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Health Reform Without Vision. Another Opportunity Lost!

Claire Jackson asserted back in 2006 that 'an overarching vision for our healthcare system in 2020… (is) still to be clearly enunciated'. [1, p.125] Eight years later she may well have been given that vision by courtesy of the recently published Commission of Audit Report [2] that makes recommendations, not just about 'our' health system but the whole gambit of public sector services. The vision appears to be based on fiscal rectitude where health, ageing and chronic care are cast as problems with health costs rapidly increasing out of control. The vision that this Report provides for the nation is that our healthcare provision is a cost to be curtailed not something we might invest in to underpin both the economic and social strength of our country.

There are a range of recommendations about what to do with healthcare and, the public and professional response has been swift and mostly negative. [3, 4] This author admits to being one of the earlier respondents to the report. [5] Perplexed at least, having seen plenty of health reform, a believer in a pluralistic system, not averse to a mix of public/private sector involvement, a believer in innovation and that new ideas present challenges and opportunities, happy to accept that rising healthcare costs are concerning but wedded to the concept of universal healthcare.

Perplexed because I have for years been telling my students, international audiences, my friends and family that Australia by any world view has a pretty good health system. Perplexed because as a percentage of GDP Australia spends 9.4%, up 1.5% over a decade on health! This percentage is less than the OECD average, less than the United Kingdom, New Zealand and about half a dozen other countries and notably about half that spent by the United States. [6] We also have comparable to better health outcomes than most of these OECD countries.

 The recently released OECD Report on Better Life [7] ranks Australia in the top 20 performers on the dimension of health status out of 36 countries, in fact in the top two for health. [6, p.128] In terms of life expectancy we outperform the OECD averages (in brackets) for females at 84 (83) years and males at 80 (77) years. Our share of people in good to very good health conditions for both sexes is at 85% (67-77%). So in terms of vision we could start with a view that our system is performing above the average and on a comparative basis, so far, has managed its costs effectively.

Universal healthcare is a concept well documented in the literature, something that most countries aspire to apart from the United States, Africa and parts of Asia. In many cases it reflects personal and community aspirations about equity, fairness and access to all, oft expressed in the form of financing systems and insurance schemes. It can be defined as 'physical and financial access to necessary healthcare of good quality for all persons in a society'. [8, p. 2] In Australian society this is often expressed as giving everyone 'a fair go'. So in this Australian context universality should be a determinate of public policy, particularly fiscal policy. Who said that Australians are no longer concerned about their fellow citizens, their children, the aged and disadvantaged groups? My view of universality goes further than the appropriate selection of financing mechanisms. It extends to rural, regional and remote communities that do not have access to healthcare because of geography, lack of public transport, health workforce shortages and poor socio-economic status. I think my view on healthcare is consistent with the public view of our population, a public good to be supported.

The majority of healthcare services are provided through our primary healthcare system, mostly through general practice, the MBS and PBS while the majority of health expenditure occurs in the acute hospital sector. Inappropriate use of the public hospital system has been identified as potentially preventable hospitalisation, potentially avoidable GP-type presentations to emergency departments. [6] The preventable admissions include vaccine preventable, chronic care, the consequences of lifestyle and acute care that could have been better treated in PHC if adequate resources and access were available. Others have pointed to the variability of the cost of procedures across hospitals as an indicator to where significant savings can be made or at least redirected more effectively to high priority health needs. [9]

There is general interest in addressing these issues at the health system level but we need to be reminded that some of them are a consequence of lifestyle decisions; some are a result of perversity in funding or inadequate workforce and because of differing responsibility of Commonwealth and State agencies. The solutions are not simple and some of them are generational and will take that sort of time to be resolved.

The other short term thinking about health reform is that it is invariably focused on some perceived or real crisis and focused on structural change of the organisations delivering care not on the efficacy of the service delivered. [10] The Audit Report [2] has all the hallmarks of suggesting a crisis including the commentary of the Commonwealth devolving acute service funding responsibility back to the States. First Ministers were being positively expectant about the potential of taking on more service delivery roles. However, the subsequent budget has made First Ministers anxious, then outraged, rather than expectant!

There is no empirical evidence that structural change as a solution will solve a crisis or improve integrated care. There does not appear to be any evidence that the integration of community health with hospitals into area health services some decades ago has impacted positively on reduced hospital utilisation. The question to be debated is, can providers of large acute services change their priority to reducing illness and improving health and wellbeing? [11] In PHC we seem to be moving to a purchasing model. This raises the question, particularly in rural, regional and remote areas as to who will deliver services if Primary Healthcare Networks (PHNs) aren't? If a purchasing model is all that we need for PHC why not also just purchase hospital services and get out of direct public provision?

So it is obvious that in the Commission of Audit Report there was no consideration of an overarching vision for an Australian healthcare system. The Budget delivered seems to have some incentives and disincentives that are attempting to reduce alleged but unfounded 'overutilisation' of PHC and an emphasis on shifting acute care costs away from the Commonwealth and back to the States and Territories and, the public. There is empirical evidence that co-payments may reduce utilisation but will not have the intended effect, will be counterproductive and costly. [12,13] This does not mean that there aren't savings to be made or that we should not strive to be more efficient and cost effective.

At the risk of restating evidence from a recent editorial [14] I feel compelled to remind readers that there is 'dissonance between the rhetoric and the reality' [15] of health reform.

In a legislated move to localism in the United Kingdom public sector, six essential actions are proposed; 'lifting bureaucracy, empowering communities, localising control of public finances, diversifying the supply of public services, opening government to local scrutiny and strengthening accountability to local people.' [16, p,7; 17,p.2] Sounds like a plan to me! This is where we need the over-arching vision; this is where we need public policy making to be focused. We need to move from governance of structures to governance by rules around practice. [18]

Healthcare reform is fraught territory for Ministers and their bureaucracies and failures in this area at both State and Commonwealth levels in the past decade have seen the demise of Ministers, governments and bureaucrats. Prior to the current federal government election people's trust in institutions, including government had declined from 53% to 46% between 2007 and 2013. [7] People's trust in institutions and in the way democracy works has also declined during the global financial crisis.

This lack of trust has implications not just for elected officials and bureaucracies but also for for health professionals and health managers when implementing this latest round of reform. Dealing with the reality of in some cases, of access for disadvantaged groups, an overburdened or under-provided workforce and of managing utilisation when epidemics of chronic disease, diabetes and lifestyle choices accelerate demand is going to require some extra resilience and careful leadership of those working in our health services.

For my part I want a vision that embraces universal healthcare, invests in PHC to reduce illness and as a result expenditure on acute care. A plan based on the six essential actions described earlier could be the starting point. At the outset we should at least ask – what is the problem we are attempting to solve?

DS Briggs BHA(NSW), MHM(Hons), PhD(UNE), FCHSM, CHE, FHKCHSE
Editor

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IN THIS ISSUE

The cover in this issue highlights the forthcoming ACHSM National Congress to be held in Adelaide in September this year.

In publishing this second issue for 2014 I would like to mention that in addition to those articles published in this issue we probably have sufficient articles submitted for at least one and possibly two more issues. So thanks to all those contributing authors and peer reviewers. We are about to add to our honorary assistant editors so we can only expect continued positive development for the Journal.

We start this issue with a contribution from Dinesh Arya providing a relevant review article about leadership and this provides a good starting point for a group of articles that mostly focus on the health management role. The next article by North and Park reports on a pilot project research survey in New Zealand of health management competencies. This article is important because it builds on existing and continuing interest and research by Australian colleagues.

The next two research articles are provided by Martins and Isouard, which continue and build on their work around the role and characteristics of Australian healthcare managers. The first describes aged care managers, while the second has a focus on the progression and evolution of health service managers in respect to data and characteristics described in the 2011 census data, contrasting with that described in their earlier work from the 2006 census.

Lenson and colleagues provide a research article that explores the types of provision made available to nurses within Australia in employment agreements who wish or are requested to respond to disaster situations. They describe the provisions made in a limited number of agreements in Australian jurisdictions.

Isbel and colleagues research article describes the health outcomes of a small cohort of elderly people discharged from hospital in one Australian jurisdiction and the impact of the effect of utilising an allied healthcare assistant in the outcomes of that care. Our next article provided by Phung Le and Fitzgerald describes the development of a quality performance measure and its testing in two public hospitals in Kahn Hoa province, Vietnam.

Finally, Salehi and colleagues describe research into hospital performance in Iran utilising the Pabon Lasso Model to evaluate the performance of six hospitals utilising data from three years of that performance.

So, You Must be a Leader – Everyone is!

D Arya

Abstract

A lot has been written about leadership types and styles. An attempt has been made to examine types and style of leadership, but also expectations from them. Perhaps an ability to influence others is one of key determinants of leadership.

Key words: Leadership; influence; style.

Abbreviations: CEOs – Chief Executive Officers.

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Introduction

The importance of leadership to accomplish a goal is undisputed. We acknowledge and recognise that leaders make things happen. They plan, propose, organise, solve and above all are recognised by others to have influenced the outcome. The question remains whether there are some common characteristics, styles and expectations that define a leader.

Despite billions of `leaders' in every walk of life, millions of companies across the world with very effective leaders and almost the same number of seminal and influential articles and books on leadership, [1] we still struggle to define and understand leadership. Broadly, we understand what it is – it is about leading people, but complexities arise when we begin to reflect on the characteristics of a good leader, whether different situations require different types of leadership attributes, and whether there are some types of leadership attributes that are better or more effective than others.

To understand leadership there has been a focus on studying characteristics of leaders, [2-5] and also leadership techniques. [6-10] We have remained interested in understanding leadership by its traditional classification of charismatic, interpersonal and dictatorial leaders, [11] but also in ethical, spiritual and moral leadership. For some time we became interested in exploring whether a key determinant of leadership was personality or behaviour. [12-14] As well, there is also an acknowledgement that type of leadership is also dependent upon the context and can be didactic, shared, relational, strategic, global, etc. [15-16]

Over the years we have also remained preoccupied with differentiating leadership and management, often depicting leadership as more `important' and even more virtuous than management. [17-19] Whether projection of the long-sighted aspect of leadership versus short-term preoccupation of managers to make things happen now, is the most well-crafted conspiracy of arm-chair theorists and accidental entrepreneurs who were mostly ineffective managers but felt the need to rationalise their own success is open to debate. Having said that, it is also true that to be a leader one doesn't really need to be an effective manager and have the necessary skills, expertise and competence to manage complex organisations. A leader can just lead by virtue of being recognised as one!

