement with orientation, however further research is needed to enhance practice.

Abbreviations: ACSQHC: Australian Commission on Safety and Quality in Health Care; NSQHS: National Safety and Quality Health Service.

Key words: National Safety Quality standards; orientation; induction.

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Introduction

A workplace orientation program is a core requirement of the National Safety and Quality Health Service (NSQHS) Standards in Australia. Orientation and induction play a significant role in helping new employees understand the organisation and learn about vision, values and workplace culture. They are particularly important within healthcare as patient safety and the patient experience are at risk if the healthcare workforce is not supported with an effective orientation and induction program.

The terms 'induction' and 'orientation' are often used synonymously, however they refer to complementary but distinctly different stages of the workplace transition process.

Defining orientation

Orientation is an introductory stage in the process of new employee assimilation, and a part of the individual's socialisation process within an organisation. Major objectives of orientation are to gain employee commitment, reduction of anxiety, assist in understanding the organisation's expectations, and convey what can be expected from the job and the organisation. [1] Boyle et al, define orientation as the familiarisation of a new staff member to the layout and functioning of a workplace. [2]

According to the Australian Commission on Safety and Quality in Healthcare (ACSQHC), orientation is a formal process of informing and training workforce upon entry into a position or organisation, which covers the policies, processes and procedures applicable to the organisation. [3]

Defining induction

The literature portrays varying descriptions and fluctuating degrees of induction.

Kearney suggests that induction is the primary phase in a multi-faceted continuum of structured beginning professional development. Induction is not a one-off event or orientation. [4] Rather, induction is a comprehensive process supported by all levels of the organisation with a focus on the local workplace.

There is no definition or reference to induction in the NSQHS Standards. [3]

Aim

All hospitals and day procedure services across Australia need to be accredited to the NSQHS Standards following their introduction in January 2013. [3] The NSQHS Standards differ from past accreditation criteria and this has resulted in the need to review all elements of the core and developmental criteria of Standards 1-10 to ensure organisational alignment.

This study aimed to review the literature and map the requirements of the NSQHS Standards in relation to orientation and induction to assist Human Resource Managers and Educators to identify and address the criteria.

Research questions

The review also considered the following research questions:

- What are the functions of orientation and induction within healthcare?
- What are the NSQHS Standards requirements in regards to orientation and induction?
- What gaps exist in the literature base for orientation and induction?

Search strategy

This review sought to identify all relevant studies involving the orientation and induction process that are applicable within healthcare. The search terms, inclusion and exclusion criteria and outcomes are shown in Table 1.

The initial search utilised the databases Ovid Medline, CINAHL, Pyschinfo, Web of Science, ERIC and Australian Education Index. Boolean operators such as `AND' and `OR' were used to enhance inclusivity. The search timeframe was initially limited from December 2007-December 2013. For rapidly developing areas, a search timeframe of five years was deemed appropriate, however results were limited so the timeframe was increased to 10 years. [5,6]

Websites, such as the Australian Department of Health and Aging and The Australian Commission on Safety and Quality in Health Care (ACSQHC) were hand searched for material relating to orientation and induction.

Findings

The search identified a total of 202 articles of potential relevance. The results were reviewed through a title and abstract search. One hundred and sixty seven studies failed to meet the inclusion criteria. This left 35 articles. Reference lists from these articles were reviewed to identify additional literature, with an author search locating another four relevant documents.

A grey literature search was then conducted using the Google Search Engine, and previously utilised keywords. This resulted in a further three articles. The final total of 42 articles informed this review.

Discussion

The literature reviewed was used to answer the research questions highlighted at the beginning of this paper.

Functions of orientation

Research has shown that there are many benefits to establishing an effective organisational orientation process. [7-9] It helps employees settle into their new role faster and become productive sooner. [8] Informed employees feel a sense of belonging to the organisation and are able to operate at their full potential earlier. [9] In contrast, Allee found that orientation did not influence individuals' levels of commitment, performance or satisfaction. [10]

Table 1: Search strategy

KEYWORDS	Inservice training (MESH) OR Employee orientation or Student orientation or 'employee orientation program' and Hospital education OR personnel, hospital ***education OR personnel management*** methods Employee induction or Student induction or 'employee induction program' Workplace orientation or induction Worker OR employee OR student and Inservice training (MESH) OR Employee orientation or Student orientation or 'employee orientation program'
ADDITIONAL INFO/SOURCES	Excluded articles... NOT patient education NOT staff development NOT curriculum NOT continuing education NOT professional development NOT health promotion
	Inclusion criteria... Evidence-based Relevance to research questions Originating in a country with a comparative health system to Australia Originating in a country with social or cultural similarities to Australia
FILTERS	Five years initially then increased to 10 years English

Within healthcare, a comprehensive orientation will ultimately enhance patient safety and the patient and family experience. [3] Although the value and need of a well-designed orientation process is explicated in the literature, the best model to use to achieve optimal outcomes is not overt. [11]

Functions of induction

A structured induction process leads to improved staff morale, engagement and greater commitment to the organisation. [7] Productivity is enhanced and proficiency improves when employees engage in a comprehensive induction. [1] Engaged employees will stay longer, leading to lower staff turnover and reduced recruitment and training costs. [9,12]

The value of a well planned orientation and induction in supporting novice clinicians is well documented, [13-15] however, there is little agreement regarding the appropriate length, content and process for orientation and induction. [16] This is supported by a review of public access hospital websites across Australia where stated processes vary from one day to six weeks.

The NSQHS Standards requirements in regards to orientation and induction

An effective organisational orientation process is a requirement of the NSQHS Standards. Orientation is directly addressed as core criteria in Standards 1 and 2 (Please refer to Table 2). Orientation is also mentioned as possible evidence in a number of related NSQHS standards as detailed in Table 3.

Table 2: Mapping of the NSQHS Standards criterion and actions relating to orientation. [3]

NSQHS STANDARD	THIS CRITERION WILL BE ACHIEVED BY:	ACTIONS	EXAMPLES OF EVIDENCE
Standard 1 Governance and quality improvement systems	1.4 Implementing training in the assigned safety and quality roles and responsibilities	1.4.1 Orientation and ongoing training programs provide the workforce with the skill and information needed to fulfil their safety and quality roles and responsibilities	Evidence of the assessment of training needs through review of incidents, performance data, workforce feedback, workforce reviews, system audits and policy Education resources and records of attendance at training by the workforce on safety and quality roles and responsibilities Review and evaluation reports of education and training Feedback from the workforce regarding their training needs Relevant guidelines, legislation and standards that are accessible to the workforce
Standard 1 Governance and quality improvement systems	1.4 Implementing training in the assigned safety and quality roles and responsibilities	1.4.3 Locum and agency workforce have the necessary information, training and orientation to the workplace to fulfil their safety and quality roles and responsibilities	Policies, procedures and protocols that are accessible to locum and agency workforce Orientation and education resources for locum and agency workforce Skills appraisals and record of competencies for locum and agency workforce Communication to locum and agency workforce related to their safety and quality roles and responsibilities
Standard 2 Partnering with consumers	2.3 Facilitating access to relevant orientation and training for consumers and/or carers partnering with the organisation	2.3.1 Health service organisations provide orientation and ongoing training for consumers and/or carers to enable them to fulfil their partnership role	Policies or processes in place that describe the orientation and ongoing training provided to consumers and carers who are in partnerships with your organisation Orientation and training is provided to consumers partnering with your organisation and your organisation documents training attendance, training calendars and training materials Orientation and training is provided to consumers partnering with the organisation via an external training provider. Your organisation documents training attendance, training calendars and training materials Consumer evaluation reports of orientation and training sessions

Table 3: Orientation as evidence for other NSQHS Standards. [17]

	NSQHS STANDARD ACTIONS	EVIDENCE
	2.6.1: Clinical leaders, senior managers and the workforce access training on patient centred care and the engagement of individuals in their care	Training curricula, resources or materials that include sections on consumer centred care, implementation of a personally controlled electronic health record, partnerships and consumer perspectives are utilised for orientation and ongoing training
	3.14.4: Action is taken to improve the effectiveness of antimicrobial stewardship	Orientation and education program attendance records demonstrate prescribers and clinical workforce are informed and educated about antimicrobial resistance, local stewardship activities, and their roles and responsibilities
	6.1.1: Clinical handover policies, procedures and /or protocols are used by the workforce and regularly monitored 6.2.1: The workforce has access to documented structured processes for clinical handover that include: • preparing for handover, including setting the location and time whilst maintaining continuity of patient care • organising relevant workforce members to participate • being aware of the clinical context and patient needs • participating in effective handover resulting in transfer of responsibility and accountability for care	Education resources and records of attendance at training, orientation, in service by the workforce on the organisation's protocols for clinical handover
	9.4.1: Mechanisms are in place to escalate care and call for emergency assistance	Orientation and ongoing education resources and records of attendance at training by the workforce

The ACSQHC (2012) highlights the importance of using orientation to detail safety and quality roles, the organisations' risk management system, governance structure, operational processes and procedures. [3]

Patient-centred care, antimicrobial stewardship, clinical handover and mechanisms for escalation of care and emergency assistance should also be covered within the orientation process as suggested in the evidence requirements within the ACSQHC Hospital Accreditation Workbook. [17]

The ACSQHC Standard 1 and 2 Improvement Guides also suggest that organisations review their orientation, education and training policies to ensure:

- There is a demonstrable link with its safety and quality systems;
- Workforce mandatory orientation, education and training requirements are clearly defined and that a substantial element addresses clinical safety, quality, leadership and risk;
- There are clear policies or procedures in place that describe the required orientation and training needs of consumers who are partnering with the organisation;
- There is access to suitable orientation for consumers and/or carers who partner with the organisation;
- Attendance at orientation for all parties is tracked and reported. [18,19]

Gaps in the literature base for orientation and induction

The major gap in the literature reviewed related to the lack of a framework to standardise healthcare orientation and induction. Of the papers reviewed only two suggest an underpinning framework.

Concept mapping was proposed by Wilgis and McConnell as an effective model for developing critical thinking and clinical decision-making skills during orientation. [20] The authors used a descriptive comparison study to determine whether concept mapping improved critical thinking skills. Concept maps were found to be effective in assisting staff to organise their thoughts and actions when they were faced with large volumes of information at orientation. Most importantly, they enhanced critical-thinking skills by assisting the workforce to succinctly visualise priorities.

Ward (1998) proposed an orientation program underpinned by educational theory and adult learning methods. [21] This incorporates using adult learning activities such as:

- Role plays or scenarios;
- Case study exercises;
- Problem-based learning exercises;
- Individual, group and class work using visual, auditory or kinaesthetic stimuli to prompt discussion and related class work.

Using well-tested adult learning concepts such as these provides a sound evidence-based platform for the learning that occurs during orientation.

Adult learning theory is founded on the principles that effective training is:

- Relevant – to the experience or intended experience of the adult learner;
- Engaged – the adult learner retains knowledge and concepts more readily if they are engaged in the process of discovery and exploration rather than being the recipient of information;
- Active – the learning process should be active, and replicate as closely as possible the environment within which the skill or knowledge will be applied; and
- Learner-centred. [22]

Limitations

Databases within business and management were not searched and may have resulted in the retrieval of other studies.

Searches were limited to articles published in English. This may have limited exposure for articles published from other countries with similar health care systems or cultures.

Recommendations for future research

This review has revealed three main areas worthy of further investigation. Firstly, an examination of models and frameworks to underpin orientation is warranted. The impact of the NSQHS Standards on orientation and induction within healthcare in Australia should also be examined. Finally, an evaluation of orientation processes within healthcare would assist in informing future directions.

Conclusion

There is a dearth of studies in relation to orientation and induction in the healthcare literature. There are a number of implications for healthcare organisations if they are to meet the NSQHS standards. Orientation must include safety and quality roles, the organisations' risk management system, governance structure, operational processes and procedures. In addition, patient-centred care, antimicrobial stewardship, clinical handover and mechanisms for escalation of care and emergency assistance should also be addressed. Orientation content is clearly prescribed by the NSQHS standards with safety, quality, leadership and risk being the primary foci. The gap in the literature relates to an underpinning framework. Concept mapping, educational theory and adult learning methods have been shown to enhance workforce problem solving and engagement with orientation, however further research is needed to enhance practice.

Competing Interests

The authors declare that they have no competing interests.

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Failure to Escalate: what stops junior doctors asking for help when they need it?

C Kelly, S Larwill, L Hamley and M Sandford

Abstract

Worldwide, recognition of and response to clinical deterioration is a key safety issue in hospitals. Within this, issues which prevent the most senior available decision makers from being involved in decisions about managing a patient's clinical deterioration may contribute to poor outcomes.

This study was undertaken to understand the reasons why medical trainees do not always escalate concerns to more senior staff when a patient shows signs of clinical deterioration. This was done through an online survey of medical trainees at a large tertiary Health Service in Melbourne, Australia.

51% of trainees completed the survey. The trainees identified the following top barriers to escalation:

- Perceived issues accessing more senior staff
- Existence of factors that impact on judgement and decision-making re escalation (eg, lack of situational awareness, competing demands)
- Feeling that it is not always clear who to contact or who's accountable for the patient's care
- Perception that junior trainees are not always able to identify when a patient requires escalation
- Concern about a negative response from more senior staff to escalation concerns.

The trainees also provided feedback on system changes that may enable better escalation.

Conclusions: This research identifies a number of system issues that medical trainees report contribute to them not escalating clinical concerns. The survey provides excellent guidance for our organisation about what our trainees feel are barriers to escalation and how we might respond to these.

Abbreviations: CORC: Clinical Outcome Review Committee; HSMR: Hospital Standardised Mortality Ratio; MET: Medical Emergency Team.

Key words: Accreditation; medical training; quality and safety and standards.

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Introduction

Systems that ensure early recognition of, and effective responses to, clinical deterioration can minimise the risk of serious adverse events such as cardiac arrest. They may also reduce the level of clinical intervention required to stabilise a patient. [1]

Recognition of the patient safety benefits of work in this domain has increased globally and has resulted in systems supporting optimised management of clinical deterioration being increasingly embedded in hospital quality and safety systems. In addition, the most recent hospital accreditation standards, which now apply to all public hospitals across Australia, include a standard (standard 9) that outlines minimum standards for hospitals systems for recognising

and responding to clinical deterioration. [1] The standard is based on a large body of work summarised in the *National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration*. [1]

The Consensus statement identifies four domains essential to optimal recognition and response: [2]

1. Measurement and documentation of observations.
2. Systems for optimal escalation of care.
3. Rapid response systems.
4. Clinical communication.

Both the consensus statement and the national standard then document a range of systems and processes within each of these domains (eg, the use of a graphical observation chart; medical emergency response and code blue systems).

Alfred Health is a major provider of specialist state-wide services within Victoria as well as the primary provider of health services to people in the inner southeast suburbs of Melbourne. The Alfred Hospital has a Hospital Standardised Mortality Ratio (HSMR) significantly below the majority of its peer hospitals both nationally and internationally as identified in a number of different benchmarking exercises. It has a rigorous process for mortality and serious adverse event screening and review.

Like other health services, Alfred Health has implemented a suite of tools and processes aimed at optimising our systems for recognition and response to clinical deterioration. Key elements of this system include the following:

1. Medical emergency response policy and procedure
   a. includes mandatory requirement for a medical emergency team (MET) call if patient meets MET criteria.
2. Use of human-factors based graphic observation chart in all inpatient areas. This chart has embedded, mandatory escalation processes.
3. Orientation, education and training for all clinical disciplines relating to:
   a. Management of deterioration
   b. Team training
   c. Basic (and in some areas, advanced) life support
   d. Expectations regarding escalation.
4. Implementation of a mandatory Consultant notification policy outlining organisational expectations regarding when the treating consultant will be notified by medical trainees. This includes who the trainees must notify in particular circumstances.

This work has evolved in response to the national and international evolution of knowledge in this domain as well as our internal mortality and serious adverse event screening and review processes.

Central to our internal processes is the Clinical Outcome Review Committee (CORC), a committee comprised primarily of senior clinicians that reviews serious incidents and makes recommendations about system and process change to prevent recurrence.

In spite of the overall excellent mortality data, concerns were identified through CORC across 2010-12 relating to our systems for response to clinical deterioration. In particular, CORC reviewed a number of adverse events in which there was 'failure-to-escalate' ie, situations in which clinical staff appropriately identified and documented clinical deterioration but did not act as expected on this information or escalate it to a more senior member of the team for discussion/action.

In response, Alfred Health determined it needed to better understand issues which may contribute to medical trainees and nursing staff not escalating clinical concerns to more senior colleagues. Rather than focus on individual failures in escalation, the aim of this work has been to identify systemic issues which may enhance or attenuate an individual's likelihood of escalating clinical concerns appropriately. This paper documents the findings of the medical trainees barriers to escalation. Medical trainees are defined as pre-fellowship medical staff (ie, interns, residents, registrars, senior registrars and career medical officers).

Methods

Alfred Health adopted a multi-step approach to identifying any barriers to medical trainees escalating concerns to more senior, experienced members of staff.

1. Discussions with members of the Alfred Health Clinical Outcome Review Committee and the Clinical Governance Unit about contributors to 'failure to escalate' identified through previous serious incident reviews and unit level audit and case review.
2. Based on this, a draft survey tool was developed to assess:
   a. the impact of a range of perceived barriers to escalation on the likelihood of actual trainee escalation of clinical deterioration;
   b. any ideas trainees may have about mitigating perceived barriers;
   c. trainees' views on existing consultant notification and escalation guidelines and practices.

3. Once this draft tool was developed, a meeting was held with a range of medical trainees which discussed:
   a. recent cases where 'failure to escalate' was identified as a contributor to outcome;
   b. their views on factors that may contribute to 'failure to escalate';
   c. their perceptions of the draft survey tool and ideas for improvements of the tool to capture these issues/drivers.
4. Once the content was agreed, the tool was disseminated electronically to all medical trainees across Alfred Health (n=488) through SurveyMonkey. Trainees completed the survey anonymously.
5. Repeat emails to non-responders were sent via SurveyMonkey. The system allows for bulk communication with non-responders without requiring individual emails, enhancing participant privacy.
6. The survey was closed after three repeat emails were sent out over a six-week period. Analysis and reporting of the survey data then occurred.
7. The findings of the survey were presented to the Alfred Health Safer Patient Care committee which oversights work relating to management of clinical deterioration. The findings were also presented back to the medical trainees for discussion.

This project was approved by the Alfred Health Ethics Committee.

Results

Fifty-one percent (249/488) of the medical trainees across Alfred Health completed the survey. The survey had 19 questions:

- Demographic questions about current level of training and area where working.
- Questions utilising a Likert scale in which participants ranked or rated barriers to escalation identified by the health service and by the medical trainees during the meetings.
- Free text questions to allow greater explanation of individual barriers and enablers.

The survey was built and managed in SurveyMonkey and all medical trainees were emailed an individual link for completion. Repeat emails were sent to non-responders over a three week period.

The tables below present data from the survey.

Comparison of responders and non-responders

Table 1 below summarises the proportion of the different medical trainees cohorts who completed the survey. Trainees from almost all clinical specialties completed the survey with the largest pools drawn from medicine and surgery (which have the largest pool of trainees). A high proportion of interns and pre-vocational trainees completed the survey in comparison to fellows (although this group comprise a much smaller cohort than prevocational trainees. Fellows in this context refers to trainees who may or may have their fellowship who are completing sub-specialty training, typically post-completion of registrar training time but prior to undertaking a consultant role).

Table 1. Comparison of responders and non-responders

RESPONSE RATE BY YEAR LEVEL	% OF COHORT WHO COMPLETED SURVEY	TOTAL NUMBER IN COHORT
Intern	69%	54
Prevocational trainee	65%	121
Registrar	42%	317
Fellow	36%	42
RESPONSE RATE BY CLINICAL PROGRAM		
Critical care	47%	106
Medicine	52%	186
Surgery	42%	116
Other	49%	126

Table 2. Percentage of responders who identified that the themes below contributed to some extent to non-escalation of clinical concerns

ISSUE	% RESPONSE	HIGHEST FREQUENCY RESPONSE
Feeling like it's expected that you handle such issues	78	A minor barrier
Just not thinking at the time that you could/should escalate (but later thinking maybe you could/should have)	66	A minor barrier
Not being sure what sort of response you might get to escalating as there is high variability amongst seniors about what they want to know	61	A minor barrier
Thinking that the issue is not urgent – it can wait until morning / end of your cover shift	58	A minor barrier
Not being sure exactly what was wrong with the patient and so not knowing how to ask for help	50	A minor barrier
Thinking that your registrar/consultant does not want to know	46	A minor barrier
Not being sure whether to contact an onsite person (eg ICU senior registrar) or an off site person (eg consultant)	45	A minor barrier
Not knowing who to contact because there are multiple teams involved in the care	41	A minor barrier
Having had a previous bad experience trying to escalate concerns	37	A minor barrier
Having heard of others having had a bad experience trying to escalate concerns	35	A minor barrier
Not knowing who the treating consultant is	24	A minor barrier
Not wanting to escalate to seniors who undertake your college assessments/influence your career options	18	Not a barrier

Just over half (53%) of the trainees reported that at least once in the last 12 months, they had had the experience of managing a deteriorating patient on their own and later thinking it would have been more appropriate to escalate their patient's status and their clinical concerns to a more senior member of staff.

We then asked further questions to understand some of the reasons for this non-escalation.

Perceived barriers to escalation

The trainees were asked to rate a range of potential barriers to escalation on a 4-point Likert scale Table 2.

Qualitative data about perceived barriers to escalation

To validate the responses above and draw out additional detail about potential barriers, the survey also asked for free text responses to the question: What do you think are some of the barriers to escalation in Alfred Health? 123/248 (50%) participants provided at least one response Table 3 and Table 4.

Table 3. Perceived barriers to escalation – thematic analysis of free text responses

THEME OF ISSUES IDENTIFIED	NUMBER OF RESPONSES
Perceived issue accessing more senior/specialised staff	52
Existence of factors that negatively impact on trainees judgement and decision making re escalation (eg lack of situational awareness, competing demands)	35
Feel that it is not always clear who to contact / who's responsible	32
Concern that trainees are not always able to identify when a patient requires escalation	27
Have concerns about the response from seniors to escalation	25
Other issue	17
Perceived limited benefit in escalating	14
Not clear what the team plan is for managing deterioration or end-of-life issues	11
Variability in SMS expectations re what should be escalated	9
Concerns that the systems (access, telecommunications etc) do not support optimal escalation	9
Feel there may be issues with the culture re escalation	3
Total	**234**

Specific issues within the themes

More detailed analysis of the above themes highlights the following as the specific issues felt most keenly by the trainees:

Specific issues identified (Number of responses)

- Lack of knowledge / skill / experience of junior staff in identifying deterioration (18)
- Uncertain accountabilities as multiple team involvement (14)
- Difficulty accessing onsite senior staff resources (e.g. specialty teams) (14)
- Perception that the Registrars they are referring to are too busy (13)
- Uncertainty re who accountable – various other (11)
- Fear of negative/unpleasant/disinterested response (11)
- Perception that they are expected to manage the situation without escalation (10)
- Fear of being seen as not competent. (10)

Experience of a negative response to escalation

We asked the trainees about their own experience of receiving a negative response to escalation of clinical concerns. Just under half of the group (48%) reported that they had never experienced a negative response to escalation. Forty two percent had received an occasional negative response whilst only 11% stated that they had sometimes or frequently had a negative response to escalation (Table 4).

Summary of barriers identified through survey

Consideration of the above findings together highlights the key themes below which medical trainees themselves identify as barriers to escalation to more senior staff by medical trainees at Alfred Health:

1. Perceived issues accessing more senior or specialised staff.
2. The existence of factors that negatively impact on judgement and decision making re escalation (eg lack of situational awareness, competing demands on time).
3. Feeling that it is not always clear who to contact or who's accountable for the patient's care.
4. Perception that some trainees, particularly the most junior trainees are not always able to identify when a patient requires escalation.
5. Concern about the response from more senior staff to the escalation of a clinical issue.

How could we address these issues?

We then asked the trainees to outline what they felt would help remove some of these barriers. Forty percent (100/249) survey respondents provided 160 responses Table 5.

Table 4. Individual experience of a negative response to escalation

	RESPONSE %	RESPONSE COUNT
Never	48.0%	117
Occasionally	41.4%	101
Sometimes	9.8%	24
Frequently	0.8%	2

Table 5. What do medical trainees think would be helpful in overcoming these barriers?

ESCALATION ENABLERS IDENTIFIED BY TRAINEES	NUMBER OF RESPONSES
Optimise available workforce	23
Continue to have 'rules'/policies and guidelines that support optimal escalation	22
Optimise training about what to escalate and consequences of nonescalation	20
Optimise senior staff support for and response to escalation	20
Optimise culture re escalation	13
Optimise systems for identifying accountable senior staff	13
Optimise team planning for acute deterioration and end-of-life scenarios	10
Optimise paging, IT and telecommunications systems	10
No change	9
Other	7
Optimise access to high acuity beds	5
Optimise clinical handover	4
Optimise training on how to respond to clinical review criteria	3
Less guidance about what to escalate	1

Clarity of unit level expectations and information regarding escalation

Whilst there is organisational policy about escalation and consultant notification, in many units there are also additional local requirements that reflect the specific needs of the clinical area and the staffing profile. This information is typically provided in written form through the unit handbook and also verbally at unit level orientation, handover from the previous medical trainees in a rotation and through ongoing conversation with the consultant staff during a rotation.

Anecdotally, we are aware of variability across the different units in terms of how and how well the unit specific information is communicated. As such, we asked trainees to outline how clear the expectations about what to escalate were in their current unit. At an organisational wide level, 64% of respondents stated that unit level expectations were very clear whilst another 20% reported feeling somewhat clear about their current unit expectations (Figure 1).

A breakdown of this data highlighted that vocational trainees in critical care areas (anaesthetics, ICU, after emergency) reported the highest degree of clarity about what should be escalated and when, whilst prevocational trainees and vocational trainees in aged care/rehabilitation areas were least clear about the expectations regarding escalation (although in both cases, over 50% of the cohort reported being very clear about expectations (Table 6).

Figure 1. Thinking about your current unit, how clear is it when you can and should be escalating clinical concerns?

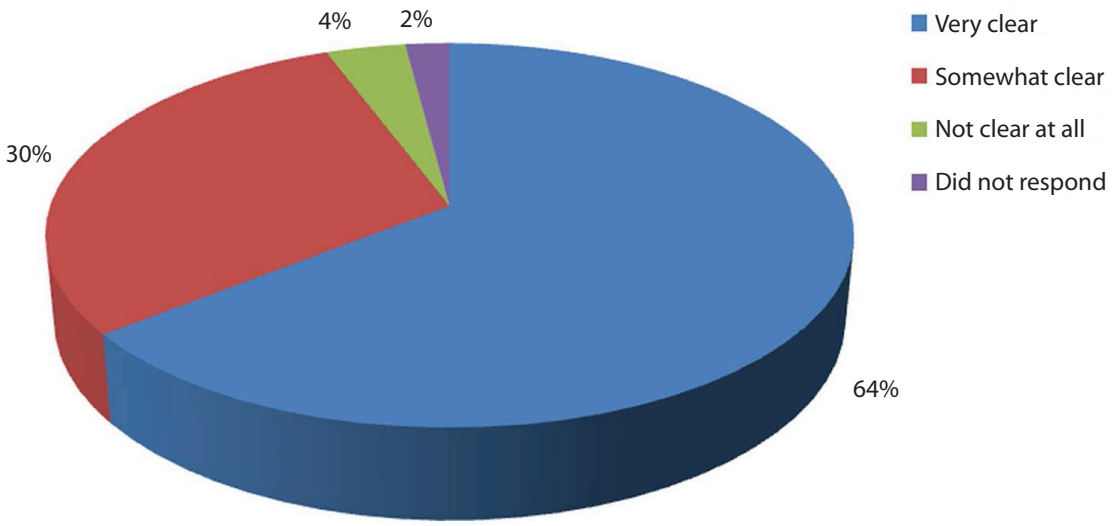

Table 6. Clarity of unit-level expectations

TRAINEE LEVEL / UNIT		% OF RESPONDENTS WHO FELT THAT EXPECTATIONS WERE VERY CLEAR IS AS FOLLOWS
Prevocational trainees:		56%
Vocational trainees:		
	Surgical units	67%
	Medical units	65%
	Critical care units	79%
	Aged care/Rehab units	55%
	All other units	69%

Discussion

In recent years, there has been an increasing focus within hospitals on optimising management of clinical deterioration. The Australian Commission on Safety and Quality in Health Care has stated: [1]

> *Ensuring that patients who deteriorate receive appropriate and timely care is a key safety and quality challenge… Even though a range of systems have been introduced to better manage clinical deterioration, this area needs to remain a high priority while patients continue to experience preventable adverse events because their deterioration is not identified or properly managed.*

At Alfred Health, a range of systems and processes have been introduced to optimise our clinical deterioration recognition and response systems.

This survey was undertaken to understand incidents where 'failure-to-escalate' was a contributor – that is, to provide detailed information from our medical trainees about some of the potential barriers to trainees communicating and escalating their clinical concerns to more senior medical staff.

In this study, just over half of the trainees reported that they had had at least one experience in the last 12 months in which they did not escalate clinical deterioration and on later reflection thought they should have. Whilst not all such situations lead to adverse events, it is likely that not having the most senior decision makers involved in the patient's care, particularly at times of acute deterioration, increases the risk of adverse events. Thus, understanding reasons why this may occur and how we can minimise this is important.

The key barriers identified by the trainees were as follows:

6. Perceived issues accessing more senior or specialised staff.
7. The existence of factors that negatively impact on judgement and decision making re escalation (eg lack of situational awareness, competing demands on time).
8. Feeling that it is not always clear who to contact or who's accountable for the patient's care.
9. Perception that some trainees, particularly the most junior trainees are not always able to identify when a patient requires escalation.
10. Concern about the response from more senior staff to the escalation of a clinical issue.

This work builds on the 2009 study by Shearer and colleagues who, in a similar acute setting, used structured interviews to identify reasons clinical staff did not activate a rapid response system when patients met agreed clinical parameters for activation of a rapid response. [3]

That study found that the main reasons for non-initiation of a rapid response centred on clinicians feeling that they either:

- ***should*** be able to manage patients by themselves on the ward; or
- ***could*** manage these patients on the ward and no additional expertise was required.

Whilst the specifics of the clinical scenarios differed in the two studies, they both reflect issues with essential components of effective systems for management of clinical deterioration.

The study also reported that, in a small proportion of cases, the reason medical and nursing staff did not activate a rapid response when it would have been appropriate to do so, was because of a fear of a negative or hostile response (13% of nursing interviewees and 26.5% of medical interviewees).

In our study, 25/ 248 (11%) of trainees identified a fear of a negative/hostile response as a barrier to appropriate escalation. This was in spite of the fact that 48% had never experienced a negative response to escalation and another 42% had received an occasional negative response.

The potential enablers identified by the trainees, in the most part reflect the barriers they identified:

- Optimising available workforce;
- Continuing to have 'rules'/policies and guidelines that support optimal escalation;
- Optimising training about what to escalate and consequences of non-escalation;
- Ensuring senior staff support for and response to escalation; and
- Optimising culture re escalation.

Other potential enablers identified by Alfred Health in response to the barriers include:

1. Instituting training about factors that negatively impact on judgement and decision-making and how trainees can identify and manage these. We have begun developing a curriculum for such training. This exciting piece of work, still in its early stages, will cover such content as: mindfulness and situational awareness, error wisdom, clinical decision-making and cognitive traps. This will be piloted in 2013-14.
2. Improving our systems for documenting and clarifying accountabilities and escalation pathways.

This work contributes to improving recognition and response systems by eliciting some of the reasons that trainees do not always escalate clinical deterioration. This allows us to develop a systematic response to the issues identified as part of ensuring an optimal response to clinical deterioration.

Limitations of the study

The primary methodological limitation of the study is the use of self reported perceptions. Whilst use of more objective assessment mechanisms such as observational audit would be likely to provide a higher degree of certainty about the findings, this is also methodologically difficult given the disparate nature of both the workforce and the 'events' in which they make decisions about escalation or non-escalation.

The second limitation is the lack of certainty about whether the methodology adequately captured all potential barriers and enablers. Discussion with medical trainees and findings from adverse event review were the basis for the development of the 'list' of potential barriers and it is possible that other barriers exist that were not accounted for in this list. A supplemental free text question aimed to capture anything missed but may also have missed other barriers.

There is a question about the generalisability of these findings to other organisations. Whilst local culture, policy and procedure vary across Australian Hospitals, minimum standards applicable to management of clinical deterioration exist in our national standards and as such

there is some consistency in approach. Similarly, medical trainees move between hospitals in a health service and many move between health services. As such, it is likely that there is some generalisability in these findings.

Our knowledge and understanding of the local barriers to escalation (in both medicine and nursing) has increased and we are currently refining the survey tool based on this emerging knowledge. The work has also provided a basis for further research and work to be done in the area. Potential future areas of research related to this include:

- assessing the benefits of the training about judgement and decision making and other pieces of work instituted in response;
- Assessing the barriers for other staff groups: Alfred Health has undertaken a similar piece of work with the nursing staff and are in the process of analysing this data and comparing with the medical trainees data.
- Research into barriers to escalation that uses non-self reported data.
- Evaluation of the systems and processes implemented to overcome these barriers.

Competing interests

The authors declare that they have no competing interests.

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RESEARCH ARTICLE

Utility of an Audit in Improving Patient Flow-Application to Laparoscopic Adjustable Gastric Banding in a Public Hospital

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Abstract

Aim: To rationalise the peri-operative stay of patients undergoing Laparoscopic Adjustable Gastric Banding (LAGB) and achieve 23 hour stay as routine for Lap Band Surgery in a public hospital setting in Australia.