In reality, despite their different functions, management and leadership are complementary. Often both skills are required to lead success. [20] The degree to which each skill is required is probably defined by the context in which leadership and/or management is required.

Leaders are everywhere

Leaders are everywhere – in schools, politics and organisations. In fact we meet them in every aspect of our life. Every new initiative, small or big, is touted as a result of someone having providing excellent leadership. We reward and congratulate leaders every day.

Influencing is providing leadership. The 'ability of an individual to influence, motivate, and enable others to contribute towards the effectiveness and success of the organisation of which they are members' is one good definition of leadership. [21] Even those who think of leadership as a process consider it as 'a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task', [22] that allows a person to exhibit influence over others.

It has been proposed that within organisations 'today's business slogan should be `every employee is a leader'. [23] If that is the case, leadership can't be something special. Rather than defining leadership, perhaps the discussion needs to be about specific situations that require specific characteristics necessary for successful outputs or outcomes.

Do leaders have some common characteristics?

A multinational study across 62 countries [24] found that leadership characteristics that positively influenced job satisfaction and commitment were the presence of charisma, communication of vision and desire to bring about change. [25] Other universal leadership characteristics identified in this study included being trustworthy, just, honest, charismatic, inspirational, visionary, encouraging, positive, motivational, confidence builder, dynamic, having foresight, team builder, communicator, coordinator, excellence-oriented, decisive, intelligent and win-win problem solver. [26]

However, with regard to leadership characteristics, we often find ourselves in murky waters. Even effective behaviours can sometimes lead to change failure, especially if those `effective behaviours' are focused on meeting individual's own goals and needs rather than service the purpose of the change. [27]

It is indeed a risk that behaviours of a skewed group of successful people can sometimes be seen as successful leadership behaviour. The fact that behaviour of white, male American CEOs has often defined successful leadership behaviours, [28] has also meant that literature contains contradictory findings about successful leadership characteristics. [29-30] Focus on efficiency and profitability has often been a common behavioural characteristic of this group of successful leaders, however, there also remains a belief that ensuring standards of moral and ethical conduct is a key leadership determinant of success as well as responsibility. [31-32]

Are there different types and styles of leadership?

There are many ways in which leadership types have been classified in an effort to make sense of commonalities. It is very likely that the description of leadership types is influenced by our own (individual) perspective and our own experiences of success or failure. These are based on characteristics we value, the role we aspire to have, our view and analysis of how the organisation or group functions effectively, what we conceptualise as success in the leadership activity, and what our own concept of followership is. It is not unreasonable to conclude that simple bullet point lists can never describe good leadership qualities. [33] Moreover, it can also be deceptive by restricting our sense of what good leadership is, or can be.

With the above reality and bias in mind, it may be worth considering that there may be the following broad categories of leadership types:

1. Technical expertise leadership, often expressed as leadership in management. This type of leadership is effective to achieve, promote and maintain productivity. Here, the essential ingredient is technical expertise that is necessary to achieve outcomes.

2. People-oriented leadership, geared to get the best out of people who are intricately involved in the process. This type of leadership focuses on developing people to improve productivity and achieve desired outcomes.

3. Values-based leadership. The leader subscribes to and also practises values that are admired and shared by followers. This provides legitimacy and reason for followers to have trust and faith in decisions made.

4. Spiritual leadership, focused on achievement of meaning, happiness, comfort, strength, the essence of self, inner certainty, and an emotional level of being.

Of course, all leaders also have their own `style'. A leader's style is their way of influencing their follower-ship to pursue particular goals. Within each of these leadership types several different styles can exist from dictatorial, autocratic, managerial, democratic, collaborative to servant leadership styles. Moreover, none of these styles may be pure or exclusive.

What do leaders do? Ah-ha, so they influence others!

There is considerable literature on significance of power that leaders have; [34-37] could power be the differentiation characteristic of effective leadership? The argument would be something like this – one who has power is likely to be a good leader. Even though a position of authority

does give power, it is important that power is not considered the same as authority. Power can also be without authority. Five sources of power have been proposed: [38]

1. Power due to position (Legitimate)
2. Power due to ability to reward compliance (Reward)
3. Power to punish (Coercive)
4. Power based on special expertise (Expertise)
5. Power due to personality, style or behaviour (Charisma)

In fact, power is nothing more than an ability to influence to do something that the other may otherwise not have done. [37] Many definitions of leadership describe it nothing but 'the ability to influence', [39-40] and it is well recognised that this influence may arise because of formal or informal power, irrespective of whether it is vested in the person or acquired. [34,41,42]

Leadership is a sociological phenomenon. Situations provide opportunities for people to lead. Perhaps it is the combination of the situation and the people who have to be led, that results in a leader emerging who has the ability to influence both the people and the situation. If the situation demands technical expertise, a technical leader is successful. If the situation demands other types of leader to be more influential, a leader with those attributes takes charge of the situation. The question then is whether with a change in situation, the leader has to change. Indeed, that seems to be true and has been quite apparent in changes to leadership arising from economic crises in Europe, the democratisation of some Arab countries, the fall of Iraq and Libya, etc.

What is it that we look for in our leaders?

We tend to look for the following in leaders:

1. Establishment of a sense of purpose
Establishment of a sense of purpose is how leaders generally manage to convince people to give them control. For organisations embarking on change or transformation, variously termed as growth, restructuring and realignment, embarking on a new `vision' is an example of setting such a clear sense of purpose. Those who are successful in creating it are recognised as successful and effective leaders.

2. Giving meaning to what we do
Leaders tend to capture the imagination of the rest with some specific attributes they possess. Many leaders with a high level of morality whose actions flow from selflessness and altruism are admired for the values they possess and acknowledged as leaders in their own right. However, it is not difficult to find meaning in matters other than morality.

A set of principles that are subscribed and adhered to by the rest can provide this meaning. Those who manage to have enough followers are recognised as leaders. It is a common tool for religious leaders who are able to set certain requirements for their particular sect (even though these may be considered immoral by others).

3. Ability to persuade the rest to take a particular action
A person who is able to persuade or compel others to take a particular action or follow a specific course, is seen as a leader. This can occur in a variety of shapes and forms. A technical expert with specific skills and knowledge of particular tools and methods is able to provide guidance to others. A person with social influence is able to persuade a social group or an organisation to structure their activities and relationships in a particular way. [16] A person with authority and the power to compel a particular course of action is also described as a leader. Of course as we have seen over the course of history, the conquerors are the ones who make and write history and are not very kind to leaders who are defeated. However, it has to be acknowledged that until their defeat and until they fall into disrepute by victorious historians, those who lost are often recognised as `great leaders'.

So, can leaders be developed?
Developing leaders is an industry. Thousands of books are in print and hundreds of training programs and seminars are conducted every day near you to prepare `middle and senior leaders'. Many even have this wonderful knack of telling managers that what they do is not good enough to be a leader, but their training can make them one!

Developing leaders and developing leadership is confused by leadership training experts. Perhaps this is because it is difficult to differentiate between developing a person and developing specific skills and competencies in that person. Could developing leaders be about personal development? Perhaps it is, as there are commonalities in themes that circulate in both discourses.

Leadership development is a much discussed concept and flows off every consultant's tongue as easily as water off a duck's back. However, evidence for a successful model of leadership development as well as evidence for successful implementation of leadership development is not that easy to find. [43-44] The good news though is that there doesn't appear to be any evidence of a leadership development program that does not work! Reichard and Avolio's meta-analysis of studies on leadership seems to suggest that regardless of the theory being investigated, leadership

interventions have a positive impact on work outcomes (eg, ratings of leader performance) even when the duration of those interventions was less than one day. [45] Frequently, discussion progresses to identification of characteristics that determine leadership, including the contribution of genetics and the environment, [46] but also the person's sense of self and identity, [47] cognitive make up [48] and motivation. [49]

Conclusions

We identify people as leaders who establish a sense of purpose, help us to find meaning and/or are able to persuade us to take action (see above). In reality, what we really want from leaders is direction. If someone can set some rules that people can follow, we would certainly identify them as a leader. Perhaps, that is what leaders do. They successfully set some rules that then help us move in a particular direction or make a decision. If that is the case, could success or failure in leadership be defined in terms of one's ability to affect and implement change? [27,50,51]

No doubt we will always need and have people who influence others. That is the nature of our social interaction and an inherent need for society to function. We call them leaders. However, the nature of leaders and how leadership is provided has changed over time and is likely to continue to evolve. Whereas in the past religion and aristocracies had the power to influence, with democratisation of much of the world it moved on to good orators and shapers of public opinion. With globalisation, technical advancements and social networking, there will be a need for a different set of skills to be able to influence. As White et al quite rightly noted in 1996, 'Old ways of doing things are being replaced, improved - the way we make things is being revolutionised. The world is changing and leadership is no exception'. [52]

Competing Interests

The author declares that he has no competing interests.

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Potential for a Web-Based Tool to Confirm and Update Health Management and Leadership Competencies. Experiences of a Pilot Survey in New Zealand 2012

N North and E Park

Abstract

Objective: To determine the acceptability and utility of regular surveys of the health management workforce in order to describe the profile of health managers, to identify which health management competencies were important in New Zealand and to self-assess proficiency.

Design: Based on a literature review, 27 competencies were identified across three broad domains, Analytical, Interpersonal and Technical. A web-based survey in which participants responded to the listed competencies was administered.

Setting: Members of the professional association for health managers in New Zealand were eligible.

Main outcome measures: A 7-point Likert-type scale was used to rate listed competencies for importance to participant's roles, and to assess their proficiency in each competency.

Results: The respondents (n=46, response rate 30%) were predominantly in senior management levels, experienced and qualified in health management. The competencies rated most important were:

Analytical (decision-making, results management, strategic thinking, problem-solving, managing quality, flexibility, political skills, analytical skills); Interpersonal (teams, leadership, communication and collaboration/partnership); and Technical (budget-related). Participants' mean self-assessed proficiency in the 27 competencies were also mainly in the interpersonal and analytical domains. Respondents supported both regular assessment of competencies and use of a short web-based survey format, though not all supported the particular tool used in the pilot.

Conclusions: Feedback on the pilot was positive. Regularly surveying health managers using web-based questionnaires to confirm and up-date competencies would remedy the dearth in knowledge and provide the information educational and training institutions require to ensure qualifications are relevant, and to inform employer-based professional development.

Key words: Health management; health leadership; competencies; web-based survey; pilot study.

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Introduction

Competencies (and their variants capacities and capabilities) [1] are used in many professions, including the regulated health professions, to ensure the quality of workforces. [2] A competent health management workforce is regarded as essential to the performance of heath organisations and systems. [3] A competency is commonly defined as an observable characteristic involving knowledge, skills and attitudes, shown empirically to be related to the performance of tasks related to role and job, and can be improved with training and development. [4] In the quest

to improve performance and quality of health services, a recent upsurge in interest in health management and leadership competencies is evident, for example, in the United States, [2,4,5] Canada, [6] and Australia. [3,7,8,9] Competency frameworks influence formal health management educational programs, training and professional development. [6,10] Consensus on core health management competencies is, however, elusive.

Major stakeholders include accreditation and quality assurance agencies, educational program and professional organisations, with an absence of shared frameworks and development approaches noted. [4] Competencies these stakeholders determine that managers ought to have may not coincide with what they actually have, or regard as most important for their role. [8] Competencies are moreover contextual. Some competencies required in for-profit organisations will differ from public health services, as found in South Africa. [11] Studies in Canada and the US found differences across management level, [6,12] although Australian research found that core competencies were constant across management levels; only the emphasis differed. [3]

Health reforms and change bring into focus new competencies. Following health sector reforms from the 1980s in Australia, changes to roles and associated competencies reflected private sector management techniques introduced into the public health sector and the wide-ranging changes in healthcare organisation, financing and management. [7] Competencies in decision-making, leadership and interpersonal relations became prominent and the traditional management competencies of planning, controlling and directing less important. A shift in interest from management to leadership (for all health services workers, not only managers) is evident in the United States National Center for Healthcare Leadership Competency Model, [5] in the NHS Leadership Qualities Framework [13] and Leadership Academy in the United Kingdom. [14]

The large number of competencies found in the various lists and frameworks can be confusing, even when grouped in a limited number of domains or as broad, core competencies. Some studies have extensively reviewed such lists and proposed frameworks to include frequently identified competencies. [6,8,11,12] Research in Victoria, Australia determined competencies not by involving the experts (educators and professional organisations), but by the managers themselves. [3,9] Others have broadened the focus from identifying competencies to assessing proficiencies and gaps in competency, eg, in Canada, [6]

South Africa, [11] and the United States. [12] Useful though these developments are, studies are conducted at a point in time and the prioritised competencies can quickly date in today's rapidly changing environment.

In New Zealand, the competency of the regulated health professions is covered by the *Health Practitioner Competence Assurance Act* 2003, but health managers are not included. Information about New Zealand's health management workforce is sparse, with no national survey profiling the workforce. In partnership with the New Zealand Institute of Health Management (NZIHM), in 2012 a survey was designed and piloted among its members. This paper describes the rationale for the design, summarises main results and critically discusses the merits of regularly surveying health managers to track and up-date core competencies.

Methods

Lacking prior information regarding the profile and competencies of New Zealand health managers, the pilot study was exploratory in its purpose. The principal aim was to determine the acceptability and utility of regular surveys of the health management workforce. To achieve this aim, a pilot survey was conducted that adapted an existing competency survey. The survey included questions on: the profile of participating health managers; their perceptions of the most important health management competencies and self-assessed proficiency, and; determined the acceptability and utility of regular surveys of the health management workforce. The 'Northern X' Regional Ethics Committee approved the study as a low-risk survey on 29/5/2012.

The research design and instrument was informed by the GAP study in Canada. [6] The rationale for selecting this instrument was: Lockhart and Backman's framework [6] was based on a synthesis of ten available frameworks; it had been applied to studies in the United States [12] and South Africa; [11] it measured both importance and presence of a competency, and discriminated among management levels; the instrument was short and recent, and; had been validated in Canada's public health system. Although Canada's health system has some similarities to New Zealand's, the instrument was modified in consultation with NZIHM, after reviewing additional literature and considering New Zealand's health environment.

The final framework included 27 competencies across three domains: Technical, Analytical and Interpersonal (Appendix 1). These competencies formed the basis of the questionnaire, which was pre-tested for clarity and usability before being administered. Respondents were asked

first to rate the importance of each competency for their management level, and then to rate their level of proficiency for the competency on a 7-point Likert-type scale. A 7-point scale was preferred over a 5-point scale to better discriminate between ratings. [15] Participants' biographical information (including health manager level and tenure) were collected. Finally, respondents were invited to comment on the questionnaire and the web-based administration method, and to make suggestions for future administration.

The survey was administered using LimeSurvey, a robust platform that is easily customised. Web-based administration was chosen because it is more convenient and cost-effective than a paper-based survey, [16] response rates between the two are comparable, [17] and is acceptable to health managers. NZIHM members (n=150) were sent an email inviting them to participate through clicking on a web-link; information about the study and their ethical rights were included; consent was implicit in completing the survey. After three weeks and one reminder, 46 usable surveys were completed, a response rate of 30%.

Numerical data were entered into an Excel spreadsheet for analysis using descriptive statistics. Results of ratings using the 7-point Likert-type scales were analysed and central tendency (mean) analysed for the total sample and its sub-samples of management level; the intention to undertake tests of significance and to determine variance were abandoned as numbers for each management level were too small. Qualitative data (feedback on the survey and suggestions for future administration) were analysed thematically. The summary of main results below reports responses as percentages (rounded to nearest whole number).

Findings

Participant profile

The profile of the 46 participants represented experience and seniority in health management. Nearly two-thirds worked in the public sector. Three-quarters held clinical/health professional qualifications, and the same proportion management qualifications, with over half of both qualifications at higher tertiary level. Characteristics are summarised in Table 1.

Participant perceptions on competencies and self-assessed proficiency

Participants were asked to rate on a scale of 1-7 (where 7=most highly rated), the 27 competencies listed for importance to their management role. They were then asked to rate their proficiency in each competency also on a 7-point scale (where 7=most proficient). Mean scores (rounded to nearest decimal point) are shown on Table 2, in order of importance of domain, and within each domain, in order of importance of competency. Taking the highly rated competencies (mean score 6.0 and higher), eight were in the Analytical domain (decision-making, results manage-

Table 1: Respondent profile

CHARACTERISTIC		PER CENT (N)		PER CENT (N)		PER CENT (N)	'N/A', OR 'OTHER'
Age in years	Up to 45	19.5% (9)	46-55	50% (23)	56 and over	30.5% (14)	
Years in management role	Up to 10	32% (15)	11-20	31% (14)	21 and over	35% (16)	2% (1)
Management level	Middle or lower	33% (15)	Senior	24% (11)	Executive	28% (13)	15% (7)1
Employment sector	Public	63% (29)	Private	22% (10)	NGO/Voluntary	9%(4)	6%(3)
Primary work setting	Hospital	28% (13)	Funding Policy	33% (15)	Primary Community Residential care	11%(5)	28% (13)
Holds management qualification	Yes [2]	76% (35)	No	20% (9)	No response	4% (2)	
Holds clinical health professional qualification	Yes [3]	76% (35)	No	22% (10)	No response	2% (1)	

Notes:
1. Not applicable to seven respondents (working in other roles eg, policy, education, consultant)
2. Almost half were Master's degree and higher
3. Equally spread across certificate/diploma, and Bachelor's degree and higher

Table 2: Mean ratings of importance of each competency in order of importance and mean self-assessed proficiency per competency

COMPETENCY	MEAN IMPORTANCE RATING	MEAN PROFICIENCY RATING
Analytical Domain	**6.2**	**5.8**
Decision-making and judgement	**6.7**	**6.0**
Results management (planning, monitoring, evaluation)	**6.5**	5.9
Strategic thinking	**6.5**	5.8
Problem solving	**6.4**	**6.0**
Managing quality and standards of services	**6.4**	5.9
Flexibility (managing ambiguity and uncertainty)	**6.2**	5.8
Political skills (managing different agendas)	**6.2**	5.5
Analytical skills	**6.0**	5.8
Work redesign	5.7	5.5
Learning (self-directed and training)	5.6	5.7
Interpersonal Domain	**6.0**	**5.8**
Managing in a team environment	**6.5**	**6.2**
Leadership	**6.5**	**6.9**
Communication (written and oral)	**6.4**	**6.0**
Collaboration and partnership	**6.3**	**6.0**
Cultural competency	5.6	5.4
Human resources management	5.6	5.7
Teaching and mentoring	5.4	5.7
Employment relations knowledge	5.4	5.4
Technical Domain	**5.5**	**5.3**
Responsibility for the budget	**6.2**	**6.0**
Ability to budget finances	**6.0**	5.6
Reading and interpreting financial reports	5.8	5.5
Knowledge of ethical standards	5.7	5.5
General knowledge of clinical practices	5.5	5.3
Knowledge of other health care professions	5.4	5.3
I.T. Competency	5.3	5.4
Awareness of new clinical developments	5.1	4.6
Knowledge of clinician professional practice	4.9	4.9

Notes:
1. Scores represent Likert scale values, where the closer the rating is to 7, the more highly the competency (and proficiency) is rated.
2. Means rounded to nearest decimal point.
3. Means of 6 and higher in bold

ment, strategic thinking, problem-solving, managing quality, flexibility, political skills and analytical skills); four were in the Interpersonal domain (teams, leadership, communication and collaboration/partnership); and only two in the technical domain (both budget-related). Competencies rated lowest in importance were mainly in the Technical domain (competencies in clinical knowledge and I.T.); and in the Interpersonal domain (employment relations and teaching/mentoring). The competencies in which participants rated themselves as most proficient (mean scores of 6.0 and over) were predominantly in the Interpersonal domain (leadership, teams, collaboration and communication), Analytical domain (problem-solving and decision-making) and the budget-related competencies in the Technical domain. The competencies with the lowest self-assessed proficiency scores (less than 5.5) were predominately in the Technical domain, related to clinical knowledge and I.T., and for employment relations in the Interpersonal domain.

There were differences across management levels. For competencies rated as the most important for the role (scores of six or higher), a mean score for the proficiency gap per management level was determined by comparing mean scores for importance of competency with self-rated proficiency.

Table 3 shows that for all management levels (excluding front-line with only two responses), the greatest gaps concerned competencies in the Analytical domain. The highest gaps were in Decision-making and judgement for executive managers (one point of difference on a scale of one to seven between mean scores for importance and proficiency), and in political competencies for middle managers (more than one point of difference).