Methods:

1. Retrospective audit of 20 consecutive patients
2. Prospective time-in-motion analysis of a single case to identify 'non-value added' patient care.
3. Development and implementation of a 'fast-track' protocol.
4. Reassessment of outcomes after implementation of fast-track protocol with prospective evaluation of outcomes in 28 consecutive patients.

Results: Twenty patients were retrospectively reviewed demonstrating a median post-operative stay of 46 hours (range 39 to 312). A time in motion study and a literature review demonstrated unnecessary delays to most key steps in recovery and lead us to change our practice. A fast track program was developed and following its implementation, 28 consecutive patients were prospectively evaluated. The post-operative stay following implementation was 20 hours (range 15 to 45). Next day discharge was achieved in all patients except one who stayed an additional day to receive dialysis.

Conclusions: 23 hour stay following Laparoscopic Adjustable Gastric Banding is achievable in the public health setting. Clinical audit has been successfully used to identify inefficiencies, facilitate change and reassess the impact of that change thereby ensuring quality of care and efficient utilisation of resources.

Abbreviation: LAGB – Laparoscopic Adjustable Gastric Banding.

Key words: Clinical audit, Time-in-motion study, Surgery, Laparoscopic Banding, Fast track protocol.

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Introduction

Obesity is an increasing epidemic in Australia with an estimated 20% of the population classified as obese (BMI > 30) by World Health Organization standards. [1] Obesity is associated with significant morbidity and increased mortality with obesity-related complications in Australia estimated to cost $A830m annually. [2] Bariatric procedures achieve long-term weight loss and help resolve associated co-morbidities. [3] Laparoscopic Adjustable Gastric Banding (LAGB) gives sustained long-term weight loss and improvement of co-morbidities and minimal risk of serious complications. [4,5] The low rates of peri-operative mobidity makes LAGB a particularly attractive option for patients. Additionally

hospital administrators favor efficient utilisation of resources (inpatient hospital beds). [6,7]

The Austin hospital is a 400-bed publicly funded tertiary hospital in Melbourne, Australia. The Upper GI Surgeons offer a full range of Bariatric services including LAGB. Such difficulties in providing bariatric procedures in a public hospital have been previously highlighted. These included restricted access to inpatient beds for non life-threatening disease. These issues are systematically analysed and solutions are implemented to maximise our limited resources. [4]

Hospital stay following a primary (as a first bariatric procedure) placement of a laparoscopic adjustable gastric band is generally described in the literature as a day or 23 hour stay procedure. [7-9] Anecdotally it appeared that our patients remained at least two days following their operation, though the same surgeons who operated in the private sector were routinely achieving 23 hour stays in those institutions. We could think of no good reason why a patient treated in a public facility should need to stay longer post-operatively. The hypothesis tested is that the resource utilisation of laparoscopic gastric banding patients can be improved via an audit and implementation of a fast-track protocol.

Based on this, three important questions were raised.

1. Why do patients in a public facility stay at least two nights when a 23 hour stay is achieved in a private facility?

2. What non-value added care contributes to this difference in the length of stay?

3. What changes are necessary that would result in improved utilisation of resources without compromising patient care?

Methods

Institutional approval for the study was granted (Ethics Committee, Austin Hospital, Melbourne). A four-step plan was developed to test the hypotheses and create change.

Step 1.

A retrospective case note review (audit) was performed to confirm that the length of stay was indeed greater than 24 hours. Consecutive patients over a twelve-month period (21/10/2009 to 20/10/2010) who underwent primary laparoscopic gastric banding (ie, no previous bariatric surgery of any type) were identified from a prospectively maintained database. Their case notes were reviewed and potential key milestones (See Table 3) that could facilitate early discharge were collected.

Step 2.

To truly understand the problem (such as delays and frustrations) we felt that a time-in-motion study on a single patient selected at random would provide useful insights. A time and activity logbook would help identify areas of inefficiency (see results in Table 3). On the day of admission, the researcher met with the consented patient and stayed with them between the hours of 0700-2100 hours. The patient's activities were recorded prospectively on a ten-minute basis. Activities outside of these hours were retrospectively obtained the following morning.

Step 3.

Based on information obtained in Step 1 and Step 2, a fast-track program was created to minimise or eliminate non-value added components of patient's journey. This would be achieved without compromising the quality of care.

This consultative process included medical, nursing and allied health staff involved in the peri-operative care of bariatric patients. The basis of change included what was available on current literature review and enhanced recovery for LAGB.

Implementation of the pathway was facilitated by close liaison with the key stakeholders in peri-operative care. Most patients were admitted through the dedicated 23 hour surgical stay unit, which encouraged the 23 hour philosophy. After a dummy run and feedback, the program was fine-tuned for final implementation and testing.

Step 4.

Important performance indicators were prospectively recorded over the implementation phase of the new fast track program. This enabled objective comparison. These included operative duration, post-operative and total hospital stay.

Statistical analysis

Data was checked for normality. As the study involved small numbers and the data skewed, comparison between groups was calculated with Mann-Whitney (non-parametric) test where appropriate. Chi-Squared test was utilised for categorical data. Analysis of the data was performed using SPSS version 13. Unless otherwise stated, all values given were median with the range (lowest to highest). A p-value of less than 0.05 was deemed significant.

Results

Retrospective case note review

During the retrospective review period, twenty patients underwent LAGB as a primary bariatric procedure. Patients

Table 1: Patient demographics

DEMOGRAPHICS	CONTROL (n = 20)	FAST TRACK (n = 28)	P- VALUE
Age (Years)	47 (34 - 69)	48 (25 - 66)	0.930
Female	15/20	21/28	0.317
Weight (Kg)	125 (88 - 209)	132 (87 - 180)	0.991
BMI (Kg/m^2)	45 (36 - 70)	46 (34 - 68)	0.917
Heart disease	3 (15%)	4 (14%)	0.705
Hypertension	12 (60%)	18 (64%)	0.772
Dyslipidaemia	5 (25%)	5 (18%)	0.721
Type 2 Diabetes	8 (40%)	10 (36%)	0.772
Obstructive sleep apnoea	15 (75%)	25 (89%)	0.251

Results presented as median with range (in brackets)

Table 2: Surgical variables

SURGICAL VARIABLE	CONTROL (n = 20)	FAST TRACK (n = 28)	P- VALUE
AM : PM (Operating session)	9 : 11	11 : 17	0.133
Operative duration (minutes)	105 (60 - 150)	82 (45 - 210)	0.018
* Time to Gastrograffin Study (hours)	21 (15 – 29)	Nil done	
** Total Hospital Stay (hours)	53 (48 - 336)	27 (23 - 57)	<0.0005
*** Post-Operative Stay (hours)	46 (39 - 312)	20 (15 - 45)	< 0.0005
Early complications - Major - Minor	 1 0	 0 1	

Results presented as median with range (in brackets)

** No gastrograffin post operative evaluation as part of the new fast track protocol. Time to gastrograffin study (control group) is taken with the first reference time point at the end of the operation.*

*** Total hospital stay is marked with the first reference time point at the admissions office.*

**** Post operative stay is marked with the first reference time point at the end of operation.*

included in the retrospective review period served as a 'control group'. The control group in Table 1 and 2 describes patient demographics and operative variables. As is usual in this population, the majority of patients were female with a mean BMI of 45 (36-70) and had at least one weight related co-morbid disease.

In the control group only one patient experienced complications-pulmonary embolus, urinary retention and renal failure requiring involvement of other hospital specialists and a prolonged hospital stay.

With a median post-operative hospital stay of 46 hours, we felt that delivery of LAGB services was inefficient. However, it was unclear what was actually inefficient. We initially suspected that there was a delay in obtaining a routine post-operative gastrograffin swallow. The time-in-motion study (Table 3) identified key areas of concern (see key milestones, in Table 3).

Table 3: Utilisation of time by patient and key milestones

UTILISATION OF TIME BY PATIENT	DURATION IN MINUTES
Time taken to check in	135
Anaesthetic time	30
Surgical time	120
Operating room recovery time	110
Ward time (minutes) (total) - Time spent standing - Time in chair - Time in bed	2710 (45hrs) 70 210 2430
Post operative stay	2780 (46hrs)
Total stay	3105 (52hrs)
Key milestones/ steps First mobilisation First oral intake (water) First 'free fluids' IV fluids ceased IV analgesia ceased	 1230 (20hrs 30min) 230 (3hrs 50min) 1560 (26hrs) 1950 (32hrs 30min) 1740 (29hrs 50min)

NB. Key milestones duration is taken from the end of surgery to the time of activity

Time-in-motion study

This was a 56 year old female (weight 108kgs, BMI 38) who had obstructive sleep apnoea and a known hiatus hernia. Table 3 shows both utilisation of time by the patient in hospital and important key performance milestones (steps) that would facilitate safe discharge.

Development of new protocol

Out of this came six key goals/changes that would hopefully achieve our goal and integrate them into a new care plan.

- Pre-operative patient education on 23 hour stay as routine
- Cease IV fluids as soon as patient returns to ward
- No longer perform routine post-operative gastrograffin swallow
- Commence oral free fluids within four hours of surgery
- Mobilise within four hours of surgery
- Encourage oral and multimodal analgesia rather than parenteral opioids.

Implementation and prospective audit of fast track program

From 21/10/2010 to 22/12/2010 28 patients underwent fast track primary LAGB. Demographics, co-morbidities and operative variables were similar to the control group (see Table 1 and 2). All patients had at least one weight related co-morbid disease.

All except one patient was discharged the day after surgery and within 23 hours of their operation. The patient who stayed an additional day did so at the request of the renal unit to facilitate haemodialysis.

There were no complications. There was a minor intra-operative variation which did not delay discharge. A patient without a known cardiac history developed profound bradycardia/asystole during surgery. Once circulatory parameters were successfully normalised, the operation was completed and the patient sent to the high dependency unit for monitoring. Assistance was sought from the physicians and was medically cleared and discharged home.

Discussion

Over half of the bariatric workload in the Upper GI unit consists of complex revisional procedures. As a result, LAGB's performed as a primary bariatric procedure is small. During the study period the surgical unit received additional funding specifically for patients waiting for primary LAGB. This is why a similar number of cases were performed in the two months as had been in the entire year prior. After institutional approval, we took the opportunity to retrospectively audit and prospectively implement changes that would improve utilisation of resources without compromising patient care. This study demonstrates the effective use of audit methods to improve service delivery in laparoscopic gastric banding surgery within the constraints of a public hospital system.

Day-stay LAGB safety, effectiveness and cost benefit have been confirmed and the debate for length of stay following LAGB is over-night vs day-stay not over-night vs multi-day stay. [8-10] Finding ourselves well behind either target we chose to aim for 23 hour stay. Most of our patients would not meet the criteria for day-stay as described by De Waele and co-workers. [8,10] The need for an early morning operating time also conflicts with our theatre availability and reduces flexibility.

The median operative time was shorter in the fast track group. Although this was statistically significant, the real difference of approximately 20 minutes should not influence the post operative outcome. Apart from the fact that LAGB surgery for this fast track cohort was specially funded and consultant led, we had no other explanation to account for this difference. The control group and fast track group were evenly matched for demographics, co-morbid diseases and operation (ie non-revisional LAGB only).

Determining 'value-added time' is difficult and subjective. Hospital activities such as administration of IV fluids and analgesia as well as investigations would only justify time as 'value-added' if they were necessary. As with other multi-modal fast track programs, we found that the five key goals (in Step 3) minimised non-value added time and facilitated early discharge without compromising patient care.

Historically, a post-operative gastrografin swallow was obtained for all LAGB. During this review process the utility of this was questioned given difficulties of access in the public hospital environment. Anecdotally we rarely identified any abnormality. It is common to encounter a significant delay in getting the test, which delays first oral intake which in turn may delay discharge. In our control study, the mean time to gastrograffin swallow was 21 hours and patients were not cleared to commence fluids until after the study had been performed and reviewed. We believe this was one of the key variables that created unnecessary prolonged hospital stay. Wasowicz-Kemps and co-workers managed to obtain gastrografin swallows on all patients either as day-stay or overnight stay though it necessitated the patient coming back to hospital for the procedure. [9] Arguments for the routine use of contrast swallow include the importance of maintaining the skill in performing and interpreting the test, having a historical comparison if there were problems in the future, and as a quality assurance tool for band position. Frezza and co-workers [11] questioned the role of the routine contrast swallow post LAGB and in a series of 100 patients found it was expensive and of limited value and proposed not to undertake the contrast swallow.

After departmental discussion we concluded that the overall cost of routinely obtaining this was not justified and elected to abandon it in the new protocol. In our setting, it was obvious that the delay in the introduction of free fluids was mainly due to obtaining the contrast swallow. In the past, when oral contrast swallow was requested, the two significant inefficiencies included the delay or queue in obtaining the test; then a further wait to have the study reported/ reviewed prior to introduction of fluids. Therefore it seemed logical to omit this test in non-complex primary operation. Significant reductions in hospital stay were achieved as a result of this change. Whilst the value of contrast swallow for primary LABG is of low value, we still maintain the ability to use it selectively and in revisional surgery.

Conclusion

By using standard audit review and time in motion analysis, we have successfully developed and instituted and demonstrated the efficacy of a multimodal fast track program for laparoscopic gastric banding in a public hospital environment resulting in early discharge and improved utilisation of resources.

Competing interests

The authors declare they have no competing interests.

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RESEARCH ARTICLE

Social Networks in Exploring Healthcare Coordination

S Uddin and L Hossain

Abstract

In this study, we introduce a social network-based research framework to explore and model coordination performance in various healthcare settings. In the healthcare environment, different professionals work together in order to provide effective services to patients. This collaborative working environment eventually develops a social network among healthcare professionals. A social network is a social structure made up of a set of actors (eg, individuals or organisations) and the dyadic ties between these actors. Measures (eg, centrality and tie strength) of this social network are considered as independent variables in the proposed framework. Performance attributes of coordination (eg, hospital length of stay, total hospitalisation cost, readmission rate and patient satisfaction) are utilised as dependent variables and socio-demographic characteristics of healthcare providers, healthcare professionals and patients are regarded as moderating variables. We then exercise this research framework in the modeling coordination and performance of a Patient-Centric Care Network (PCCN) which has evolved over time inside a hospital among different healthcare professionals for each patient admission. We find that social network attributes of degree centrality, connectedness and tie strength impact on coordination performance for PCCN. We further note that socio-demographic characteristics of patient age, patient sex and hospital type (ie, private versus public) moderate the relation between independent and dependent variables for PCCN. We argue that the proposed research framework of this study could be applied in various healthcare settings (eg, inter-departmental collaboration within hospital and Intensive-Care Unit coordination) to explore and model coordination performance.

Abbreviations: **HCF – Hospital Contribution Fund; PCCN – Patient-Centric Care Unit; SNA – Social Network Analysis; THR – Total Hip Replacement.**

Key words: **coordination performance; patient-centric care network; hospital length of stay; healthcare management; hospitalisation cost.**

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Introduction

A social network is defined as a collection of individuals, each of whom is acquainted with a subset of others by one or more different types of relations such as friendship, kinship and organisational position. [1] Social Network Analysis (SNA) is the methodical analysis of social networks. The measures and methods of SNA have been utilised extensively in modeling and exploring interactions among individuals and their impact on collaborative performance in diverse contexts such as disaster response, [2] the manufacturing environment [3] and inter-organisational partnerships. [4]

Coordination, the management of task interdependencies, [5] has been shown to enhance performance not only in non-medical settings such as organisational learning [6] and the product development cycle, [7] but also in healthcare settings, particularly chronic disease management and emergency and intensive care. [8] Coordination is very critical to organisations for their smooth running to achieve desired organisational goals. From the perspective of patient perceptions of quality of care, coordination is identified as one of the most important factors. [9] In addition, effective coordination among staff reduces adverse events like unusual death and wrong treatment in the care of hospitalised patients. [10] Coordination is one way that healthcare organisations have attempted to meet the demands they face; for example, demand for improved quality of care and clinical outcomes and demand for a high level of patient satisfaction.

Measuring the coordination performance of any collaborative effort is a challenging task due to difficulties in detecting the type and nature of interactions that exist among actors. In a hospital emergency department, for example, coordination performance can be measured by how quickly actors (eg, doctors, nurses, medical test units and pathology department) in the hospital emergency network exchange information and take immediate actions based on that information for patients' successful recovery from illness. Similarly, for extreme events such as natural disasters, where different emergency agencies frequently develop formal and informal network relations, coordination may be quantified by how quickly and effectively such an incident is responded to in order to save lives and return a society to a state of 'business as usual'. [11] Therefore, it is important to find out the key coordination processes and then measure the effectiveness of those processes in order to measure coordination.