Acceptability and utility of regular surveys

Open-ended questions invited participants to comment on possible regular surveys similar to the pilot. Two-thirds supported regular surveys eg, annually (favoured by over half). A sub-set suggested these will be useful only if they are incorporated into educational, training and professional development programs for the purpose of improving the performance of managers, and that timely feedback on proficiency relative to peers is needed. An added advantage of regular surveys, it was proposed, would be to track trends in competencies needed for managing health services. Feedback on web-based administration was positive, and suggestions for technical improvements made eg, to use drop-down boxes rather than scales. Participants did not find completion onerous: average completion times ranged from six to 23 minutes, depending on time spent on open-ended questions.

Asked whether the competencies listed were relevant to health management positions and organisations, 94% (n = 43) responded in the affirmative; the 15% of participants not in health service delivery management positions found them less relevant. Suggestions for competencies not listed included: time management, accountability, dealing with conflict, change management and knowledge of the health environment. Some feedback raised questions about the reliability of the questionnaire, noting that while listed competencies were relevant in general, importance may vary depending on role within the organisation and context. Because of such variation, feedback suggested survey respondents may attach different meanings to the same competency, and differences in interpretation of a given competency may lead to respondents rating different sets of behaviours.

Table 3: Competency gaps (self-assessed) per management level for competencies rated as important (score 6.00 or over)

COMPETENCY	EXECUTIVE MANAGERS (N=13)	SENIOR MANAGERS (N=11)	MIDDLE MANAGERS (N=13)
Analytical Domain			
Decision-making and judgement	**1.00**	<1.00	
Results management (planning, monitoring, evaluation)			<1.00
Strategic thinking	<1.00		
Managing quality and standards of services	<1.00		<1.00
Flexibility (managing ambiguity and uncertainty)		<1.00	
Political skills (managing different agendas)			**>1.00**
Analytical skills		<1.00	
Interpersonal Domain			
Leadership		<1.00	
Technical Domain			
Responsibility for the budget	<1.00		
Reading and interpreting financial reports	<1.00		

Note:
1. A score of 1 indicates a difference between mean score for importance and proficiency of 1 point on a scale of 1-7, <1 indicates between 0-1 difference, and >1 indicates a score of between 1 and 2.
2. Gaps of one or more points in bold.

Discussion and conclusions

The primary purpose of the pilot was to determine the acceptability of regularly surveying New Zealand health managers in order to profile the workforce and assess competency levels and gaps for the workforce as a whole. Two-thirds of respondents, members of NZIHM, were supportive of regular surveys, both to assess proficiency against competencies and to track changing priorities. They were also supportive of the web-based approach, and offered suggestions on how the large and diverse health management workforce may be accessed. However, issues of reliability and validity of the instrument used were raised, discussed below. An obvious limitation of the pilot was the small and non-randomised sample that is not representative of the large and diverse health management workforce, and that less than one-third of the sample responded. The results of the pilot are thus indicative only. Self-rated proficiencies were not independently verified (a limitation) and, together with the experiences of the pilot and feedback from participants, led us to conclude that assessing proficiency against competencies, [6,11,12] is best conducted at employer level and embedded in training and professional development. There is a case, however, for confirming competencies through regular workforce surveys.

The 27 competencies were narrow in scope, at a high level generic to most industries and based on reviewing previously identified health management competencies reported in literature in other countries, as in other studies. [6,8,11,12] Much of the health management competency research has been dominated by stakeholders, including professional colleges and educational institutes, [2,6] and has emerged from the United States, [2,4,12] which may account for the competencies commonly included in frameworks. Competencies from the list rated highly in importance, and the greatest competency gaps, were mainly in the analytical and interpersonal domains. Although most participants across management levels agreed the competencies were relevant, [3,9] in open-text feedback relevance for all management levels and health service context was questioned, and omitted competencies were proposed. Such feedback highlighted the importance of aligning competency frameworks with health system context and with health management workforce diversity.

There are important limitations in drawing on competencies identified elsewhere; the relationship between competencies and the health system context limits the transferability of competencies from one context to another. Feedback from participants supported the notion that competencies change over time [7] and need to be periodically revised. For example, since 2008 in New Zealand's public health system, a limited number of targets have been prioritised, one being the six-hour maximum time for a client in emergency departments. Developments such as targets prioritise some competencies, while others become less important. [18] As another local example to illustrate the importance of aligning competencies with context, a recent inter-agency initiative, 'Whānau Ora' ('Family Health'), for whānau/families with the poorest health and wellbeing outcomes, including Māori, is bringing together social services/organisations with health services in working innovatively with whānau. [19] The competencies required for Whānau Ora managers to be effective are particular and yet to be articulated. Regular surveys to confirm and review health management competencies would need to be sensitive to such changes in importance of tasks and associated competencies.

Results of the pilot illustrated concerns about both validity and reliability: the competencies were not validated for New Zealand, and managers may attach different meanings to competencies. A promising alternative is illustrated in recent Australian research (published since the pilot study was conducted), [3,9] in which practising managers identified core competencies. Six core competencies emerged as essential to the performance of hospital managers, and these were common across the three management levels similar for managers of metropolitan and rural hospitals. The core competencies were: evidence-based decision-making; interpersonal, communication and relationship management; knowledge of healthcare environment and organisation; operations, administration and resource management; leading and managing change, and; leadership. [3] Four of these core competencies also applied to managers of community based services; leading and managing change applied to two of three levels only. [9] Although comparing results of the pilot with the Australian results is complicated by differences in labels used, scope and level of competencies, respondents in the pilot also identified (through rating items on the list and proposing other competencies) as highly important those competencies related to decision-making, relationships and communication, operations and change management. Clinical competencies were not rated as highly important, possibly because these were specific to clinical practice and clinicians, not to the environment.

Based on pilot survey experiences, determining, prioritising and continually up-dating health management competen-

cies is a vexed issue, complicated by health sector diversity and change, and by variation in roles and contexts. Nevertheless, there are sound arguments in favour of articulating the health management competencies needed in the 21st century to support good stewardship and leadership of health services. Several stages can be distinguished in developing context-specific frameworks. Determining the core competencies required to perform tasks is an essential first step, [2] and as in recent Australian research, [3,9] best identified and validated through observational and qualitative techniques. Competencies identified in small study samples should then be generalised, eg, using surveys [11] and consensus methods such as Delphi techniques. [20] Finally, competency frameworks need to be periodically reviewed and updated, for which purpose regular workforce surveys can be used. Future New Zealand research could build on the Australian research.

The web-based survey was completed by a small sample of mainly senior managers who gave positive feedback on assessing competencies. We conclude that a prospective study regularly surveying health managers about the core competencies needed to perform their jobs would address the present dearth in knowledge and better articulate the relationship between competencies and performance. Over time, regular surveys could track the rise and decline of competencies, with changes interpreted against health system developments, providing the information educational and training institutions require to ensure qualifications are relevant, and to inform employer-based professional development.

Competing Interests

The authors declare that they have no competing interests.

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Appendix 1: List of 27 competencies used in the pilot survey

Technical Competencies

1. General knowledge of clinical practices

2. Awareness of new clinical developments

3. Knowledge of clinician professional practice

4. Knowledge of other health care professions

5. Knowledge of ethical standards

6. Reading and interpreting financial reports

7. Ability to budget finances

8. Responsibility for the budget

9. I.T. Competency

Analytical Competencies

10. Managing quality and standards of services

11. Strategic thinking

12. Decision-making and judgment

13. Problem solving

14. Analytical skills

15. Work redesign

16. Political skills (managing different agendas)

17. Flexibility (managing ambiguity and uncertainty)

18. Learning (self-directed and training)

19. Results management (planning, monitoring, evaluation)

Interpersonal Competencies

20. Leadership

21. Communication (written and oral)

22. Cultural competency

23. Managing in a team environment

24. Collaboration and partnership

25. Human resources management

26. Employment relations knowledge

27. Teaching and mentoring

Managers of Aged Care Residential Services

J M Martins and G Isouard

Abstract

This article provides analyses of the number and characteristics of managers of aged care residential services in Australia at the time of the 2011 Census of Population. It documents the growth in capacity of these services, number of people employed and managers. The paper goes on to assess the diversity in the geographical distribution of managers. It examines the age and sex characteristics of managers in aged care residential services and compares them to health services and all industries. It estimates and reviews the average age of female and male managers at different levels of management. The analysis of the fields of study of these managers reveals the different pattern of the field of study of managers in aged care residential services and their level of education in comparison to the average for all industries. It also discloses gendered specialisation in the fields of study. Other analysis estimates the average income of managers in aged care residential services in comparison with those in health services and average in all industries. It examines the income of managers at different levels, with diverse levels of education and functions, and also differences in income of female and male managers. The analysis of marital status discloses a pattern in aged care residential service managers that is distinct from the pattern for all industries. The paper examines the changing origins of managers of aged care residential services according to their country of birth. It also assesses the relative representation of Indigenous people in the manage-ment of these services. Finally, it discusses issues of relevance to the organisation and management of aged care residential services and the training of their managers.

Key words: health service managers; characteristics; aged care residential services; health labour force; training and career path development.

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Introduction

Aged care programs offer a variety of models in a number of settings. Most of the places in aged care programs are in facilities known generically as nursing homes or hostels (75.2%). Although more emphasis has been placed in home care to cope with an annual average growth of 2.37% in the population aged 70 years and over in the five-years 2006-2011, the number of residents continued to rise at an annual average of 1.74% in that period. Aged care residential services provided accommodation and services for about 169,000 people, mostly on a permanent basis (97.7%) in

2011. Of these, 92.8% were 70 years of age and over. [1] In recent years, there have been considerable changes in the structure of aged care residential services with a reduction in the number of facilities and an increase in their average size. The ownership of these facilities is mostly by not-for-profit and religious organisations, and private and public ownership varies from state to state, with public ownership playing a larger role in remote areas. [1] The management of these services is of great social importance because, among other things, of the constrained physical and mental functioning of their residents and their dependency on the services provided.

The authors prepared the first comprehensive assessment of the number and characteristics of managers in health and aged care residential services in Australia based on data of the 2006 Census of Population and Housing. [2,3,4,5] In that series of articles the authors also provided a related literature review. In view of the rapid changes taking place, this paper provides an update of their previous assessment using data from the 2011 Census of Population and Housing. The analysis of the data raises a number of questions that should

be pursued regarding labour force policy development, as well as the relevance of the training and continuing education of these managers.