Although coordination is not a new concept in the health services research community, it is difficult to quantify the performance of coordination in healthcare organisations. There is evidence in the current healthcare literature where researchers rely on staff perceptions of quality to measure coordination. [12] In recent years, there is an increasing trend in the clinical measures of quality, such as mortality and morbidity [13] and hospital readmissions, [14,15] to study coordination in healthcare organisations. However, to quantify staff perception of quality is not an easy job and could result in different responses from different staff for the same or similar services. Further, not all hospital admissions are life-threatening and there are hospital admissions with very low or zero chance of death such as a hospital admission for hip replacement or for a broken hand. Thus, any construct or measure that is common to all hospital admissions should be considered in quantifying coordination performance for healthcare organisations.

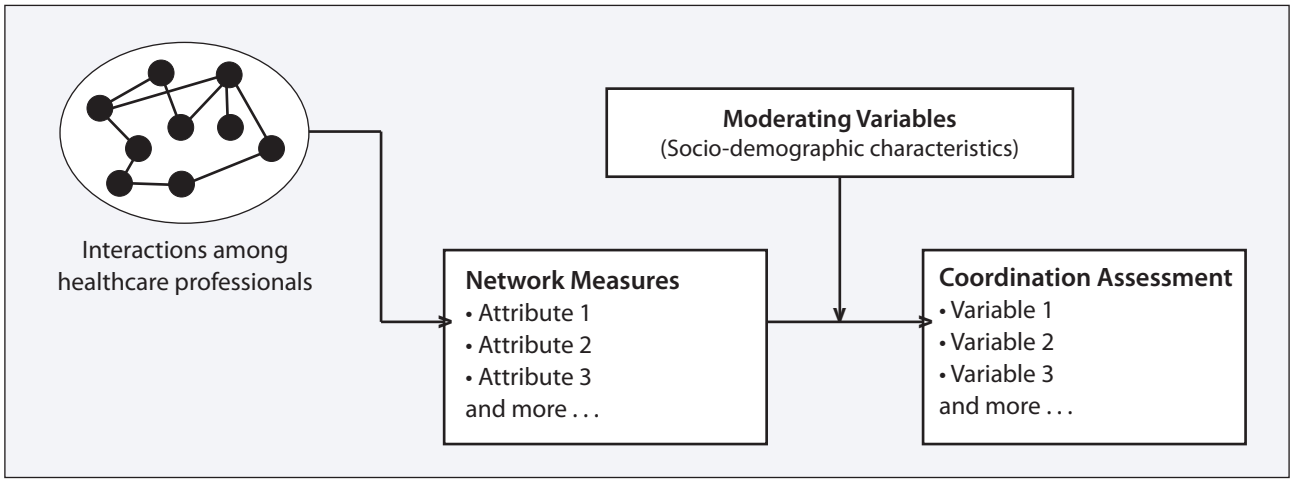
SNA, which provides both a visual and mathematical analysis of network relations, is the mapping and measuring of relationships among actors. [16] It has been successfully applied to evaluate the location of actors in a network. Network centrality or centrality of SNA is a structural attribute of nodes in a network that determine the relative importance of an actor within that network. The centrality measure of an actor in the network is useful to determine their network position. Degree centrality, which is mainly relevant in the study of popularity and activity of actors, [17] is one of the three basic centrality measures of SNA. The number of direct connections that a node has with other nodes in a network determines the degree centrality of that node. This centrality measure has been criticised for considering only the immediate ties that an actor has, rather than indirect ties to all others. Researchers proposed two other centrality measures (ie, closeness centrality and betweenness centrality) to overcome this shortcoming of degree centrality. An actor's indirect connectivity with all the rest of the actors of a network is represented by closeness centrality; whereas, betweenness centrality indicates an actor's capacity to control the flow of information in a network. [18]

In this study, we aim to propose a framework, based on SNA methods and measures, for modeling coordination in healthcare organisations or hospitals. Since SNA measures can explore the locations and positions of actors who are working in a collaborative environment, this framework can examine what structural properties of actors, in terms of their network positions, are conducive to coordination performance. This framework can further explore what other structural properties limit group performance. The rest of the paper is organised as follows. In section two, we propose the research framework for modeling coordination in healthcare context. An application of this proposed research framework to the context of a Patient-Centric Care Network (PCCN) is illustrated in section three. Finally, section three discusses the contribution of this study and concludes the paper.

Research framework: social networks for modeling healthcare coordination

In general, healthcare organisations are considered to face situations where either stable or uncertain or a combination

Figure 1: Proposed social network-based research framework for modeling coordination performance in healthcare environment

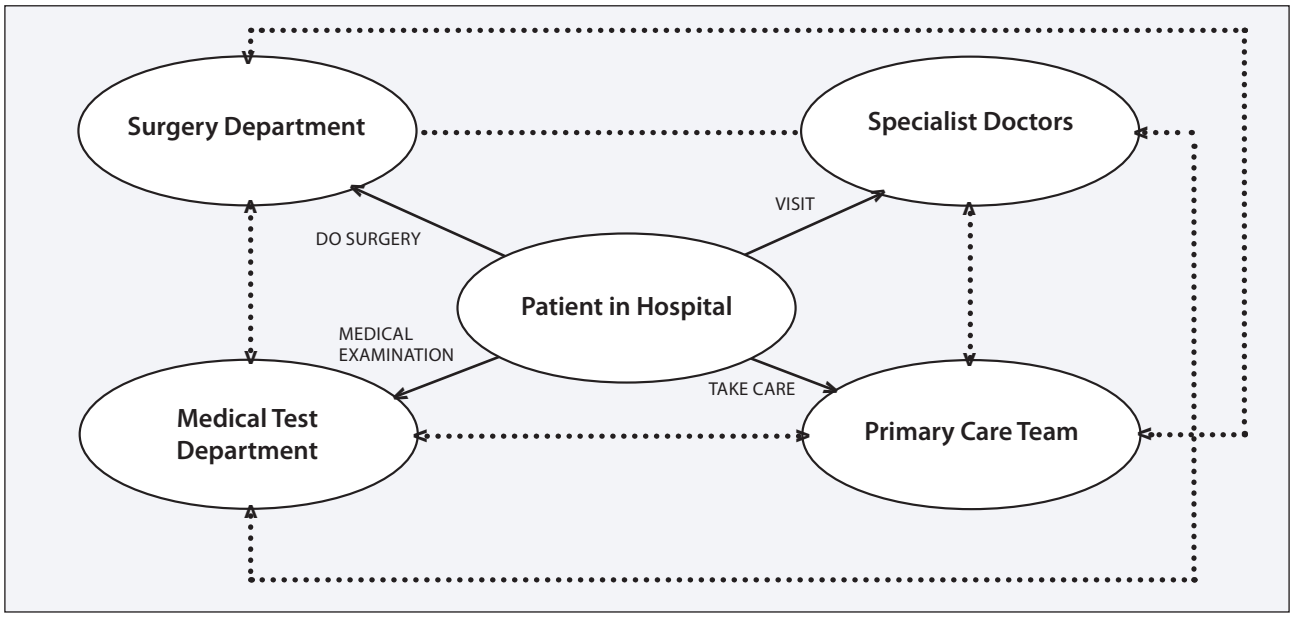


of both work requirements is needed for their smooth functioning to promote patient healthcare outcomes. The uncertainty or unpredictability, which entails a higher level of staff interdependencies, [19] comes in large part from the unpredictable arrival of patients in hospital emergency departments and from the variability of patient responses to medical intervention. On the other hand, only stable work requirements are needed for some hospital admissions. For example, patients who need surgery for knee or hip replacement might be best cared for by going through well-planned procedures in an environment where only stable work requirements are required.

In providing healthcare services, different healthcare professionals including nurses and physicians work together. Because of task dependencies, links or ties evolve among those healthcare professionals during the course of providing services to patients. [20] This type of working environment therefore constitutes a social network among them. On the other hand, existing social network theories (ie, Bavelas' Centralisation Theory [21] and Granovetter's Strength of Weak Tie Theory [22]) suggest that the structure of network itself, the positions of individual actors within a network and the strength of network relation between actors affect both individual and group performance. Therefore, this social network can be explored using the measures and methods of SNA, which further enables us to examine which structural properties of this social network are conducive to coordination performance and which others limit it. Figure 1 illustrates the proposed research framework of this study. This framework consists of three components: independent variables, dependent variables and moderating variables. The possible hypotheses constructed from this research framework could be based on (i) whether or not the independent variables have an impact on the dependent variables; and (ii) whether or not the moderating variables have the capability to moderate relations between the independent and the dependent variables. SNA measures (eg, degree centrality, closeness centrality and tie strength) are considered as independent variables and performance attributes of coordination (eg, hospital length of stay, total hospitalisation cost, readmission rate and patient satisfaction) are utilised as dependent variables. Socio demographic characteristics of healthcare professional and healthcare service recipients (eg, patients' age and gender, and hospital type – public and private) could be the possible moderating variables.

This generalised framework could be exercised in different settings of healthcare service providers or hospitals for modeling coordination performance. For example, it can be utilised to explore a collaboration network that evolves among nurses, physicians and other hospital staff including pathologists and technicians. Moreover, this framework could be utilised to explore collaboration networks among physicians in order to examine what type of communication and coordination is conducive to patient outcomes. Furthermore, inter-departmental coordination and collaboration within a hospital organisation could be explored using this framework. This framework could explore, for instance, how well the emergency department of a hospital collaborates with the other departments of that hospital. In the next section, we exercise this research framework in the context of a PCCN that emerges among nurses, physicians and other hospital staff during the course of providing healthcare services to hospitalised patients.

Figure 2: Patient-centric care network (PCCN) that emerges during patient hospitalisation period

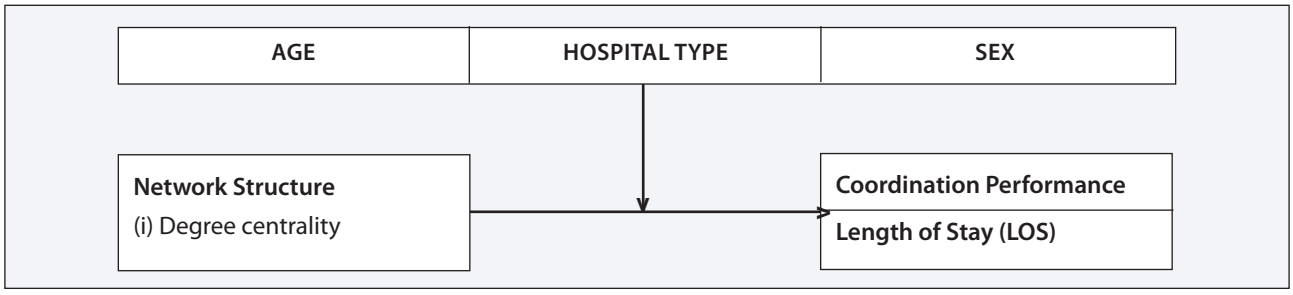


Application of proposed research framework: Patient-Centric Care Network

It can be conceptualised that during the hospitalisation period, patients receive services from different hospital service units. Also, depending on the unavailability of hospital doctors and the patients' medical condition, patients need to be seen by outside specialist doctors. For instance, a patient might be served by medical test department before going through hip replacement surgery by surgeons or specialist doctors. After surgery that patient could be served by a primary care unit for post surgery care. At this stage, that patient might need to be seen by external doctors depending on their medical condition. This forms a PCCN as illustrated in Figure 2. The one-directional links between patient and different hospital units in this Figure indicate that patients receive medical services from those service units. There are also relations and interdependencies among all hospital departments, as shown by the two-directional dotted line in Figure 2. These types of interdependencies between patient and service units and among different service units impact on both network attributes (eg, frequency of doctor-visit) and performance measures (eg, hospital Length of Stay [LOS] and patient satisfaction) of PCCN. Based on the research framework of Figure 1, we propose a model, which is illustrated in Figure 3, to explore the coordination performance of PCCN. In this model we consider the attributes of PCCN as independent variables, patients' hospital LOS as dependent variable and socio-demographic characteristics of patients and hospitals as moderating variables.

Focusing on effective delivery of health services and patient expectations, researchers have been working to develop coordination models for healthcare providers or hospitals. A number of promising care coordination models are found in the current healthcare literature. Care Transition Model, for example, which provides care across different healthcare settings to patients with chronic or acute illness, shows

Figure 3: Coordination performance model for patient-centric care network (PCCN)



lower hospital readmission rates and less total medical expenses. [23] Another cost-effective patient care model is the Guided Care Model which is a patient-centred, practical and interdisciplinary model for healthcare. This model showed impressive results from small controlled experiments. [14] For the treatment of patients with multiple chronic diseases the Chronic Care Model, which is a team-based approach to organising care, produced reduced mortality with excellent patient satisfaction in an experiment on 2356 patients. [24] There are also healthcare models with creative designs (eg, Virtual Integrated Practice Model) that have been developed to meet standard patient expectations. [25] The purpose of all these patient-centered models is to reduce treatment costs and to improve service quality, patient expectation and satisfaction. However, none of these studies investigates the underlying impact of the attributes of PCCN on hospital coordination performance.

3.1 Model variables

We utilise degree, tie strength and connectedness as independent variables and LOS as a dependent variable in the proposed coordination performance model of Figure 3. The choice of three moderating variables (ie, patient age, patient sex and provider type) in this model is motivated by the present healthcare literature. In a study of 712 hip and knee arthroplasty patients, Husted et al [26] found that the patient characteristic of age associated with hospital LOS and the perceived level of satisfaction. In another study of 16.9 million patients aged 65 or over, Yuan et al [27] noted the correlation between hospital type (ie, not-for-profit versus private) and LOS for the same surgical procedure. LOS also differs for male and female patient suffering from the same disease. For instance, Skobeloff et al [28] found a higher incidence of hospital admissions for adult female than for adult male asthmatic patients and that female asthmatic patients experienced longer hospital stays per admission than males.

Degree centrality: Degree centrality of a node in a social network is the total number of links incident to that node. In the context of network analysis, degree of an actor is the count of the number of ties from that actor to other actors. In networks that display the directional flow of actor movement, degree can be assessed for in-degree and out-degree, where 'in' represents other actors' visits to a particular actor and 'out' represents that particular actor's visits to other actors. [29]

Tie Strength: defines the quality of relationship between two actors in a network. According to Granovetter, [22] the strength of relation between two actors can be expressed as a combination of the amount of time and the reciprocal services which characterise the tie between them. In the context of PCCN, for example, the tie strength between doctor and patient could be a combination of time that doctors spend during their visits to patients and how much patients pay to doctors for their visits in return.

Connectedness: Network connectedness or connectedness defines the frequency of communications between two actors. In PCCN, it dictates the frequency of doctors' visits to a particular patient.

Length of Stay (LOS): defines total number of days that patients stay at hospital during their hospital admissions.

3.2 Research dataset

To explore relations among independent, dependent and moderating variables of the proposed model for PCCN, as illustrated in Figure 3, we used health insurance claim data. This dataset is provided by an Australian non-profit health insurance organisation – The Hospital Contribution Fund (HCF). It includes member claim data from January 2005 to February 2009. In this dataset, there are mainly three different categories of claims lodged by patients, hospitals and doctors: (i) ancillary claim; (ii) medical claim; and (iii) hospital claim. Ancillary claims are auxiliary claims for medical services such as dental, optical, physiotherapy, dietician and pharmaceutical. All claims lodged by specialist physicians except the ancillary type, are medical claims. The claims for the services provided to hospitalised patients in private or public hospitals that are approved by the Australian Department of Health, are considered as hospital claims. In general, patients have medical claims, hospital claims and very few ancillary claims for their admissions to hospitals.

In our dataset, there were about 14.87 million ancillary claims, 8.98 million medical claims and 3.1 million hospital claims that HCF received from 2507 hospitals for the health services provided to its 0.44 million members over the data collection period. As people have hospital admissions for a wide range diseases, in this research we considered claim data only for Total Hip Replacement (THR) patients. Each THR admission had medical claims, hospital claims and a few ancillary claims. The summary of different types of claims for THR patients from our dataset is given in Table 1.

3.3 Exploring data

We measured degree centrality for a patient by counting the total number of doctor-visits to that patient during their hospitalisation period. As each doctor-visit to a patient is responsible for a medical claim to HCF, the total medical

Table 1: Summary of dataset considered to explore PCCN model

	TOTAL	THR
#. Claims	**27004017**	**95566**
Hospital	3106212	24559
Medical	8980146	69619
Ancillary	14917659	1388
#. Hospital admitted patients	**439713**	**2352**

claims that a patient has during their hospitalisation period is the value for degree variable. The ratio of the expenses for hospital claims and the total hospitalisation cost is the tie strength of a patient with the hospital. To calculate a patient's connectedness with doctors, we divided the total number of doctor-visits (ie, medical claims) by the number of different doctors who visited that patient during their hospitalisation period. For example, during a hospitalisation period, a patient (say Ms X) has 28 medical claims from four doctors to HCF that cost HCF an amount of $4200. Also, the hospital makes another $5500 claim to HCF for its other medical services to that patient. In addition, there is an amount of $400 for ancillary claims to HCF for that patient. Therefore, the total expense to HCF for that patient is $10,000 ($4200 + $ 5500 + $400= $10,000). The degree centrality value is 28. The patient tie strength with hospital is 5.5 (the ratio of $5500 and $10000). The number of visits per doctor (ie, patient connectedness with doctor) is seven (28 divide by four). This is illustrated in Figure 4.