Data specifications

The data the authors use in this paper are based on the 2011 Census of Population and Housing of Australia conducted by the Australian Bureau of Statistics (ABS). ABS prepared tabulations according to the authors' specifications. These had the same occupation and industry classifications as those in the analyses undertaken by the authors for the 2006 Census. Consequently, the data sets for 2006 and 2011 are compatible and provide for consistency over time. A detailed description of the Australian classifications of occupations and industries used by ABS in the two censuses was given in an appendix to the first paper prepared by the authors for 2006. [2] The data relate to managers in four categories: managers not further defined (nfd), Chief Executive Officers (CEO)and General Managers (GM), specialist mangers and service managers. The industry of employment is aged care residential services. The specifications of other variables followed ABS' 2011 Census coding of age, sex, marital status, field of study and level of education, Indigenous status, country of birth, hours worked and individual income. The hours of work and individual income relate to the week before the 2011 Census. For comparison purposes, the authors also requested information for health services and all industries, excluding farmers and farm managers. Other data in the analyses are from sources given by the authors. The authors have followed ABS and other definitions of sex and gender. Sex is defined as the biological characteristics of males and females. Gender refers to psychological and social characteristics that are culturally determined from belief systems as to what masculine and feminine behaviour is or ought to be.

ABS changed figures in some cells of the tabulations to avoid the unlikely identification of individuals. It led to small differences in the figures used. However, this does not affect in a material way the results of the analyses undertaken by the authors. It is relevant to point out that although the basic data used was provided by ABS according to the authors' specifications, most of the information in tables and figures are the outcome of the authors' analyses.

Aged care residential service growth

Aged care residential services are concerned with one of the fastest growing age groups in Australia's population: people aged 70 years and over. As stated, the structure of aged care has been changing rapidly in recent years. This is reflected in a greater emphasis on home care that avoids people leaving their own homes. As stated previously, the number of residents of aged care facilities grew more slowly than the target population 70 years of age and over between the 2006 and 2011 censuses. However, the number of people employed in aged care residential services rose at an average annual rate of 5.09%. In turn, the number of managers of a smaller number of facilities also increased but at the slightly higher annual rate of 5.69% (Table 1).

A result of these different rates of growth there was a decline in the number of residents in aged care residential services per thousand people 70 years of age or more (-1.7%) in the period 2006-2011. The number of resident per employee fell from an average of 1.207 in 2006 to 1.021 in 2011 (-15.4%) and the number of residents per manager also declined

Table 1: Aged care residential services target population, residents, people employed and managers, Australia 2006-2011

TARGET POPULATION, RESIDENTS, EMPLOYEES & MANAGERS	2006	2011	AVERAGE ANNUAL GROWTH
	No	No	%
Population 70 years & over	1,887,000	2,124,000	2.37
Residents of aged care facilities	154,900	169,000	1.74
People employed in aged care residential services	128,300	165,500	5.09
Managers of aged care residential services	6,200	8,241	5.69

Sources: ABS 2007, 2012a, 2012b and 2013, AIHW 2007 and 2012.

Table 2: Aged care residential service residents per target population, employees and manager, and employees per manager, Australia, 2006-2011

RATIOS	2006	2011	% INCREASE 2006 – 2011
Number residents per 1,000 people >69 years	82.1	80.7	-1.7
Number residents per employee	1.207	1.021	-15.4
Number residents per manager	25.0	20.5	-18.0
Number people employed per manager	20.7	20.1	-2.8

Sources: ABS 2007, 2012a, 2012b and 2013, AIHW 2007 and 2012.

by 18.0%. As the number of managers rose at a somewhat higher rate than the number of employees, the number of employees per manager fell slightly from 20.7 in 2006 to 20.1 in 2011 (-2.8%), (Table 2).

Number of managers by category

In the five-years 2006-2011, the rate of growth in the number of managers in aged care residential services was substantially larger than that in health services and three times the average for all industries (Table 3). As mentioned previously, this was also somewhat larger than the rate of increase of the number of employees during the same period that resulted in a slightly smaller number of employees per manager in aged care residential services (Table 2).

The rate of increase in the number of CEOs, GMs and managers (nfd) was substantially higher (42.5%) than the rate in specialist (34.6%) and service managers (25.0%) (Table 4).

Table 3: Managers in aged care residential services, health services and all industries, Australia, 2006-2011

PLACE OF EMPLOYMENT	No OF MANAGERS (000s)		% INCREASE
	2006	2011	2006 – 2011
Aged care residential services	6.2	8.2	32.9
Health services	19.4	22.4	15.6
All industries	1,025.4	1,136.8	10.9

Note: Percentages may not be exactly as per figures in table due to rounding. Sources: ABS 2013 and Martins & Isouard 2012a.

Table 4: Managers in aged care residential services per category, Australia, 2006-2011

MANAGER CATEGORY	No OF MANAGERS (000s)		% INCREASE
	2006	2011	2006 – 2011
CEO/GM	526	732	39.2
Managers (nfd)	123	193	56.9
Sub Total	649	925	42.5
Specialist managers	3,932	5,293	34.6
Service managers	1,619	2,023	25.0
All	6,200	8,241	32.9

Note: (CEO/GM) chief executive officers and general managers; (Managers nfd) managers not further defined; (Specialist mangers) managers who perform specialist functions such as finance, human resources, information technology, medical and other clinical services, nursing and allied health services; (Service managers) managers concerned with catering, cleaning, maintenance and other support services.
Sources: ABS, 2012b and 2013.

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Table 5: Managers in aged care residential services, health services and all industries by category, Australia, 2011

MANAGER CATEGORY	%		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
CEO/GM	8.9	12.3	8.2
Managers (nfd)	2.3	4.1	3.3
Sub Total	11.2	16.4	11.5
Specialist managers	64.2	68.3	52.7
Service managers	24.5	15.2	35.8
All	100.0	100.0	100.0

Note: (CEO/GM) chief executive officers and general managers; (Managers nfd) managers not further defined; (Specialist mangers) managers who perform specialist functions such as finance, human resources, information technology, medical and other clinical services, nursing and allied health services; (Service managers) managers concerned with catering, cleaning, maintenance and other support services.
Source: ABS 2013.

These changes brought the proportion of CEO/GM and managers (nfd) (11.2%) close to the average proportion in all industries (11.5%) but still lower than that in health services (16.4%). As in the case of health services, the proportion of specialist managers was considerably greater (64.2%) than the average in all industries (52.7%) and the proportion of service managers (24.5%) was substantially lower than the average for all industries (35.8%) (Table 5). An outcome of the changes that took place in the period 2006-2011 was that the average number of people employed per CEO/GM and manager (nfd) increased only slightly (198 in 2006 and 200 in 2011). The same applied to specialist managers (32.6 in 2006 and 34.9 in 2011) but the number of people employed per service manager rose substantially from 79.2 in 2006 to 91.3 in 2011 (Tables 1 and 4) .

Geographical distribution of managers in aged care residential services

The number of managers of aged care residential services varied from state to state, in relation to the number of residents. The range was from 18.8 residents per manager in Tasmania to 23.0 in Queensland. An even larger range prevailed in the number of employees per manager: 16.6 in the Australian Capital Territory and 24.5 in Queensland (Table 6). A potential reason for the substantial difference in the resident to manager ratio would be the relative size of the aged care residential facility. [1]

However, when the average size of facilities in each state/territory is compared with the resident to manager ratio there is no consistent relationship. The same applies to the relationship between the number of residents and employees among the states/territories.

Table 6: Population, residents and employees per manager of aged care residential services, by state, 2011

STATE/TERRITORY	NUMBER PER MANAGER		
	POPULATION>69	RESIDENTS	EMPLOYEES
New South Wales	236.2	19.3	18.2
Victoria	264.2	21.4	18.1
Queensland	291.6	23.0	24.5
South Australia	222.2	19.4	22.0
Western Australia	269.0	20.2	23.4
Tasmania	239.8	18.8	21.1
Australian Capital Territory	257.5	19.0	16.6
Northern Territory	309.5	21.3	23.0
Australia	253.9	20.5	20.1

Sources: ABS 2012a, 2013, AIHW 2012.

Table 7: Sex distribution of managers in aged care residential services, health services and all industries, Australia, 2011

PLACE OF EMPLOYMENT	SEX % OF TOTAL		
	FEMALE	MALE	ALL
Aged care residential services	66.4	33.6	100
Health services	59.8	40.2	100
All industries	36.3	63.7	100

Source: ABS 2013.

Age and sex of managers

Employees of aged care residential services were predominantly female (84.6%) in 2011. This was considerably different from the average for all industries (46.6%). [7] Females also constituted the largest proportion of managers in aged care residential services (66.4%) (Table 7), but their proportion was considerably less than the proportion of female employees. This was similar to the situation in 2006. [3]

The proportion of females in the CEO/GM category was particularly low (46.5%) while the proportion of female specialist managers (73.4%) was the closest to the proportion of female employees (84.6%) (Table 8 and [7]).

The average age of managers in aged care residential services was 50.0 years in 2011. This was substantially older than the average in health services (46.7 years) and even more so than the average for all industries (44.1 years) (Table 9).

Table 8: Sex distribution of managers in aged care residential services, health services and all industries by category, Australia, 2011

MANAGER CATEGORY	% FEMALE MANAGERS		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
CEO/GM	46.5	53.7	23.0
Managers (nfd)	63.0	63.6	30.3
Sub Total	49.9	56.2	25.1
Specialist managers	73.4	63.9	32.3
Service managers	55.4	55.8	45.8
All	66.4	61.4	36.3

Source: ABS 2013.

Table 9: Average age of managers in aged care residential services, health services and all industries, Australia, 2011

MEASURE OF CENTRAL TENDENCY	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Average age (years)	50.0	46.7	44.1
Median age (years)	51.1	47.4	44.0
Standard deviation (years)	10.3	10.5	11.7
Coefficient of variation	0.206	0.226	0.264

Source: ABS 2013.

Figure 1: Age of managers in aged care residential services by sex, Australia, 2011

Source: ABS 2013.

The average age of female managers (49.9 years) was about the same as that of males (50.1 years) in 2011, but the coefficient of variation was somewhat larger in the case of males (Figure1 and Table 10).

The average age in 2011 of managers in aged care residential services at 50.0 years was somewhat older than that of 49.2 years at the time of the 2006 Census (Table 10 and [3]).

The average age of managers in the CEO/GM category was older (52.4 years) than the average for all categories (50.0 years) (Table 11), as it was the case in health services and all industries. [9] This pattern was similar to that observed at the time of the 2006 Census. [3]

Table 10: Average age of managers in aged care residential services by sex, Australia, 2011

MEASURE OF CENTRAL TENDENCY	FEMALE	MALE	PERSONS
Average age (years)	49.9	50.1	50.0
Median age (years)	51.1	51.1	51.1
Standard deviation (years)	10.0	10.9	10.3
Coefficient of variation	0.200	0.218	0.206

Source: ABS 2013.

Table 11: Average age of managers in aged care residential services by category and sex, Australia, 2011

MANAGER CATEGORY	AVERAGE AGE (YEARS)		
	FEMALE	MALE	PERSONS
CEO/GM	51.5	53.1	52.4
Managers (nfd)	50.1	47.3	49.1
Specialist managers	49.7	48.7	49.5
Service managers	49.8	51.3	50.5
All	49.9	50.1	50.0

Source: ABS 2013.

Table 12: Distribution of managers by field of study in aged care residential services, health services and all industries, Australia, 2011

FIELD OF STUDY	%		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Health	28.4	29.0	2.8
Management and commerce	26.3	28.1	23.8
Social and related fields	13.0	10.4	9.1
Natural and physical sciences	1.1	5.1	2.6
Engineering and related fields	3.4	4.1	12.3
Education	2.7	2.3	4.0
Food, hospitality and personal care	3.8	1.8	3.0
Information technology	1.0	2.0	2.8
Architecture and building	2.8	0.9	5.4
Other*	17.5	16.3	34.2
All fields	100.0	100.0	100.0
Relative difference index	58.3	61.2	Standard

Note: (*) Other includes managers whose field of study was inadequately described, not stated or without a field of study (in relation to post-school qualifications). The relative difference index = $|\Sigma\{[a_i / b_i] *100] -100\}| / (2*n)$; ($a_i$) is the proportion of managers from the field of study (i) in given service, (b_i) is the proportion of managers from field of study (i) in all industries, (n) is the number of fields of study groups (including other). Source: ABS 2013.

Field of study of managers

The distribution of the field of study of managers in aged care residential services was similar to that of health services but considerably different from the average for all industries in 2011. The emphasis on health (28.4%) was almost the same as in health services (29.0%) and the same applied to management and commerce (26.3%). However, the proportion from social and related fields of study was higher (13.0%) than in health services (10.4%) (Table 12). This pattern was similar to that in 2006, with a larger proportion in the field of management and commerce (26.3% versus 22.2%) and a lower proportion in health (28.4% versus 31.3%) (Table 12 and [4]).

Specialisation in the fields of study of male managers in aged care residential services was different from that of female managers. Only 9.4% of male managers came from

Table 13: Distribution of managers in aged care residential services by field of study, Australia, 2011

FIELD OF STUDY	%		
	FEMALE	MALE	PERSONS
Health	38.1	9.4	28.4
Management and commerce	22.3	34.1	26.3
Social and related fields	14.9	9.2	13.0
Natural and physical sciences	0.7	1.7	1.1
Engineering and related fields	0.3	9.6	3.4
Education	3.1	2.1	2.7
Food, hospitality and personal care	2.9	5.5	3.8
Information technology	0.4	2.1	1.0
Architecture and building	0.2	8.1	2.8
Other*	17.1	18.2	17.5
All fields	100.0	100.0	100.0

Note: (*) Other includes managers whose field of study was inadequately described, not stated or without a field of study (in relation to post-school qualifications).
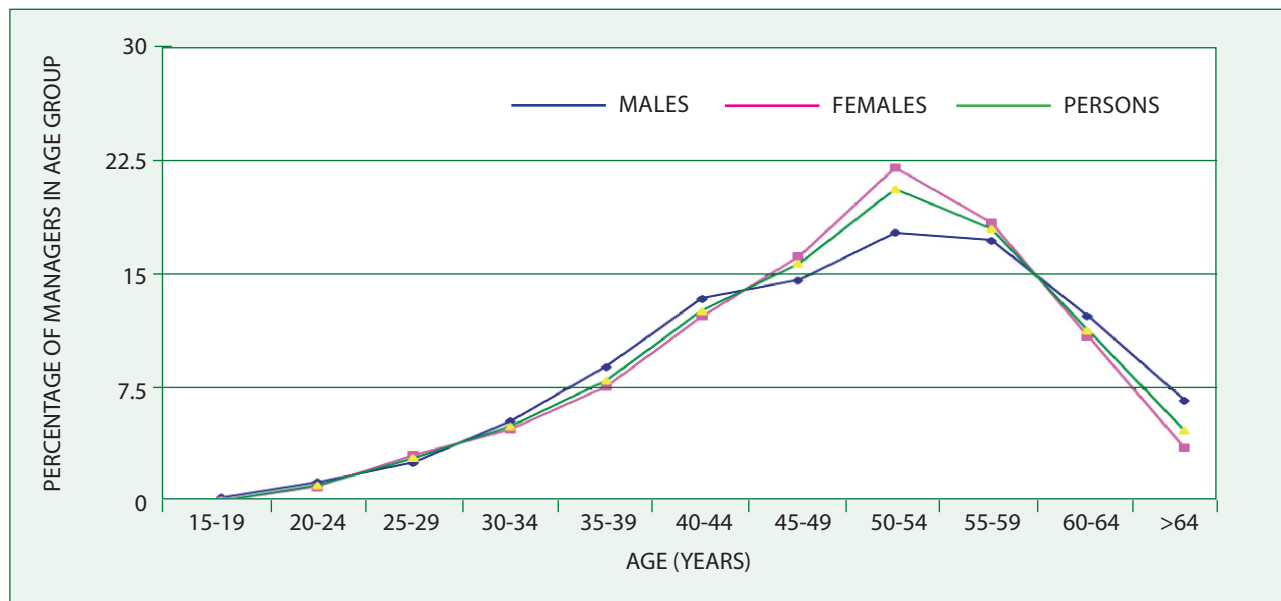Source: ABS 2013.

Table 14: Level of education of managers in aged care residential services, health services and all industries, Australia, 2011

LEVEL OF EDUCATION	%		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Postgraduate	17.4	27.8	11.7
Bachelor degree	30.5	30.6	22.7
Diploma certificate	33.9	25.2	32.5
Other and not stated	18.2	16.5	33.1
All fields	100.0	100.0	100.0
Relative difference index	16.6	30.5	Standard

Note: (*) Other includes managers whose level of education was inadequately described, not stated or without a post-school qualifications. The relative difference index = | Σ {[a$_i$ / b$_i$) *100] -100}| / (2*n); (a$_i$) is the proportion of managers with level of education (i) in given service, (b$_i$) is the proportion of managers with level of education (i) in all industries, (n) is the number of the levels of education (including other). Source: ABS 2013.

the health field of study compared with 38.1% for females. To a lesser extent, the inverse applied to the management and commerce field of study: males 34.1% and females 22.3%. With the exception of social and related fields where the field of study of females was 14.9% compared with 9.2% for males, males had a greater propensity to come from all other fields of study such as engineering, architecture and food (Table 13).

Level of education of managers

The level of education of managers in aged care residential services was considerably higher than the average for all industries in 2011. They had about the same proportion with a bachelor degree (30.5%) as health services (30.6%) but a lower proportion with postgraduate qualifications: 17.4% compared with 27.8% in health services (Table 13). The

level of education in 2011 was similar to that at the time of 2006 Census, but the proportion of managers with bachelor and postgraduate qualifications rose from 44.9% in 2006 to 47.9% in 2011 (Table 14 and [4]).

Income of managers

The average income of aged care residential service managers was higher than the average for all industries. The average weekly income of $1,539 was the equivalent of about $80,200 per year compared with an average for all industries of about $77,900 (Table 14). This difference might reflect the higher level of education of managers in aged care residential services and their fields of study (Tables 12 and 14). The difference in levels of education might also account for the higher average income of health service managers (Table 15).

Table 15: Average weekly income of managers in aged care residential services, health services and all industries, Australia, 2011

MEASURE OF CENTRAL TENDENCY	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Average weekly income ($)	1,539	1,693	1,495
Median weekly income ($)	1,473	1,675	1,401
Standard deviation	669	665	755
Coefficient of variation	0.435	0.393	0.505

Note: Weekly income refers to the weeks before the 2011 Censuses. Source: ABS 2013.

Table 16 Average weekly income of managers in aged care residential services, health services and all industries, Australia, 2006 and 2011

YEAR	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
2011 Average weekly income	1,539	1,693	1,495
2006 Average weekly income	1,316	1,499	1,341
% Increase2006-2011	16.9	12.9	11.5

Note: Weekly income refers to the weeks before the 2006 and 2011 Censuses.
Sources: ABS 2013 and Martins & Isouard 2012c.

On average the average income of female managers in aged care residential services was lower ($1,476 per week) than that of males ($1,663 per week) in 2011. The average difference of about $200 per week ($10,400 per year) prevailed among all manager categories. It was lowest in the case of service managers ($107 per week) and highest among managers (nfd) ($422 per week) (Table 17).

These differences cannot be attributed to the age distribution of females and males, as they subsisted at all age groups (Figure 2). However, a proportion of the disparity might be due to the higher proportion of female mangers working less than 35 hours per week (19.8%) than male managers (11.5%), as will be discussed.

Table 17: Average weekly income of managers in aged care residential services by category and sex, Australia, 2011

MANAGER CATEGORY	AVERAGE WEEKLY INCOME ($)		
	FEMALE	MALE	PERSONS
CEO/GM	2,061	2,237	2,155
Managers (nfd)	1,326	1,748	1,471
Specialist managers	1,546	1,809	1.617
Service managers	1,068	1,175	1,116
All	1,476	1,663	1,539

Note: Weekly income refers to the week before the 2011 Census. Source: ABS 2013.