An examination of degree centrality, tie strength and connectedness of PCCN for THR dataset reveals common distributions for all of them, which follow a non-normal curve. Each histogram graph consists of a centralised score having a small tapered skew either to the left or to the right. These distributions are against a line indicating that a non-normal and non-parametric statistical test is required in order to test their correlation with LOS. The Spearman test, which is a standard alternative to the parametric Pearson test, is a non-parametric method for correlation testing to quantify association between two continuous scores. [30] For this reason, we conducted Spearman tests to examine relations between independent and dependent variables of the coordination performance model for PCCN.

Figure 4: Example of the calculation of network attributes for a patient (Ms X)

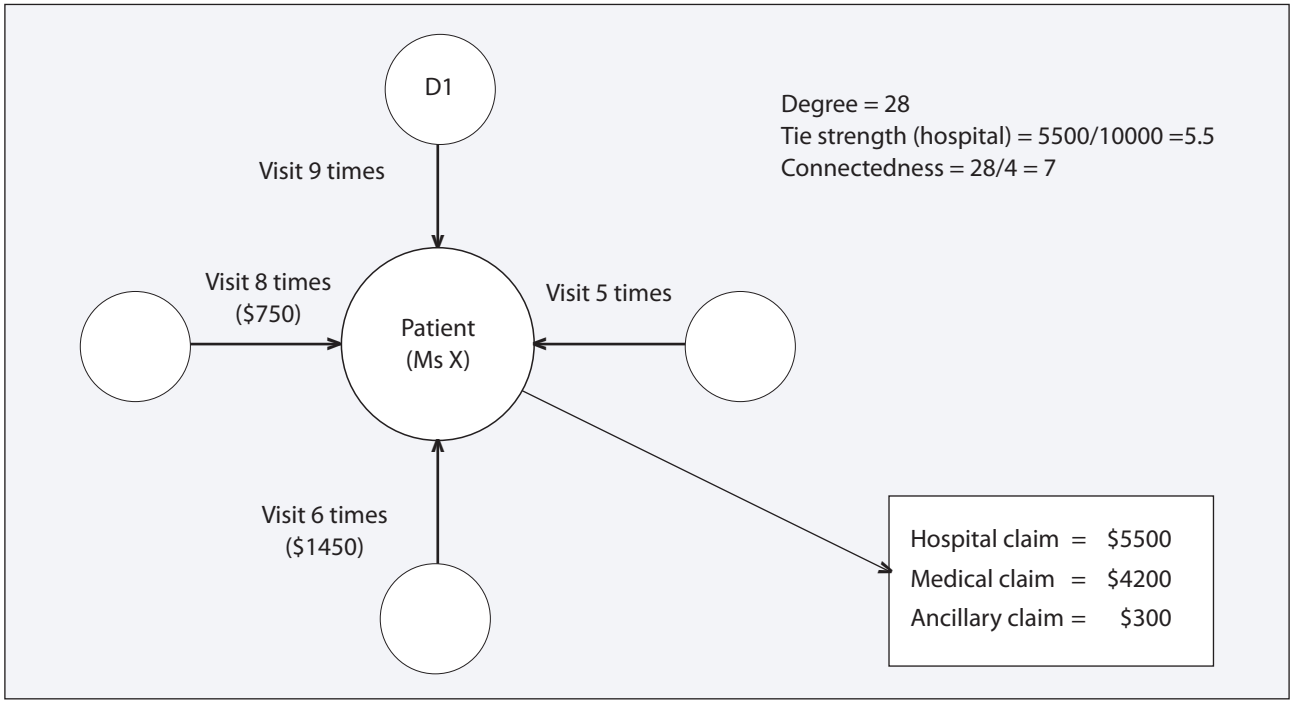


Table 2: Correlation of coefficient values between independent and dependent variables of PCCN model

	LENGTH OF STAY (LOS)
Degree	0.753**
Tie Strength (Hospital)	0.295**
Connectedness	0.663**

*Note**: Correlation is significant at the 0.01 level (2-tailed)*

3.4 Findings from Patient-Centric Care Network model

According to the Spearman correlation coefficient values of Table 2, all three independent variables of the coordination performance model of PCCN show positive correlations with the single dependent variable.

3.4.1 Causal effect

There is a positive correlation between degree centrality and patient hospital LOS.

We found a positive correlation (rho = 0.763, p<0. 01 at 2-tailed) between degree centrality and LOS. The increased number of doctor-visit to patients made their inpatient stay in hospital longer. Depending on the patients' clinical condition, hospitals may need to invite specialist doctors from outside to visit their patients. As those specialist doctors are very much in demand, patients need to wait for their available time, which in turn extends their LOS. Furthermore, there could be interdependency between doctor-visits to patient. For example, before surgery, surgeons have to wait for all required medical tests to be completed by doctors and other medical staff. For these kinds of interdependency, the dependent doctors (in this case surgeons) have to wait for patient to be visited by the independent doctor and/or medical staff. This kind of interdependency sometimes makes patient LOS higher.

In PCCN, degree centrality for a patient counts not only the presence of links with doctors but also the weights of all such links. The weight for the link between a patient and a doctor indicates the number of times the patient is visited by that doctor. We summed up weights of all links that a patient had with doctors to quantify degree centrality attribute. This finding therefore suggests that patients need to have less doctor-visits during their hospitalisation period in order to make their hospital LOS shorter. At the same time, assurance that patients receive proper treatment from healthcare providers or hospitals is required. Thus, in order to make patients' LOS shorter, healthcare managers or administrators have to focus on minimising the number of doctor-visits whilst fulfilling patient expectation and providing the right treatment.

There is a positive correlation between tie strength and patient hospital LOS.

We observed a positive correlation between tie strength and LOS (rho = 0.295, p<0.01 at 2-tailed). The more services a patient receives from hospital, the higher the LOS will be for that patient.

The tie strength measure of PCCN reflects the proportion of cost associated with the services provided to patients by healthcare providers or hospitals. We considered hospital claims to measure patients' tie strength with hospital as they cover all types of services such as primary care, pathological test, medical examinations, accommodation, etc that patients receive while hospitalised. A positive correlation between tie strength and LOS conveys the message that less cost for services provided by hospitals makes LOS shorter. Alternatively, if the cost for medical claims (ie, for doctor-visits) increases then the percentage of hospital cost (ie, tie strength) will decrease. Healthcare managers or hospital administrators can do it by emphasising the increased number of doctor-visits to patients. However, then the degree centrality value, which affects LOS positively as discussed in the previous findings, will also increase. Another possible way is to encourage doctors to spend more time with patients during their visits, which would eventually increase the total medical cost because the charge for the doctor-visit to a patient depends on its duration. This will increase the cost for medical claims and eventually reduce the percentage of hospital cost (ie, tie strength). Furthermore, longer doctors' visiting hours will increase patient satisfaction, [31] keep degree centrality value unchanged and decrease patients' tie strength with hospitals – all of these enable hospitals to manage LOS effectively.

There is a positive correlation between connectedness and patient hospital LOS.

We found a positive correlation (rho=0.663, p<0.01 at 2-tailed) between patients' connectedness with doctors and LOS. The connectedness attribute of PCCN implies the average number of doctor-visits to each patient. So, there are two ways to manage connectedness: (i) by controlling the total number of doctor-visit; and (ii) by controlling the involvement of the total number of doctors to patient episodes of care. The positive correlation between degree centrality and LOS (ie, the first causal effect) already discusses the way to restrain LOS by controlling the total number of doctor-visits (ie, the first way). The only option left for the healthcare managers or administrators to manage the connectedness is to control the number of doctor involvements to each patient episode of care. As connectedness correlates positively with LOS, this finding encourages the involvement of more doctors during the episode of patient care in hospital in order to make hospital LOS shorter. However, the chance of medical error in any episode of patient care is high if too many doctors are involved in that episode of treatment. [32] Therefore, if this finding is adopted to reduce hospital LOS, attention has to be given (by healthcare managers or other care administrators) in order to reduce the chance of errors.

3.4.2 Moderating effect

To test the effects of moderating variables, we first clustered our dataset based on those variables. Then we compared the correlation coefficient values between the independent and dependent variables of our proposed model for each cluster. The result is given in Table 3.

Gender Effect: We clustered THR dataset based on patient sex: male and female. Degree, tie strength and connectedness showed strong positive relations with LOS for both clusters. A further investigation of the correlation coefficient values revealed that the female group showed a stronger positive relation for all combinations between independent variables and LOS than the male group.

Patient Age: On the basis of patient age, we clustered the THR dataset in two groups: age group 1 (AG1) and age group 2 (AG2). The average age of all THR patients in our dataset was 58.70 years. All THR patients who were younger than the average age (58.70 years) belonged to AG1 and the rest belonged to AG2. AG1 showed a stronger correlation than AG2 for any combination of independent variables and LOS.

Provider Type: All patient admissions were classified as either public or private depending on the type of healthcare service providers. Although in relation to the health service provider type a strong relation was noted for all combinations of independent network variables and LOS, admissions in private hospitals showed stronger correlation than the admissions in public hospitals.

Discussion and conclusion

In this study, we suggest a social network-based framework to model coordination performance of a group of individuals working in an integrated healthcare environment. Coordination problems can be viewed as the presence of interdependencies among actors within a social network which emerges during the course of attaining a goal or completing a task. We applied SNA and network theory to explore and quantify the position of each actor (or individual) within this network and conceptualised the impact of different network positions of actors on their coordination performance. This proposed framework can be exercised in various settings (eg, inter-departmental collaboration within hospital) of healthcare providers or hospitals to model their coordination performance. SNA measures (eg, degree centrality and closeness centrality) are

Table 3: Correlation of coefficient values (between independent and dependent variables of PCCN model) for different clusters based on socio-demographic characteristics of patient Sex, Age and Provider Type

	LENGTH OF STAY (LOS)					
	SEX		AGE		PROVIDER TYPE	
	MALE	FEMALE	AG1	AG2	PRIVATE	PUBLIC
Degree	0.738**	0.756**	0.771**	0.660**	0.753**	0.728**
Tie Strength (Hospital)	0.258**	0.325**	0.588**	0.143**	0.300**	0.129**
Connectedness	0.655**	0.657**	0.698**	0.553**	0.665**	0.649**

*Note**: Correlation is significant at the 0.01 level (2-tailed)*

considered as independent variables; socio-demographic characteristics (eg, age and sex of patient) are considered as moderating variables; and indices representing coordination performance (eg, patient hospital LOS and patient satisfaction) are utilised as dependent variables in this framework.

We successfully applied the proposed framework to model the coordination performance of patient-centric care network (PCCN). For PCCN, we observed that network attributes of degree centrality, tie strength and connectedness had a positive correlation with hospital coordination performance (ie, LOS). We further found that, for PCCN, socio-demographic characteristics of patient age, patient sex and provider type moderate the relationship between any pair of independent and dependent variables. By combining these two findings, healthcare managers can identify positive attributes of PCCN, which could lead them in designing effective healthcare or hospital settings. Not only that, the current setting of any PCCN can be reviewed and judged against these two findings in order to observe its present state of coordination performance.

The selection of dependent, independent and moderating variables in exploring PCCN using the proposed coordination modeling framework was guided by the research dataset used in this study. We utilised secondary data sources (ie, electronic claim details of the health insurance organisation) in exploring PCCN. We considered only three network measures as independent variables although there are many other network measures (eg, density, betweenness centrality and closeness centrality) that have been used as independent variables by researchers. [15,33] As the dependent variable, we considered only LOS. There are healthcare studies that use LOS as a dependent (or performance indicator) variable; however, those studies consider, in addition to LOS, other possible performance measures (eg, readmission rate, patient satisfaction and mortality). [15,34,35] Similarly, patients' previous medical history could be another moderating variable, which has been used by researchers, [36] to explore healthcare performance. On the other hand, we did not establish either the minimum or maximum threshold for which network attributes no longer provide coordination performance although we showed that attributes of PCCN have an impact on coordination performance.

Competing Interests

The authors declare that they have no competing interests.

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NEW BOOKS

Manual of healthcare leadership: essential strategies for physician and administrative leaders

Lombardi, D. & Slonim, A. (2014)
This book provides a concise discussion of the essential skills physician managers need to master during times of rapid change.
Available for loan to Members

Delivering high performance: The Third generation organisation

Long, D. (2013)
Long's Third Generation Leadership and the Locus of Control focused on individuals' values, world views and the behaviours needed to facilitate leadership in the future.
Available for loan to Members

Healthcare in focus 2013: how does NSW measure up? Annual performance report.

Bureau of Health Information
This publication takes a wide-ranging look at the NSW health system – looking out to see how the state performs in comparison with Australia as a whole and with 10 other countries, and looking in to examine the extent of variation across NSW public hospitals.
Available for loan to Members

Create a great quality system in six months: a blueprint for building the foundations of a great consumer experience.

Balding, C.
SQM explains the 'What and Why'; CGQS describes the 'How To'. Together they provide the framework and information required to build sustainable, effective quality systems and roles that get real results." – back of book
Available for loan to Members

ABORIGINAL HEALTH

National key performance indicators for Aboriginal and Torres Strait Islander primary health care: first national results June 2012 to June 2013

Canberra : Australian Institute of Health and Welfare; 2014
The first national report on the national Key Performance Indicators (nKPIs) data collection captures data from over 200 primary health care organisations that receive funding from the Australian Department of Health to provide services primarily to Aboriginal and Torres Strait Islander people. It presents data for 19 'process of care' and 'health outcomes' indicators which focus on the prevention and management of chronic disease and maternal and child health. The report shows improvements against most of the 'process of care' indicators. It also shows organisations that perform better are spread across different geographic and service delivery environments.
http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129547048

Aboriginal and Torres Strait Islander health organisations: Online Services Report – key results 2012-13

Australian Institute of Health and Welfare; (2014)
This is the latest report on Aboriginal and Torres Strait Islander health organisations, funded by the Australian Government, Department of Health.
http://www.aihw.gov.au/publication-detail/?id=60129548237

Birthweight of babies born to Indigenous mothers

Australian Institute of Health and Welfare; (2014)
This report covers the time period between 2000 and 2011. Between 2000 and 2011, there was a statistically significant decline in the low birthweight rate among Indigenous mothers, and the gap in birthweight between babies born to Indigenous and non-Indigenous mothers declined significantly over this period.
http://www.aihw.gov.au/publication-detail/?id=60129548202

Australian Aboriginal and Torres Strait Islander health survey: biomedical results, 2012-13

Australian Bureau of Statistics (2014)
This publication presents information from the National Aboriginal and Torres Strait Islander Health Measures Survey.
http://www.abs.gov.au/ausstats/abs@.nsf/mf/4727.0.55.003?OpenDocument

Overweight and obesity among Indigenous children: individual and social determinants
Thurber, K., et al.
Australian Healthcare and Hospitals Association (2104)
The authors document the Factors influencing obesity among indigenous children and find that not all are health related.
https://ahha.asn.au/system/files/docs/publications/deeble_issue_brief_no_3_overweight_and_obesity_among_indigenous_children.pdf

The relative effectiveness of Aboriginal Community Controlled Health Services compared with mainstream health service
Mackey, P., et al.
Deeble Institute for Health Policy Research, Australian Healthcare and Hospitals Association (2014)
The authors examine the evidence on the effectiveness of ACCHS found in the academic literature, assesses its quality, and analyse the implications for policy makers.
https://ahha.asn.au/system/files/docs/publications/20140916_deeble_institute_evidence_brief_relative_effectiveness_of_acchs.pdf

A case study in the use of evidence in a changing political context: an Aboriginal and Torres Strait Islander health service re-examines practice models, governance and financing
Gajjar, D., et al
Australian Health Review 2014, 38(4) 383-386
The authors examine the response of the Institute for Urban Indigenous Health (coordinating Aboriginal community controlled health organisations in south-east Queensland) to research evidence as they prioritise and plan services in response to internal (economic and organisational) and external (policy change) factors.
http://www.publish.csiro.au/?paper=AH13221

ACUTE CARE

Initiatives to reduce length of stay in acute hospital settings: a rapid synthesis of evidence relating to enhanced recovery programmes
Paton, F. et al.
Health Services and Delivery Research 2014 DOI: 10.3310/hsdr02210
Though the data is limited, there is evidence to suggest that enhanced recovery programmes may reduce length of patient hospital stay without increasing readmission rates.
http://www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0015/121803/FullReport-hsdr02210.pdf

AGED CARE SERVICES

Aged care in Australia: Part I – policy, demand and funding
Centre of Excellence in Population Ageing Research (CEPAR); 2014
As population ageing means more people will require care and support, this research brief looks at demand and funding of formal and informal care.
http://www.cepar.edu.au/media/127442/aged_care_in_australia_-_part_i_-_web_version_fin.pdf