Figure 2: Average weekly income of managers in aged care residential services by age and sex, Australia, 2011
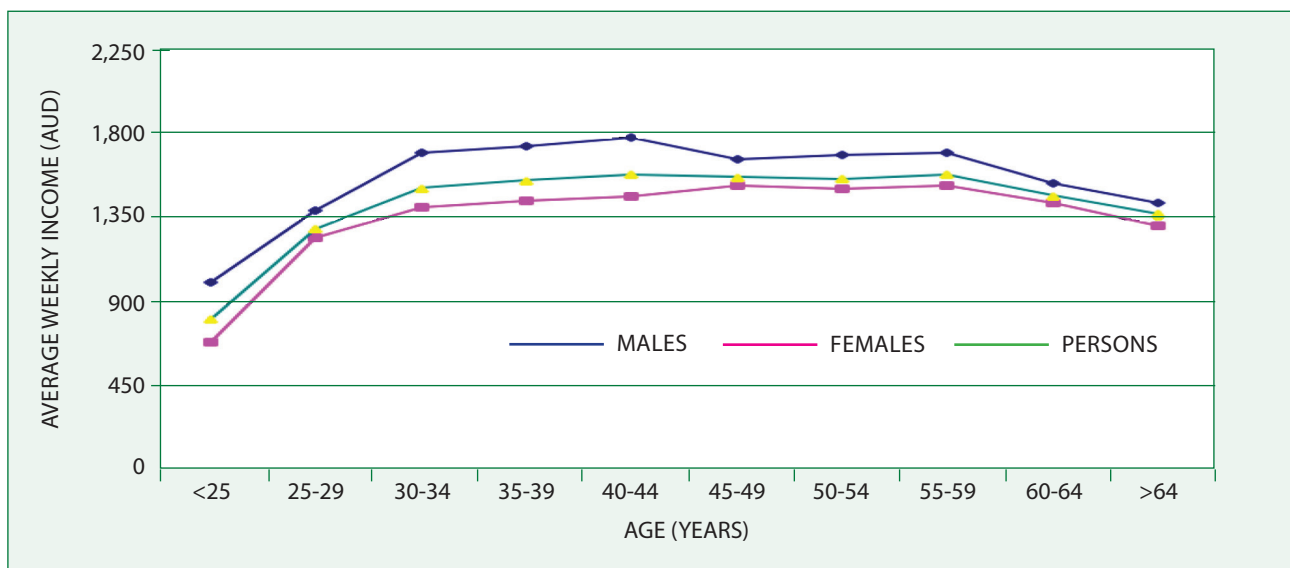
Note: Weekly income refers to the week before the 2011 Census. Source: ABS 2013.

Table 18: Average hours worked per week by managers in aged care residential services, health services and all industries, Australia, 2011

MEASURE OF CENTRAL TENDENCY	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Average weekly hours worked	43.2	42.6	46.2
Median weekly hours worked	42.5	42.9	45.4
Standard deviation (hours)	15.6	15.8	17.7
Coefficient of variation	0.362	0.370	0.383

Note: Weekly income refers to the weeks before the 2011 Censuses.
Sources: ABS 2013.

Working hours of managers

On average, managers in aged care residential services worked 43.2 hours per week in 2011. This was three hours less than the average for all industries (46.2 hours) but slightly more than the average in health services (42.6 hours) (Table 18). The average hours worked by managers of aged care residential services was about the same as that worked in 2006 (43.3 hours). [5]

Managers in the CEO/GM category worked longer average hours (48.5 hours) than all other manager categories in aged care residential services in 2011. This characteristic applied to both female and male managers. However, male managers worked longer hours than female managers (average of +2.3 hours per week) (Table 19).

Part of this difference could be attributed to the alluded larger proportion of female managers working less than 35 hours per week (19.8%) compared with males (11.5%). [9] If full-time managers are defined as those who worked 35 hours per week or more, then the average hours worked per week by male and female managers was about the same (47.9 and 47.6 hours respectively). A difference of 2.5 hours prevailed in the CEO/GM category (Table 20).

Table 19: Average hours worked by managers in aged care residential services by category and sex, Australia, 2011

MANAGER CATEGORY	AVERAGE HOURS WORKED PER WEEK		
	FEMALES	MALES	PERSONS
CEO/GM	47.0	49.8	48.5
Managers (nfd)	39.7	44.1	41.3
Specialist managers	42.9	45.2	43.5
Service managers	39.5	41.6	40.4
All	42.4	44.7	43.2

Note: Hours worked refer to the week before the 2011 Census. Source: ABS 2013.

Table 20: Average hours worked by full-time managers in aged care residential services by category and sex, Australia, 2011

MANAGER CATEGORY	AVERAGE HOURS WORKED PER WEEK		
	FEMALES	MALES	PERSONS
CEO/GM	50.4	52.9	51.8
Managers (nfd)	48.8	47.2	48.2
Specialist managers	47.5	47.8	47.6
Service managers	46.6	45.6	46.1
All	47.6	47.9	47.7

Note: Hours worked refer to the week before the 2011 Census. Full-time managers are defined as those who worked 35 hours per week or more.
Source: ABS 2013.

Table 21: Level of education of managers in aged care residential services, health services and all industries, Australia, 2011

MARITAL STATUS	%		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Never married	13.1	19.2	23.1
Married	65.8	64.8	64.6
Divorced/separated	19.1	14.6	11.3
Widowed	2.0	1.4	0.9
All	100.0	100.0	100.0

Source: ABS 2013.

Marital status of managers

The marital status of managers in aged care residential services was atypical from that in all industries in 2011. Its proportion of never married (13.1%) was considerably lower than the average for all industries (23.1%) and even health services (19.2%), while the proportion of divorced/separated (19.1%) was much higher (19.1%) than the average for all industries (11.3%) and health services (14.6%). The proportion of the smaller number of widowed (2.0%) was also above average for all industries (0.9%) and health services (1.4%). The largest proportion of managers in aged care residential services were married (65.8%). This was close to the average in all industries (64.6%) (Table 20). This pattern was similar to that at the time of the 2006 Census (Table 21 and [5]).

Marital status associated with age and aged care residential services were substantially older than the average for all industries. When marital status for 2011 was standardised for age and sex using all industries distribution of marital status as the standard, it showed that never married and married were below expectation according to the standards while divorced/separate and widowed were well above. This suggests that management positions in aged care residential services attracted not only older people but also people who had gone through marriage that ended up in separation and or widowhood.

Country of birth of managers

In 2011, most managers of aged residential services had been born in Australia (73.2%). This was somewhat more than the average for all industries (70.7%) and health services (72.5%). The same applied to the proportion of 12.4% of those born in the United Kingdom and Ireland compared with the all industries average of 8.2% and health services 10.2%. The proportion born elsewhere was substantially lower at 7.2% compared with the all industries average of 13.4% and health services 10.8% (Table 22).

Table 22: Country of birth of managers in aged care residential services, health services and all industries, Australia, 2011

COUNTRY OF BIRTH	%		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Australia	73.2	72.5	70.7
New Zealand and Oceania	3.1	3.4	3.7
United Kingdom and Ireland	12.4	10.2	8.2
Other Europe	4.1	3.1	4.1
Other	7.2	10.8	13.4
All	100.0	100.0	100.0
Relative difference index	114.0	98.2	Standard

Note: Managers who did not state their country of birth constituted 0.84% in aged care residential services, 0.95% in all industries and 0.90% in health services. The relative difference index = | Σ {[a_i / b_i] *100] -100}| / (2*n); (a_i) is the proportion of managers from country of birth (i) in given service, (b_i) is the proportion of managers from country of birth (i) in all industries, (n) is the number of country groups including other.
Source: ABS 2013

Table 23: Indigenous status of managers in aged care residential services, health services and all industries, Australia, 2011

INDIGENOUS STATUS	%		
	AGED CARE RESIDENTIAL SERVICES	HEALTH SERVICES	ALL INDUSTRIES
Indigenous	0.9	1.5	0.8
Non-Indigenous	99.1	98.5	99.2
All	100.0	100.0	100.0

Note: The number managers who did not state their Indigenous status constituted 0.45% in aged care residential services, 0.36% in health services and 0.50% in all industries.
Source: ABS 2013.

The pattern is similar to that observed in the 2006 Census, but there was a decline in the proportion of those born in Other Europe (Table 22 and [5]). A possible reason was the retirement of older migrants from these countries. There was also a rise in the proportion born in other countries that included Asian countries. Nevertheless, the increase in proportion of managers born in these countries did not match the proportional increment in health services and all industries. The relative difference index using all industries as the standard confirmed the wide difference in the country of birth of managers in aged care residential services in comparison with the average for all industries (Table 22).

Indigenous status of managers

The proportion of managers in aged care residential services who stated to be Indigenous in the 2011 Census was 0.9%. It was approximately the same proportion as in all industries (0.8%) and compared with 1.5% in health services. The small numbers involved and the proportion of managers who did not declare their Indigenous status suggests caution in interpreting the comparisons (Table 23). However, these proportions and order of differences were about the same as those recorded in 2006 Census (Table 23 and [5]). This gives some support to the proposition that they are close to the actual situation.

Discussion

Aged care residential services are concerned with a group of people whose numbers are growing at a much higher rate than the community at large: people age 70 years of age and over. Strategies and services aimed at supporting these people in the community are being developed. However, some need services that can only be provided in a more supportive residential setting. The number of residents in aged care residential service facilities rose substantially at an average annual rate of 1.74% in the period 2006-2011.

Concerns with the quality of care might have led to the consolidation of facilities in terms of their number and size.

This was complemented by an increase in the number of people employed in aged care residential services that led to a reduction in the ratio of 1.2 residents per person employed in 2006 to 1.0 in 2011. The number of managers employed grew even more and resulted in the decline in the ratio of 25.0 residents per manager in 2006 to 20.5 in 2011. The number of managers increased by 32.9% in the 5-year period compared with an increment of 10.9% in the number of managers in all industries and 15.6% in health services.

Variations in the number of managers of aged care residential facilities among the states and territories raise some important questions regarding the organisation, management and quality of care provided to residents. A possible rationale would be that (a) states where a larger proportion of the target population (70 years of age and over) are residents of aged care residential facilities would have a higher proportion of residents at less intensive level of service; while (b) those states that have a larger proportion of the target population living in the community at less intensive level of service would have a proportion of those in residence with need for more intensive services. The corollary would be that those states with a lower number of residents per capita of the target population would require a higher ratio of employees per resident because of the higher proportion of residents requiring higher intensity of service. This would fit with the higher than average proportion of the target population resident in aged care residential facilities in Queensland and the well above average number of residents per employee. However, it would not fit with the well below average proportion of residents in South Australia and the above average number of residents per employee. Another hypothesis relates to the average size of facilities and the number of residents per manager. It might be hypothesised that there are economies of scale and that (c) states with average higher size facilities would have a larger number of patients per manager; while (d) states with average lower size facilities would have less residents per manager. This

would fit Queensland with a larger than average facility size and a larger than average number of residents per manager; but it would not fit with the Australian Capital Territory with a higher than average facility size but a lower than average number of residents per manager. Therefore, there must have been a number of other factors that led to the number of residents per manager, and consequently to the number of managers in each state/territory.