Aged care in Australia: Part II – Industry and practice
Centre of Excellence in Population Ageing Research (CEPAR); 2014
With population ageing likely to result in more people requiring care, this research brief looks at aged care on the ground by describing care recipients, providers, the workforce, and access and quality issues.
http://www.cepar.edu.au/media/127530/aged_care_in_australia_-_part_ii_-_web_version_fin.pdf

Key directions for the Commonwealth home support programme: basic support for older people living at home: discussion paper
Australia. Department of Social Services; 2014
Sets out the context for the establishment of the Commonwealth Home Support Programme. It briefly discusses the current system of home support programmes for frail, older people, the challenges the system faces, and the need for reform. The paper then flags the key reform directions that are proposed for the Commonwealth Home Support Programme, including the role the Commonwealth Home Support Programme will play in the end-to-end aged care system that the Government is working towards, and then goes on to outline the major changes that clients and the sector can expect in the transition from the present arrangements to the new.
http://www.dss.gov.au/sites/default/files/documents/05_2014/final_key_directions_for_the_commonwealth_home_support_programme_discusison_paper.pdf

Patterns in use of aged care: 2002-03 to 2010-11
Australian Institute of Health and Welfare; (2014)
This report illustrates that there has been considerable changes in the use of aged care services in 8 years.
http://www.aihw.gov.au/publication-detail/?id=60129548008

Hospitalised injuries in older Australians: 2011-12
Australian Institute of Health and Welfare; (2014)
The vast majority of admissions relate to falls.
http://www.aihw.gov.au/publication-detail/?id=60129547875

EMERGENCY SERVICES

Expanding emergency department capacity: a multisite study
Crilly, J. et al.
Aust Health Rev. 2014; 38(3):278-287
This study demonstrates that an increase in ED capacity has a positive impact on mortality outcomes within a health service area.
Held at ACHSM Library

California emergency department closures are associated with increased inpatient mortality at nearby hospitals
Liu, C. et al.
Health Affairs. 2014; 33(8):1323-9.
This study showed that ED closures have ripple effects on surrounding hospitals resulting in increased mortalities.
Held at ACHSM Library

Enhancing Prehospital Emergency Care
Mate K. & Williams D.
Healthcare Executive 2014, 29(5):64-67
Earlier interventions (prior to the patent entering the hospital system) can positively affect downstream patient outcomes and costs of care.
http://www.ihi.org/resources/Pages/Publications/EnhancingPrehospitalEmergencyCare.aspx?utm_campaign=tw&utm_source=hs_email&utm_medium=email&utm_content=14143501&_hsenc=p2ANqtz-8t2CZuZPM1weP8KdJsIYipKIS-E8EhF_s-sTfR6RKaDP_fGYzdSnpWpznuQatXpPc51jDoAHZO6GD3B-Zb03JQPYvPhkrUsMtLMC3Rj8-9v9qVeu0&_hsmi=14143501

EVIDENCE-BASED HEALTHCARE SERVICES

Evidence for Success: The guide to getting evidence and using it
Knowledge Translation Network
Edinburgh: Evaluation Support Scotland, 2014
A step-by-step guide to support organisations use evidence to influence policy and practice.
http://www.evaluationsupportscotland.org.uk/media/uploads/resources/ess-evidenceforsuccess-weblinked.pdf

GOVERNANCE

Population health improvement: a community health business model that engages partners in all sectors
Kindig, D.A et al.
Frontiers of health services management. 2014. 30(4): 3-20
This article reviews the recent issue of population health and calls for new forms of collaboration within communities to address the breadth of factors affecting the health status of residents that are beyond the purview of doctors or hospitals alone.
Held at ACHSM Library

Governance, transparency and alignment in the Council of Australian Governments (COAG) 2011 National Health Reform Agreement
Veronesi, G. et al.
Australian Health Review. 2014. 38(3) 288-294
It is suggested that the NHRA falls short of adequately supporting integration between primary, secondary and tertiary health care provision and facilitating greater integration in chronic disease management in primary care. Successfully addressing this will unlock further value from the reforms.
Held at ACHSM Library

HEALTH CARE (AUS)

Developing a good practice model to evaluate the effectiveness of comprehensive primary health care in local communities
Lawless, A., et al.
BMC Family Practice 2014, 15:99
The study describes a model developed in collaboration with Australian primary healthcare services that would enable evaluation of comprehensive primary health care services in their entirety.
http://www.biomedcentral.com/1471-2296/15/99

Advance care directives
Roth, Lenny;
NSW Parliamentary Research Service; May 2014
This paper summarises policies, and public debates, about end-of-life care in New South Wales.
https://www.parliament.nsw.gov.au/prod/parlment/publications.nsf/key/AdvanceCareDirectives/$File/Advance+Care+Directives.pdf

Exploring healthcare variation in Australia: analyses resulting from an OECD study
Australian Commission on Safety and Quality in Health Care and Australian Institute of Health and Welfare; 2014
This paper aims to stimulate a national discussion on healthcare variation, particularly how to determine which variation is unwarranted and how any unwarranted variation can be reduced. It is also a starting point for more detailed work aimed at identifying unwarranted practice variation in a range of condition, treatment and population groups.
http://www.safetyandquality.gov.au/wp-content/uploads/2014/05/Exploring-Healthcare-Variation-in-Australia-Analyses-Resulting-from-an-OECD-Study.pdf

Healthcare in focus 2013: how does NSW measure up? Annual performance report
Chatswood : Bureau of Health Information; 2014
http://bhi.nsw.gov.au/__data/assets/pdf_file/0008/216971/Main-report_HealthcareInFocus-2013.pdf

Healthy Communities: Child and maternal health in 2009–2012
National Health Performance Authority (2014)
A revealing report that provides data at the Medicare Local level for infant and young child mortality, low birth weight, first trimester antenatal visits, and smoking during pregnancy.
http://www.myhealthycommunities.gov.au/Content/publications/downloads/NHPA_HC_Report_Child_and_maternal_health_July_2014.pdf

Mortality inequalities in Australia 2009–2011
Australian Institute of Health and Welfare; (2014)
This report illustrates the variations in health care quality across Australia.
http://www.aihw.gov.au/publication-detail/?id=60129548021

Does size matter? Population projections 20 and 50 years from 2013: 4102.0 - Australian Social Trends
Australian Bureau of Statistics (2014)
Various population projections are presented highlighting the trend to an ever 'aging' population.
http://abs.gov.au/ausstats/abs@.nsf/Lookup/4102.0main+features82014

What can we learn from other countries' health systems?
Duckett, S.
The Conversation, Friday 5 September (Web)
http://grattan.edu.au/news/what-can-we-learn-from-other-countries-health-systems/

HEALTH CARE (OTHER THAN AUS)

Obesity update June 2014

OECD Directorate for Employment, Labour and Social Affairs, June 2014

The majority of the population, and one in five children, are overweight or obese in the OECD area. The obesity epidemic has spread further in the past five years, but rates have been increasing at a slower pace than before. A growing number of countries have adopted policies to prevent obesity from spreading further. Evaluations of the effectiveness of these initiatives are only beginning to emerge.

Held at ACHSM Library

The NHS productivity challenge: experience from the front line

Appleby, John;

The King's Fund; May 2014

Since the 2008 economic crisis, Britain's National Health Service (NHS) has operated under significant financial pressures, with significant impact on smaller healthcare providers. To gain insight into the way downstream NHS organizations are coping with funding and productivity challenges, this study examined how six local providers set targets for cost and productivity improvements during a period of financial restraint.

http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/the-nhs-productivity-challenge-kingsfund-may14.pdf

The withdrawal of the Liverpool Care Pathway in the United Kingdom: what are the implications for Australia?

Raymond J Chan, Joan Webster, Jane Phillips and David C Currow

Medical Journal of Australia 2014; 200 (10): 573-573

The Liverpool Care Pathway for the Dying Patient (LCP) was designed in the United Kingdom in the 1990s to guide care for people with cancer who were in their last days of life and expected to die in hospital. Across Australia, several end-of-life care pathways (EOLCPs) have been adapted from the LCP. In 2013, in response to substantial concerns raised by the public and by health professionals, the UK government commissioned an independent review of the LCP. As a result of the review, the UK government decided to phase out the LCP nationally over the following 6–12 months. What are the implications of these findings for our National Palliative Care Strategy?

Held at ACHSM Library

Financial benefits of integration: a case of wishful thinking?

Vize, R.

BMJ 2014; 348: g3661

Billions are about to be spent on integrated care with the aim of enabling the NHS to do more with less in future. But, although there is evidence that patients benefit, Richard Vize finds it is far from clear that integrating care will ever save money.

Held at ACHSM Library

Long-Term Effect of Hospital Pay for Performance on Mortality in England

Kristensen, S. et al.

N Engl J Med 2014; 371:540-548

This study looks at the long-term effect of hospital pay-for-performance on mortality and found that the initial improvements in mortality were not maintained.

Held at ACHSM Library

Economic crisis, health systems and health in Europe: impact and implications for policy

Thomson, S., et al.

World Health Organization 2014 (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

The authors document the impact of the economic crisis in Europe on health policy from 2008 to 2013.

http://www.euro.who.int/en/about-us/partners/observatory/policy-briefs-and-summaries/economic-crisis,-health-systems-and-health-in-europe-impact-and-implications-for-policy

Current Trends in Health Facility Planning, Design, and Construction

Beale, C., et al.

Frontiers of Health Services Management 2014, 31(1):3-17

In this article the authors explore the current trends in health facility planning, design and construction with a focus on buildings that serve as venues for healthcare services that range from prevention to critical care.

Held at ACHSM Library

The Hospital of the Future: The Vision, the Journey, the Reality

Covert, M.

Frontiers of Health Services Management 2014, 31(1):18-30

Documents the 'journey' to build a new hospital which incorporates elements associated with the concept of "Fable Hospital" – evidence based - design.

Held at ACHSM Library

Benefits of a Co-design Model in Healthcare Don't End with the New Building

Stacey, R., et al.

Frontiers of Health Services Management 2014, 31(1):31-38

Held at ACHSM Library

Patient Protection, Affordable Care, and Accountable Design

Taylor, E., et al.

Frontiers of Health Services Management 2014, 31(1):39-46

Held at ACHSM Library

Evidence-Based Design and Organizational Structure

Callahan, C., et al.

Frontiers of Health Services Management 2014, 31(1):47-54

Held at ACHSM Library

Predictors of use of infection control precautions for multiresistant gram-negative bacilli in Australian hospitals: Analysis of a national survey

Rogers, B., et al

American Journal of Infection Control 2014, 42(9): 963–969

A national survey of infection control practices amongst adult acute-care hospitals in Australia was carried out. It was found that infection control management of multiresistant gram-negative bacilli varied considerably across the Australian hospitals surveyed.

Held at ACHSM Library

Implementing electronic health records in hospitals: a systematic literature review
Boonstra, A., et al.
BMC Health Services Research 2014, 14:370
The implementation is a complex undertaking. This systematic review reveals reasons for this complexity and presents a framework of 19 interventions that can help overcome typical problems in EHR implementation.
http://www.biomedcentral.com/1472-6963/14/370/abstract

Environmental sustainability in hospitals – a systematic review and research agenda
McGain, F. & Naylor, C.
Journal of Health Policy & Services 2014, 19: 245-252
This study showed that there remain significant gaps in the evidence base on hospital sustainability.
Held at ACHSM Library

Medical service redesign shares the load saving 6000 bed days and improving morale
Toomath, R., et al
Internal Medicine Journal, 2014 Aug;44(8):785-90.
The authors document how a New Zealand hospital split it's staff into two teams to treat long-stay and short stay patents.
Held at ACHSM Library

Emergency department patient safety incident characterization: an observational analysis of the findings of a standardized peer review process
Jepson, Z.K., et al.
BMC emergency medicine. 2014;14(1):20.
http://dx.doi.org/10.1186/1471-227X-14-20

HEALTH FACILITIES PLANNING & DESIGN

Environmental Sustainability in Hospitals: The Value of Efficiency
Health Research & Educational Trust. Chicago, IL: Health Research & Educational Trust, 2014.
Hospitals and care systems increasingly are looking for ways to improve efficiency and reduce overall costs while also improving the overall patient experience. Sustainability initiatives offer significant environmental and financial benefits for organizations – benefits that will help hospitals and care systems thrive now and in the future. This guide details the path that executives can take to set the course for their organizations.
http://www.hpoe.org/environmentalsustainability

Designing the future: care closer to home
Maber Architects
Health estate journal. March 2014, 68(3): 45-48
The Corby Urgent Care Centre provides a combination of primary and emergency care facilities in a community-focused building.
Held at ACHSM Library

Creating interiors that encourage recovery
Campbell, Paul
Health estate journal. March 2014, 68(3): 50-52
The interior of a hospital can have a big impact on patient well-being. This paper looks at the evidence that being treated in an environment in which they felt comfortable, led to significant improvement in patient recovery.
Held at ACHSM Library

6 Steps To Integrate Research Into Healthcare Design
Nanda, U, et al.
Healthcare design. 2014.
Research in practice is a commitment to better healthcare design, by informing the decisions and measuring impact after occupancy. The goal of research is rooted in real-world priorities to create a better environment, enhance the human experience, enable a better quality of life, and provide value to all stakeholders by showing a tangible return on investment. Many design firms are instilling a culture of research and a commitment to metrics that matter. The challenge is to integrate research with design, making it part of the process. This paper outlines a six-step process highlighting how research thinking can be incorporated into existing processes to enable designers to target and achieve better outcomes.
http://www.healthcaredesignmagazine.com/article/6-steps-integrate-research-healthcare-design?spMailingID=46118586&spUserID=NTA3NTgxMTIzMjMS1&spJobID=460611611&spReportId=NDYwNjExNjExS0

Safe and sound: informed design approaches help to prevent patient harm
Eagle, A.
Health facilities management. June 2014; 27(6): 15-19
This article outlines the design process for the University Medical Center of Princeton at Plainsboro (N.J.) Goals included reducing errors, falls and infections. Safety was the guiding principle for the design.
Held at ACHSM Library

Data-driven planning: statistical research and lean concepts help determine space needs
Clayman, S.
Health facilities management. June 2014; 27(6): 26- 30.
Determining space needs can be the most critical step in any health facility design project. Data can assist with the design phase.
Held at ACHSM Library

Protecting patients, staff, and property
Hughan, T.
Health estate: journal of the Institute of Healthcare Engineering and Estate Management. June 2014. 68(6): 51-56.
This article discusses how both accessibility and whole-life costing must be taken into consideration when implementing security measures to ensure the highest level of patient safety and quality of care.
Held at ACHSM Library

Best practice in the design of residential environments for people living with dementia and sight loss
Thomas Pocklington Trust
London: The Trust, 2014.
This research reveals how clever design of living spaces can improve the lives of people who are living with two common conditions – dementia and sight loss. The evidence-based guidelines help make homes more accessible for people with both conditions and were developed after researchers gathered the views and experiences of people living with dementia and sight loss, their families and carers and a wide range of professionals.
http://www.pocklington-trust.org.uk/Resources/Thomas%20Pocklington/Documents/PDF/Research%20Publications/rf-42-design-for-dementia-and-sight-loss.pdf?dm_i=21A8,2JPUR,FLXDHM,9AY7L,1

Setting priorities
Skolnick, C.
Health facilities management. 2014. 27(1): 21-25.
Many decisions need to be made to ensure that system resources are allocated appropriately and that strategic and facilities needs are met. To help with these decisions, a completed strategic and master facility plan portfolio, scoring matrix and capital request cash map are tools that can be utilised.
Held at ACHSM Library

Improving project efficiency
Austin, M.
Health Facilities Management 2014 27(7):30-33
Looks at the benefits of utilising prefabrication and modularization techniques in the construction of hospitals.
Held at ACHSM Library

Treating Medical Waste: Enhancements help autoclaves answer today's challenges
Lorenzi, N.
Health Facilities Management 2014 27(7):41-44
A general review of the usage of medical waste autoclaves.
Held at ACHSM Library

Making the right decisions about new technologies: A perspective on criteria and preferences in hospitals
Gurtner, S.
Health Care Manage Rev. 2014 39(3):245-254.
This research adds to the understanding of decision making in hospitals. Wrong decisions can result in a waste of resources and ultimately have a negative impact on patient outcomes.
Held at ACHSM Library

HOSPITALS

Using capacity alert calls to reduce overcrowding in a major public hospital
Khanna, S. et al.
Aust Health Rev. 2014 38(3):318—324
This study explores and demonstrates that the use of capacity alert calls can effectively manage hospital overcrowding.
Held at ACHSM Library

A Compendium of Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals: 2014 Updates
Yokoe, D. et al.
American Journal of Infection Control 2014 42(8): 820–828
This is an update to the 2008 publication with collaboration from the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), the American Hospital Association (AHA), the Association for Professionals in Infection Control and Epidemiology (APIC), and The Joint Commission, with major contributions from representatives of a number of organizations and societies with content expertise, including the Centers for Disease Control and Prevention (CDC), the Institute for Healthcare Improvement (IHI), the Pediatric Infectious Diseases Society (PIDS), the Society for Critical Care Medicine (SCCM), the Society for Hospital Medicine (SHM), and the Surgical Infection Society (SIS).
Held at ACHSM Library

Cardiopulmonary arrest and mortality trends, and their association with rapid response system expansion
Chen, J. et al.
Med J Aust 2014 201(3): 167-17
This study shows that the introduction of RRSs has been associated with a reduction of IHCA related deaths.
https://www.mja.com.au/journal/2014/201/3/cardiopulmonary-arrest-and-mortality-trends-and-their-association-rapid-response

Upgrading ORs without missing a beat
Hoffman, K.
Healthcare Design 2014 August:48-51
From MEP infrastructure to appropriate phasing, there are plenty of things to consider when undergoing an OR renovation.
http://mydigimag.rrd.com/publication/?i=221057&p=50

Staff Support: Designing Optimal Healthcare Work Environments
Healthcare Design 2014 21 July
Well planned and designed staff areas can increase productivity and morale in a hospital setting.
http://www.healthcaredesignmagazine.com/article/staff-support-designing-optimal-healthcare-work-environments?spMailingID=46669564&spUserID=MTAxODYwOTA2NTYxS0&spJobID=501039902&spReportId=NTAxMDM5OTAyS0

Australia's hospital statistics 2012-13
Canberra : Australian Institute of Health and Welfare; 2014
Australian hospital statistics 2012-13 presents a detailed overview of Australia's public and private hospitals. In 2012-13, there were about 9.4 million separations from hospitals, including: 5.2 million same-day acute separations; 3.7 million overnight acute separations; about 450,000 sub-acute and non-acute separations. There were also 7.9 million non-admitted patient emergency services and more than 46 million outpatient services provided by public hospitals.
http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129547000

Hospital Quarterly: Performance of NSW public hospitals. January to March 2014
Hospital Quarterly provides information about patient use and public hospital performance in NSW. Each issue contains three modules that report on admitted patients, emergency department performance and the elective surgery procedures performed for that quarter.
http://www.bhi.nsw.gov.au/publications/hospital_quarterly_nsw/hospital_quarterly_report_vol_5_issue_1

INFORMATION AND COMMUNICATION TECHNOLOGY

A Comparison Of How Four Countries Use Health IT To Support Care For People With Chronic Conditions
Adler-Milstein, J., et al.
Health Affairs 2014, 33(9): 1559-1566
The authors report that common themes emerged and suggest that although the four nations have different health care systems and ICT strategies, all of them face a similar set of challenges, creating an opportunity for cross-national learning.
Held at ACHSM Library

OPTIMIZING VALUE(S) IN HEALTH IT
Birk, S.
Healthcare Executive 2014, 29(5):11-20
Topics covered include how health IT can eliminate manual processes and apply best practices through clinical decision support and analytical algorithms, lessons learned from health IT in the past 10-15 years.
Held at ACHSM Library

Failing to CONNECT
Belardi, L.
Australian Ageing Agenda – Technology Review 2014, (7):10-12
The author examines some of the drivers and barriers to telehealth use in aged care.
Held at ACHSM Library

INNOVATION

Collective genius
Hill, L. et al.
Harvard business review. June 2014; 92(6): 94-102.
Smart leaders create a community that is both willing and able to innovate. They don't set a vision and motivate others to follow.
Held at ACHSM Library

The new patterns of innovation: how to use data to drive growth
Parmar, R. et al.
Harvard business review. Jan-Feb 2014; 92(1/2): 86-95
How examining the data and analytical tools you already have can generate new business ideas and new business models.
Held at ACHSM Library

Lessons From Eight Countries On Diffusing Innovation In Health Care
Keown, O., et al.
Health Affairs 2014, 33(9): 1516-1522
The authors describe the front-line cultural dynamics that must be fostered to achieve cost-effective and high-impact transformation of health care, and argue that there is a necessity for greater focus on vital, yet currently underused, organizational action to support the adoption of innovation.
Held at ACHSM Library

LEADERSHIP / MANAGEMENT

Being a manager, becoming a professional? A case study and interview-based exploration of the use of management knowledge across communities of practice in health-care organisations
Bresnan M. et al.
Health Services and Delivery Research. 2014. 2(14)
In this study the authors sought to investigate how NHS middle managers encounter, adapt and apply management knowledge in their working practices, and to examine the factors [particularly organisational context, career background and networks of practice (NoPs)/communities of practice (CoPs)] which may facilitate or impede the acceptance of new management knowledge and its integration with practice in health-care settings.
www.journalslibrary.nihr.ac.uk/hsdr/volume-2/issue-14

Building a leadership team for the health care organization of the future
Spencer Stuart for Health Research & Educational Trust; April 2014
This report examines the leadership, talent and organizational models of hospitals and care systems. A survey of senior hospital executives and interviews with 25 leaders, undertaken as part of the report, reveals a focus on team building at US healthcare organizations to achieve strategic priorities.
https://www.spencerstuart.com/~/media/PDF%20Files/Research%20and%20Insight%20PDFs/HealthcareLeadershipTeamAHA.pdf

The Global Leadership Competencies We Aren't Teaching
Parrey, D.
Chief Learning Officer executive briefings.2014: 12(65). Online article
Change in the business environment moves at lightning speed. The Institute for Corporate Productivity's 2013 Global Leadership Development Survey, conducted in collaboration with the American Management Association and Training magazine, examined 26 leadership competencies and their inclusion or exclusion in global leadership development programs for 1,200 global participants. The survey found that many programs are not keeping pace with what's most critical.
http://www.clomedia.com/articles/5669-the-global-leadership-competencies-we-arent-teaching

Leadership: easier said than done
Zheltoukhova, Ksenia;
London : Chartered Institute of Personnel and Development; May 2014
In this report we are looking in more detail at the barriers to leadership and good people management in practice. Our insights are based on over 120 interviews and focus groups with managers, employees and HR practitioners in seven large organisations.
http://www.cipd.co.uk/binaries/leadership%28web%29.pdf

Successful Strategic Planning for a Reformed Delivery System
Zuckerman, Alan M.
Journal of Healthcare Management. 2014, 59 (3): 168-172
This paper discusses a framework to identify major environmental challenges affecting most health care providers today, suggests new imperatives needed to meet these challenges and offers an illustrative example. It details some of the challenges that call into question the value of strategic planning in an environment characterized by uncertainty and change. He also advises that in the rapidly changing healthcare environment, strategic management is an increasingly important discipline.
Held at ACHSM Library

Engaging doctors in the health care revolution
Lee, T. et al.
Harvard business review. June 2014; 92(6): 104-111.
To help health care leaders engage physicians in the pursuit of their organizations' greater goals, a framework is suggested based on the writings of the economist and sociologist Max Weber, who described four motivations that drive social action Adapted for health care professionals, these are: shared purpose, self-interest, respect, and tradition. Leaders can use these levers to earn doctors' buy-in and bring about the change the system so urgently needs.
Held at ACHSM Library

Creating and sustaining value: Building a culture of continuous improvement
Chattergoon, S. et al.
Healthcare Management Forum 27(1): pp. 93-98
Documents how a culture of continuous improvement was able to achieve the lowest Emergency Department wait times for admitted patients in its local health integration network and reduce length of stay for patients with chronic obstructive pulmonary disease by 46%.
http://www.healthcaremanagementforum.org/article/S0840-4704(13)00167-1/abstract

Leading Innovation is the Art of Creating 'Collective Genius'
Working Knowledge, Harvard Business School
Many can be inspirational leaders; many might be creative innovators – what makes an innovator leader? 16 business innovators share their collected wisdom.
http://hbswk.hbs.edu/item/7431.html

Building Collaborative Teams: A workshop guide for service managers and facilitators
NHS Improving Quality (2014)
Designed as a 'getting started' guide for managers working to bring different teams together containing tools and exercises to help team members better understand each other's role, attitude and values.
http://www.icase.org.uk/pg/cv_content/content/view/134161/network?cindex=4

Evidence-Based Health Care Management What Is the Research Evidence Available for Health Care Managers?
Jaana, M., et al
Eval Health Prof, September 2014, (37)3:314-334
A scoping review of systematic reviews (SRs) and meta-analyses (MAs) was carried out to determine the availability and accessibility of evidence for health care managers.
Held at ACHSM Library

The Reason Your Team Won't Take Risks
Ashkenas, R. & Bodell, L.
HBR Blog Network (2014)
http://blogs.hbr.org/2014/09/the-reason-your-team-wont-take-risks/?utm_source=newsletter_technology&utm_medium=email&utm_campaign=technology092012&cm_ite=Technology-091614+%281%29&cm_lm=library%40achsm.org.au&referral=00208&cm_ven=Spop-Email&cm_mmc=email-_-newsletter-_-technology-_-technology092012

Teams, tribes and patient safety: overcoming barriers to effective teamwork in healthcare
Weller, J., et al.
Postgraduate Medical Journal 2014, 90(1061):149-54.
The authors explore the some of the reasons team work can breakdown in the healthcare setting and make suggestions on how this might be avoided.
Held at ACHSM Library

PATIENT CENTRED CARE

Do Interventions Designed to Support Shared Decision-Making Reduce Health Inequalities? A Systematic Review and Meta-Analysis.
Durand, M. A., et al.
PLoS ONE 2014,9(4):e94670
Following the review of the literature the authors report that shared decision-making interventions do significantly improve outcomes for disadvantaged patients.
http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0094670

PATIENT SAFETY

Patient empowerment: for better quality, more sustainable health services globally: report
London : All Party Parliamentary Group (APPG) on Global Health; May 2014
This report highlights some of the lessons and examples from this increasingly global patient empowerment movement. The primary focus is on the role of individuals in their own healthcare, although overlap with the equally important issues of public involvement in health and empowerment in social care are recognised.
http://www.appg-popdevrh.org.uk/APPG%20Patient%20Empowerment%20Report.pdf

Registries for evaluating patient outcomes: a user's guide.
Gliklich, R;
Outcome DEcIDE Center for Agency for Healthcare Research and Quality; April 2014
Volume 1 includes sections on creating registries, legal and ethical considerations for registries, and operating registries.
http://www.effectivehealthcare.ahrq.gov/ehc/products/420/1897/registries-guide-3rd-edition-vol-1-140430.pdf
Volume 2 includes sections on technical, legal, and analytical considerations for combining registry data with other data sources, and special applications in patient registries.
The earlier editions figured in the development of the Australian Operating Principles for Australian Clinical Quality Registries published by the Commission.
http://www.effectivehealthcare.ahrq.gov/ehc/products/420/1897/registries-guide-3rd-edition-vol-2-140430.pdf

OECD health-care quality indicators for Australia 2011-12
Canberra : Australian Institute of Health and Welfare; 2014
This report summarises information Australia provided in 2013 to the Organisation for Economic Co-operation and Development's Health Care Quality Indicators 2012-13 data collection and compares data supplied by Australia in 2013 to data Australia supplied in previous years, and to data reported by other OECD countries in the OECD's Health at a glance 2013: OECD indicators.
http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129547040

'Between the flags': implementing a rapid response system at scale
Hughes, C;
BMJ Quality and Safety doi:10.1136/bmjqs-2014-002845
While many hospitals are implementing rapid response systems (RRSs) to attend to deteriorating patients in a systematic way, there is little documented evidence on system-wide approaches to adopting RRSs. Here, we report on an initiative which enrolled 220 hospitals in New South Wales, Australia. The 'between the flags' approach was modelled on Australia's surf lifesaving experience, where qualified lifesavers perform thousands of rescues each year. Patients in hospitals who are identified as being 'between the flags' are given special attention, just like beach goers.
http://qualitysafety.bmj.com/content/early/2014/04/16/bmjqs-2014-002845.full.pdf+html

POLICY DEVELOPMENT

Can we improve the health system with pay-for-performance?
Partel, Krister;
Deeble Institute for Health Policy Research; 2014
Outlining Australian and international experiences with pay-for-performance, the brief unpacks the latest research evidence and implications for policymakers.
http://ahha.asn.au/publication/issue-briefs/can-we-improve-health-system-pay-performance

Translating Research For Health Policy: Researchers' Perceptions And Use Of Social Media
Grande, D. et al.
Health Affairs. 2014. Online before print. doi: 10.1377/hlthaff.2014.0300
The communication gap between researchers and policy makers will need to be narrowed to promote policies informed by evidence. Social media represent an expanding channel for communication. Academic journals, public health agencies, and health care organizations are increasingly using social media to communicate health information. Researchers will need evidence-based strategies, training, and institutional resources to use social media to communicate evidence.
Held at ACHSM Library

Exploring social capital: as concept and practice in Australian public health policies and programs
Arthurson, Kathy;
Australian Journal of Public Administration: 2014, 73, Number 1 - March
This paper explores how social capital is understood as a concept and used in practice for guiding ploicy development and program delivery in South Australian public health programs.
Held at ACHSM Library

RURAL HEALTH

Fly-in fly-out/drive-in drive-out practices and health service delivery in rural areas of Australia
Erny-Albrecht, Katrina;
Adelaide : Primary Health Care Research & Information Service (PHCRIS); March 2014
This Policy Issue Review investigates claims that Fly-in Fly-out/ Drive-in Drive-out (FIFO/DIDO) groups are placing a burden on Australian rural health care services.
http://www.phcris.org.au/phplib/filedownload.php?file=/elib/lib/downloaded_files/publications/pdfs/phcris_pub_8425.pdf

Ensuring that new Primary Health Networks will work well in rural and remote areas. Discussion paper.
National Rural Health Alliance.
The Alliance has published a Discussion Paper on the importance of the forthcoming transition from 61 Medicare Locals to a small number of Primary Health Networks.
http://www.ruralhealth.org.au/document/ensuring-new-primary-health-networks-will-work-well-rural-and-remote-areas-discussion-paper

The value of best-practice guidelines for OSCEs in a postgraduate program in an Australian remote area setting
Jeffrey CA. et al.
Rural Remote Health. 2014 14(3):2469
The value of best practice guidelines (BPG) for postgraduate objective structured clinical examinations (OSCE) in a rural setting is examined and found to be positive.
Held at ACHSM Library

PHCRIS Policy Issue Review: Fly-in Fly-out/ Drive-in Drive-out practices and health service delivery in rural areas of Australia
Erny-Albrecht, K. et al.
PHCRIS Policy Issue Review. Adelaide: Primary Health Care Research & Information Service
This report examines the impact of FIFO/DIDO workers on rural/remote health services.
http://www.phcris.org.au/publications/policyreviews/report.php?id=8425

Extrinsic and intrinsic factors impacting on the retention of older rural healthcare workers in the north Victorian public sector: a qualitative study
Warburton J, Moore ML, Clune SJ, Hodgkin SP.
Rural and Remote Health 2014 14: 2721. (Online)
This study provides insight into the factors that affect retention of staff in a rural setting.
http://www.rrh.org.au/articles/subviewnew.asp?ArticleID=2721

E-Health readiness in outback communities: an exploratory study
Schwarz, F., et al.
Rural and Remote Health 2014, 14: 2871.
The aim of this study was to explore the readiness of the remote population of far-west New South Wales to take up e-health innovations.
http://www.rrh.org.au/articles/showarticlenew.asp?ArticleID=2871

What core primary health care services should be available to Australians living in rural and remote communities?
Thomas, S., et al
BMC Family Practice 2014, 15:143
The authors identify a list of primary health care services that consumers in rural and remote communities can expect to access.
http://www.biomedcentral.com/1471-2296/15/143/abstract

Rural outreach by specialist doctors in Australia: a national cross-sectional study of supply and distribution

O'Sullivan, B., et al.

Human Resources for Health 2014, 12:50

The authors conclude that due to the variation in the provision of outreach services there is a need to promote coordinated delivery of services arising from metropolitan and rural locations according to rural and remote health need.

Held at ACHSM Library

Deepening the quality of clinical reasoning and decision-making in rural hospital nursing practice

Sedgwick, MG., et al.

Rural and Remote Health 2014,14: 2858.

The authors report this study supports the accumulating evidence that using clinical simulation and reflective interviewing that emphasize how clinical decisions are made enhances reasoning skills and confidence.

http://www.rrh.org.au/articles/showarticlenew.asp?ArticleID=2858

WORKFORCE PLANNING

Health workforce planning in OECD countries: a review of 26 projection models from 18 countries

Ono, T;

OECD; 2013

This paper reviews the main characteristics and results from 26 health workforce projection models in 18 OECD countries, including Australia. It focuses mainly on physician models, but also includes some nurse models. While many health workforce planning models remain fairly traditional and focus mainly on demographic trends to assess the future supply and demand for doctors and nurses, some of the more elaborated models include a broader range of variables that can be expected to have an impact on future health workforce requirements.

http://www.oecd-ilibrary.org/docserver/download/5k44t787zcwb.pdf?expires=1400639432&id=id&accname=guest&checksum=C97887E430E611769C47897D3B8E2521

Creating a mentally healthy workforce: return on investment analysis

Price Waterhouse Coopers; March 2014

This report outlines the technical background to the return on investment (ROI) analysis for creating a mentally healthy workplace. The aim of this analysis is to estimate the ROI for employers investing in a mentally healthy workplace. Accordingly, the analysis: estimates the cost to employers of mental health conditions estimate s the costs and the ROI for implementing workplace mental health actions using an economic model and simulating different scenarios based on the workplace environment.

http://www.headsup.org.au/docs/default-source/resources/beyondblue_workplaceroi_finalreport_may-2014.pdf

21st century talent spotting

Fernandez-Araoz, C.

Harvard business review. June 2014; 92(6): 46-56.

Business is changing too rapidly to predict what competencies employees will need in even a few years' time. The question is not what skills they now have, but do they have the potential to learn new skills.

Held at ACHSM Library

Health Workforce Australia (Abolition) Bill 2014

Jolly, R.

Bills Digest No. 77, 2013-14 2 June 2014

"The purpose of the Health Workforce Australia (Abolition) Bill is to:
i) Abolish the body Health Workforce Australia (HWA).
ii) Move the functions and programmes of HWA to the Commonwealth Department of Health. HWA was set up under the NPA to establish more effective, streamlined and integrated clinical training arrangements to support workforce reform initiatives, to support health workforce research and planning and to further new workforce models and reforms. . . Stakeholders are concerned that valuable work undertaken by HWA will be discontinued or compromised by its absorption in to the Department of Health.

http://ehln.org/?p=32523#sthash.f8dI02Fa.dpuf

The use of discrete choice experiments to inform health workforce policy: a systematic review

Mandeville, K., et al.

BMC Health Services Research 2014, 14:367

This is the first systematic review of discrete choice experiments in human resources for health.

http://www.biomedcentral.com/1472-6963/14/367/abstract

Building workforce capacity for complex care coordination: a function analysis of workflow activity

Heslop, L., et al.

Human Resources for Health 2014, 12:52

The authors' aim was to develop, map, and analyse workforce functions of a care coordination team. They conclude that extensive practice redesigns should result in increased care coordination capacity and workforce capability.

http://www.human-resources-health.com/content/12/1/52/abstract

Manuscript Preparation and Submission

General Requirements

Language and format

Manuscripts must be typed in English, on one side of the paper, in Arial 11 font, double spaced, with reasonably wide margins using Microsoft Word.

All pages should be numbered consecutively at the centre bottom of the page starting with the Title Page, followed by the Abstract, Abbreviations and Key Words Page, the body of the text, and the References Page(s).

Title page and word count

The title page should contain:

1. **Title**. This should be short (maximum of 15 words) but informative and include information that will facilitate electronic retrieval of the article.
2. **Word count**. A word count of both the abstract and the body of the manuscript should be provided. The latter should include the text only (ie, exclude title page, abstract, tables, figures and illustrations, and references). For information about word limits see *Types of Manuscript: some general guidelines* below.

Information about authorship should not appear on the title page. It should appear in the covering letter.

Abstract, key words and abbreviations page

1. **Abstract** – this may vary in length and format (ie structured or unstructured) according to the type of manuscript being submitted. For example, for a research or review article a structured abstract of not more than 300 words is requested, while for a management analysis a shorter (200 word) abstract is requested. (For further details, see below - Types of Manuscript – some general guidelines.)
2. **Key words** – three to seven key words should be provided that capture the main topics of the article.
3. **Abbreviations** – these should be kept to a minimum and any essential abbreviations should be defined (eg PHO – Primary Health Organisation).

Main manuscript

The structure of the body of the manuscript will vary according to the type of manuscript (eg a research article or note would typically be expected to contain Introduction, Methods, Results and Discussion – IMRAD, while a commentary on current management practice may use a less structured approach). In all instances consideration should be given to assisting the reader to quickly grasp the flow and content of the article.

For further details about the expected structure of the body of the manuscript, see below - Types of Manuscript – some general guidelines.

Major and secondary headings

Major and secondary headings should be left justified in lower case and in bold.

Figures, tables and illustrations

Figures, tables and illustrations should be:

- of high quality;
- meet the 'stand-alone' test;
- inserted in the preferred location;
- numbered consecutively; and
- appropriately titled.

Copyright

For any figures, tables, illustrations that are subject to copyright, a letter of permission from the copyright holder for use of the image needs to be supplied by the author when submitting the manuscript.

Ethical approval

All submitted articles reporting studies involving human/or animal subjects should indicate in the text whether the procedures covered were in accordance with National Health and Medical Research Council ethical standards or other appropriate institutional or national ethics committee. Where approval has been obtained from a relevant research ethics committee, the name of the ethics committee must be stated in the Methods section. Participant anonymity must be preserved and any identifying information should not be published. If, for example, an author wishes to publish a photograph, a signed statement from the participant(s) giving his/her/their approval for publication should be provided.

References

References should be typed on a separate page and be accurate and complete.

The Vancouver style of referencing is the style recommended for publication in the APJHM. References should be numbered within the text sequentially using Arabic numbers in square brackets. [1] These numbers should appear after the punctuation and correspond with the number given to a respective reference in your list of references at the end of your article.

Journal titles should be abbreviated according to the abbreviations used by PubMed. These can be found at: http://www.nlm.nih.gov/bsd/serfile_addedinfo.html. Once you have accessed this site, click on 'Journals database' and then enter the full journal title to view its abbreviation (eg the abbreviation for the 'Australian Health Review' is 'Aust Health Rev'). Examples of how to list your references are provided below:

Books and Monographs

1. Australia Institute of Health and Welfare (AIHW). Australia's health 2004. Canberra: AIHW; 2004.
2. New B, Le Grand J. Rationing in the NHS. London: King's Fund; 1996.

Chapters published in books

3. Mickan SM, Boyce RA. Organisational change and adaptation in health care. In: Harris MG and Associates. Managing health services: concepts and practice. Sydney: Elsevier; 2006.

Journal articles

4. North N. Reforming New Zealand's health care system. Intl J Public Admin. 1999; 22:525-558.
5. Turrell G, Mathers C. Socioeconomic inequalities in all-cause and specific-cause mortality in Australia: 1985-1987 and 1995-1997. Int J Epidemiol. 2001;30(2):231-239.

References from the World Wide Web

6. Perneger TV, Hudelson PM. Writing a research article: advice to beginners. Int Journal for Quality in Health Care. 2004;191-192. Available: http://intqhc.oxfordjournals.org/cgi/content/full/16/3/191 (Accessed 1/03/06)

Further information about the Vancouver referencing style can be found at http://bma.org.uk/about-the-bma/bma-library/library-guide/reference-styles

Types of Manuscript - some general guidelines

1. Analysis of management practice (eg, case study)

Content

Management practice papers are practitioner oriented with a view to reporting lessons from current management practice.

Abstract

Structured appropriately and include aim, approach, context, main findings, conclusions.
Word count: 200 words.

Main text

Structured appropriately. A suitable structure would include:

- Introduction (statement of problem/issue);
- Approach to analysing problem/issue;
- Management interventions/approaches to address problem/issue;
- Discussion of outcomes including implications for management practice and strengths and weaknesses of the findings; and
- Conclusions.

Word count: general guide - 2,000 words.

References: maximum 25.

2. Research article (empirical and/or theoretical)

Content

An article reporting original quantitative or qualitative research relevant to the advancement of the management of health and aged care services organisations.

Abstract

Structured (Objective, Design, Setting, Main Outcome Measures, Results, Conclusions).

Word count: maximum of 300 words.

Main text

Structured (Introduction, Methods, Results, Discussion and Conclusions).

The discussion section should address the issues listed below:

- Statement of principal findings;
- Strengths and weaknesses of the study in relation to other studies, discussing particularly any differences in findings;
- Meaning of the study (eg implications for health and aged care services managers or policy makers); and
- Unanswered questions and future research.
  Two experienced reviewers of research papers (viz, Doherty and Smith 1999) proposed the above structure for the discussion section of research articles. [2]

Word count: general guide 3,000 words.

References: maximum of 30.

NB: Authors of research articles submitted to the APJHM are advised to consult 'Writing a research article: advice to beginners' by Perneger and Hudelson (2004) and available at: http://intqhc.oxfordjournals.org/cgi/content/full/16/3/191 This article contains two very useful tables: 1) 'Typical structure of a research paper' and 2) 'Common mistakes seen in manuscripts submitted to this journal'. [3]

3. Research note

Content

Shorter than a research article, a research note may report the outcomes of a pilot study or the first stages of a large complex study or address a theoretical or methodological issue etc. In all instances it is expected to make a substantive contribution to health management knowledge.

Abstract

Structured (Objective, Design, Setting, Main Outcome Measures, Results, Conclusions).

Word count: maximum 200 words.

Main text

Structured (Introduction, Methods, Findings, Discussion and Conclusions).

Word count: general guide 2,000 words.

As with a longer research article the discussion section should address:

- A brief statement of principal findings;
- Strengths and weaknesses of the study in relation to other studies, discussing particularly any differences in findings;
- Meaning of the study (eg implications for health and aged care services managers or policy makers); and
- Unanswered questions and future research.

References: maximum of 25.

NB: Authors of research notes submitted to the APJHM are advised to consult 'Writing a research article: advice to beginners' by Perneger and Hudelson (2004) and available at: http://intqhc.oxfordjournals.org/content/16/3/191.full This article contains two very useful tables: 1) 'Typical structure of a research paper' and 2) 'Common mistakes seen in manuscripts submitted to this journal'. [3]

4. Review article (eg policy review, trends, meta-analysis of management research)

Content

A careful analysis of a management or policy issue of current interest to managers of health and aged care service organisations.

Abstract

Structured appropriately.

Word count: maximum of 300 words.

Main text

Structured appropriately and include information about data sources, inclusion criteria, and data synthesis.

Word count: general guide 3,000 words.

References: maximum of 50

5. Viewpoints, interviews, commentaries

Content

A practitioner oriented viewpoint/commentary about a topical and/or controversial health management issue with a view to encouraging discussion and debate among readers.

Abstract

Structured appropriately.

Word count: maximum of 200 words.

Main text

Structured appropriately.

Word count: general guide 2,000 words.

References: maximum of 20.

6. Book review

Book reviews are organised by the Book Review editors. Please send books for review to: Book Review Editors, APJHM, ACHSM, PO Box 341, NORTH RYDE, NSW 1670. Australia.

Covering Letter and Declarations

The following documents should be submitted separately from your main manuscript:

Covering letter

All submitted manuscripts should have a covering letter with the following information:

- Author/s information, Name(s), Title(s), full contact details and institutional affiliation(s) of each author;
- Reasons for choosing to publish your manuscript in the APJHM;
- Confirmation that the content of the manuscript is original. That is, it has not been published elsewhere or submitted concurrently to another/other journal(s).

Declarations

1. Authorship responsibility statement

Authors are asked to sign an 'Authorship responsibility statement'. This document will be forwarded to the corresponding author by ACHSM on acceptance of the manuscript for publication in the APJHM. This document should be completed and signed by all listed authors and then faxed to: The Editor, APJHM, ACHSM (02 9878 2272).

Criteria for authorship include substantial participation in the conception, design and execution of the work, the contribution of methodological expertise and the analysis and interpretation of the data. All listed authors should approve the final version of the paper, including the order in which multiple authors' names will appear. [4]

2. Acknowledgements

Acknowledgements should be brief (ie not more than 70 words) and include funding sources and individuals who have made a valuable contribution to the project but who do not meet the criteria for authorship as outlined above. The principal author is responsible for obtaining permission to acknowledge individuals.

Acknowledgement should be made if an article has been posted on a Website (eg, author's Website) prior to submission to the Asia Pacific Journal of Health Management.

3. Conflicts of interest

Contributing authors to the APJHM (of all types of manuscripts) are responsible for disclosing any financial or personal relationships that might have biased their work. The corresponding author of an accepted manuscript is requested to sign a 'Conflict of interest disclosure statement'. This document will be forwarded to the corresponding author by ACHSM on acceptance of the manuscript for publication in the APJHM. This document should be completed and signed and then faxed to: The Editor, APJHM, ACHSM (02 9878 2272).

The International Committee of Medical Journal Editors (2006) maintains that the credibility of a journal and its peer review process may be seriously damaged unless 'conflict of interest' is managed well during writing, peer review and editorial decision making. This committee also states:

'A conflict of interest exists when an author (or author's institution), reviewer, or editor has a financial or personal relationships that inappropriately influence (bias) his or her actions (such relationships are also known as dual commitments, competing interests, or competing loyalties). ... The potential for conflict of interest can exist whether or not an individual believes that the relationship affects his or scientific judgment.

Financial relationships (such as employment, consultancies, stock ownership, honoraria, paid expenses and testimony) are the most easily identifiable conflicts of interest and those most likely to undermine the credibility of the journal, authors, and science itself...' [4]

Criteria for Acceptance of Manuscript

The APJHM invites the submission of research and conceptual manuscripts that are consistent with the mission of the APJHM and that facilitate communication and discussion of topical issues among practicing managers, academics and policy makers.

Of particular interest are research and review papers that are rigorous in design, and provide new data to contribute to the health manager's understanding of an issue or management problem. Practice papers that aim to enhance the conceptual and/or coalface skills of managers will also be preferred.

Only original contributions are accepted (ie the manuscript has not been simultaneously submitted or accepted for publication by another peer reviewed journal – including an E-journal).

Decisions on publishing or otherwise rest with the Editor following the APJHM peer review process. The Editor is supported by an Editorial Advisory Board and an Editorial Committee.

Peer Review Process

All submitted research articles and notes, review articles, viewpoints and analysis of management practice articles go through the standard APJHM peer review process.

The process involves:

1. Manuscript received and read by Editor APJHM;
2. Editor with the assistance of the Editorial Committee assigns at least two reviewers. All submitted articles are blind reviewed (ie the review process is independent). Reviewers are requested by the Editor to provide quick, specific and constructive feedback that identifies strengths and weaknesses of the article;
3. Upon receipt of reports from the reviewers, the Editor provides feedback to the author(s) indicating the reviewers' recommendations as to whether it should be published in the Journal and any suggested changes to improve its quality.

For further information about the peer review process see Guidelines for Reviewers available from the ACHSM website at www.achsm.org.au

Submission Process

All contributions should include a covering letter (see above for details) addressed to the Editor APJHM and be submitted either:

(Preferred approach)

1) Email soft copy (Microsoft word compatible) to journal@achsm.org.au
   Or
2) in hard copy with an electronic version (Microsoft Word compatible) enclosed and addressed to: The Editor, ACHSM APJHM, PO Box 341, North Ryde NSW 1670;

All submitted manuscripts are acknowledged by email.

NB

All contributors are requested to comply with the above guidelines. Manuscripts that do not meet the APJHM guidelines for manuscript preparation (eg word limit, structure of abstract and main body of the article) and require extensive editorial work will be returned for modification.

References

1. Doherty M, Smith R. The case for structuring the discussion of scientific papers. BMJ. 1999;318:1224-1225.
2. Perneger TV, Hudelson PM. Writing a research article: advice to beginners. Int Journal for Quality in Health Care. 2004;191-192. Available: http://intqhc.oxfordjournals.org/cgi/content/full/16/3/191 (Accessed 1/03/06)
3. Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals. http://www.icmje.org/recommendations/

Other references consulted in preparing these Guidelines

Evans MG. Information for contributors. Acad Manage J. Available: http://aom.org/Publications/AMJ/Information-for-Contributors.aspx (Accessed 26/11/14)

Health Administration Press. Journal of Health care Management submission guidelines. Available: http://www.ache.org/pubs/JHM/JHM%20article%20submission%20guidelines.pdf (Accessed 26/11/14)

International Journal for Quality in Health Care. Instructions to authors, 2005. Available: http://www.oxfordjournals.org/intqhc/for_authors/general.html (Accessed 28/02/06)

The Medical Journal of Australia. Advice to authors submitting manuscripts. Available: https://www.mja.com.au/journal/mja-instructions-authors (Accessed 26/11/14)

Further information about the Asia Pacific Journal of Health Management can be accessed at: www.achsm.org.au.

About the Australasian College of Health Service Management

ACHSM (formerly Australian College of Health Service Executives) was established in 1945 to represent the interests of health service managers and to develop their expertise and professionalism. Today, the college is the leadership and learning network for health professionals in management across the full range of health and aged care service delivery systems in Australia and New Zealand and the Asia Pacific with some 3,000 members from both public and private sector organisations and non-government and not-for-profit organisations.

ACHSM aims to develop and foster excellence in health service management through the promotion of networking, the publication of research, and through its educational and ongoing professional development activities, including accreditation of tertiary programs in health service management, mentoring and learning sets.

ACHSM has Branches in all Australian States and Territories, New Zealand and Hong Kong. Memoranda of Understanding link ACHSM with other health management bodies in the Asia Pacific. As an international organisation, ACHSM is able to draw upon the experiences of researchers and managers in Australia, New Zealand, Hong Kong and other countries within the region to give readers valuable insights into management issues and approaches in a range of cultures and jurisdictions.

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