The proportion of aged care residential service managers in different categories was similar to that of the average for all industries in some respects. This applied to the categories of chief executive office/general manager and manager (nfd) but there was a trade-off between the higher proportion of specialist managers in aged care residential services and a lower proportion of service managers. The higher proportion of specialist managers might be attributed to the nature of services that require, among other things, professional nursing care.

Most people employed in aged care residential services in 2011 were females (85.7%) [7] and the same applied to managers of these services (66.4%). However, the proportion of female managers was considerably lower than the proportion of females employed. This asymmetry was less accentuated in the specialist manager category where female managers constituted 73.4% of these managers but was particularly heightened in the case of the category of chief executive officer/general manager where females made up only 46.5% of the total number of these managers.

The average age of managers in aged care residential services was substantially older at 50.0 years in 2011 than the average for all industries of 44.1 and even older than the average for health services at 46.7. There was not much difference between the average ages of male and female managers in all categories, but the average age of males was older in the case of service managers and chief executive officer and general managers, while female average age was older in the categories of specialist manager and manager (nfd). The pattern was for males to have older average ages in the categories where they had a higher than average proportion and the same applied to females.

Managers of aged care residential services came predominantly from three fields of study health (28.4%), management and commerce (26.3%) and social and related fields (13.0%). These proportions were above the average for all industries, as might be expected because of the nature of these services. They were closer to the average proportions in health services, but the relative importance

of social support in aged care residential services was reflected in the larger than average proportion of managers from the social field of study. There were also manifestations of gendered specialisation with female managers having greater representation in health and social fields of study, while males specialisation was in their concentration in management and commerce, engineering, architecture, food and hospitality.

With 47.9% of managers with either a bachelor or post-graduate qualification, managers in aged care residential services had a higher level of education in 2011 than the average for all industries (34.4%). However, this was lower than the average for health services of 58.4%. These educational relativities were reflected in the average income of managers in aged care residential services that at $80,200 per year was above the average of $77,900 for all industries but below the average of $88,300 in health services. The average salary in 2011 represented an increase of 16.9% on the average salary in 2006 that was greater than the rise of 12.9% in health services and 11.5% in all industries. As expected, chief executive officers earned a substantially higher income than other managers but also had higher education qualifications. [9] Male managers in aged care residential services had average incomes larger than female managers in all categories. Some of this difference could be attributed to the larger proportion of females working less than 35-hours per week.

CEOs and GMs worked longer hours per week (48.5 hours) than the average for all categories of 43.2 hours in 2011. In general, male managers worked longer hours than females. The higher proportion of female managers working part-time accounted for most of this difference, as when the average hours of work of those working 35-hours or more were considered the difference almost disappeared: males 47.9 hours and females 47.6. However, female chief executive officers and general managers worked on average 2.5 hours less than males, while the more numerous specialist managers worked about the same hours as males, and service and other managers slightly more.

The marital status of managers in aged care residential services in 2011 was distinct from that in all industries and even health services. Although most managers were married (65.8%), they were more likely to be separated or widowed and less likely to be married or never married than the average for all industries.

Managers in aged care residential services in 2011 were predominantly born in Australia and to a lesser extent in the United Kingdom and Ireland. These constituted 85.6% of managers in these services while on average in all industries managers born in these countries made up 78.9%. Changes that took place in the 5-year period 2006-2011 were mostly related to the fall in the proportion of older managers who were born in other European countries, who might have retired, and a rise in the proportion of those born in other countries that include Asia, who might have arrived more recently, following changes in immigration patterns in past decades.

The proportion of managers who identified themselves as Indigenous people was 0.9% in 2011. This is similar to the proportion in all industries but less than that in health services (1.5%). This representation in 2011 was about the same as that recorded at the time of the 2006 Census.

These analyses of the number and characteristics of managers of aged care residential services in Australia add to the findings of previous work by the authors. They raise a number of questions that are of interest to policy development and organisation of the services of concern. Findings point to aspects of the organisation and staffing of services that deserve further investigation to improve their effectiveness and efficiency. Although it is possible that different pathways might lead to comparable results, it is crucial to gain insights into the actual impact of following alternative approaches as those identified in the differences among the states. Some of these questions require research and additional data that are not available from the Population Censuses used in this review. In addition, it is of vital importance to carry out additional research to assess the relevance of the qualifications of current managers to their work to support them with continuing education. This also applies to the skills and competencies in the management of aged care residential services which need to be identified to make current training programs more relevant and useful.

Competing Interests

The authors declare that they have no competing interests.

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Health Service Managers in Australia: progression and evolution

J M Martins and G Isouard

Abstract

This paper contains analyses of the number and characteristics of health service managers in Australia at the time of the 2011 Census of Population. It updates the work carried out by the authors in relation to the 2006 Census. It gives an estimate of the number of managers in hospitals and medical and other health services separately and as an aggregate. It relates the number of managers per type of service to the resident population and the number of people employed in each service and compares them to averages for managers in all industries. Further, it estimates changes that have taken place between 2006 and 2011. The analyses include the diversity in managers in four categories: chief executive officers/general managers, managers not further defined, specialist and service managers. The paper goes on to examine the age of managers by sex and how they compare with the average for all industries, and some of the factors that might affect the differences encountered. It also investigates changes in the age of managers in the five-year period 2006-2011. In addition, the relative importance of the various fields of study and levels of education of health service managers are examined, as well as changes that have taken place in the inter-census period. The income of health service managers and the hours that they worked are assessed and compared to the average for all industries. Marital status is compared with the average for all industries and differences due to age and sex are considered. The analyses are concerned with evolving trends in the country of birth of health service managers and the Indigenous status of managers in hospitals and medical and other health services, in comparison with the average for all industries. Finally, the paper discusses findings and some of their implications for health service management training and career path development.

Abbreviations: **ABS – Australian Bureau of Statistics; AIHW – Australian Institute of Health and Welfare; CEO – Chief Executive Officer; GDP – Gross Domestic Product; GM – General Manager.**

Key words: **Health service managers; characteristics; health labour force; residential service managers; training and career path development.**

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Introduction

Health services in Australia are going through a period of rapid expansion. This is reflected in the average annual growth in health expenditure in real terms of 6.1% in the five-year period 2005/6-2010/11. [1] Accordingly, the average health expenditure per person increased from $4,721 in 2005/6 to $5,796 in 2010/11, at 2010/11 prices; and total health expenditure rose from 8.7% of Gross Domestic Product (GDP) in 2005/6 to 9.3% in 2010/11. Contrary to some perceptions, most of this increase is due to higher use of services per capita rather than the ageing of the population. [1] There are also some systemic changes taking place in the way services are delivered. [2] In this context, health

service managers are of strategic importance in ensuring that services are effective and efficient. The authors have provided the first comprehensive assessment of the number and characteristics of health service managers in Australia based on the 2006 Census of Population and Housing. [2-5] In that series of articles, the authors included a literature review of related issues in Australia and some other countries. In this paper, the authors present analyses of the number and characteristics of health service managers based on the 2011 Census of Population and Housing and their previous findings for 2006. These findings raise considerable issues in policy development of health services in Australia, in general, and the training of health service managers in particular.

Data specifications

The data specifications prepared by the authors for 2011 are similar to those for the 2006 assessment. This enhances compatibility and comparability of the two data sets. A detailed description of the Australian occupation and industry classifications used by the Australian Bureau of Statistics (ABS) was given in an appendix to the first article by the authors. [2] The data for 2011 were collected by ABS at the time of the 2011 Census of Population and Housing. They refer to the resident population. The information is from answers to questions posed in the census, but ABS conducts post-enumeration surveys to assess the reliability of the information provided. The data in the tabulations for the authors' analyses were compiled by ABS in accordance with the authors' specifications. Australian occupation and industry classifications mentioned were used to identify the place of work (industry) and occupation. The data cover hospitals and medical and other health services both in the public and private sectors. In accordance with the Australian occupation classification, managers are in four categories: managers not further defined (nfd), Chief Executive Officers (CEOs) and General Managers (GMs), specialist managers and service managers. The scope of services covered does

not include pharmacies in the private sector because of the difficulty in sorting out their functions related to the provision of pharmaceutical drugs from those of retailing of cosmetics, toiletries and other products. Other variables were specified according to the 2011 Census coding of age, sex, marital status, field and level of education, Indigenous status, country of birth, hours worked and individual income. Other data used in the analyses are from sources as indicated in the references provided. For comparison purposes, the authors also requested similar tabulations for all industries, excluding farmers and farm mangers because of the nature of their work.

In the compilation of the tabulations, ABS changed figures in some cells to prevent the identification of individuals in the census. This resulted in some small differences in the figures used but does not affect materially the results of the analyses carried out by the authors.

As pointed out, the authors used tabulations prepared by ABS. Nevertheless, it is appropriate to state that most of the information in the tables and figures are the result of analyses made by the authors. In other words, although the sources of the components of the analyses are given in the tables the information is the outcome of the authors' analyses.

Health services: a leading employer

The number of people employed in Australia in the five-year period 2006-2011 grew by about 10.0%. This was more than the rise in the number of Australian residents of 8.3% during the same period. [6] The substantial increment in employment took place in spite of the dampening effect on economic activity of the intervening global financial crisis. The growth in employment was led by the increase in the number of people employed in all health services that rose by 17.4%. The expansion was greater in hospital services in which employment increased by 18.8%, while other medical and health services' employment still grew by 15.9%, well above average for all industries (Table 1).

Table 1: People employed in Australia 2006-2011

PLACE OF EMPLOYMENT	NUMBER OF PEOPLE EMPLOYED (000s)		CHANGE 2006-2011 %
	2006	2011	
All industries (excluding farming)	8,937.3	9,833.8	10.0
Hospitals	303.9	361.0	18.8
Medical and other health services	270.0	312.8	15.9
All health services	573.9	673.8	17.4

Source: ABS 2012.

Table 2: Number of managers employed in Australia 2006-2011

PLACE OF EMPLOYMENT	NUMBER OF PEOPLE EMPLOYED (000s)		CHANGE 2006-2011 %
	2006	2011	
All industries (excluding farming)	1,025.4	1,136.8	10.9
Hospitals	10.9	12.4	14.4
Medical and other health services	8.5	10.0	17.1
All health services	19.4	22.4	15.6

Source: ABS 2012.

It might have been speculated that in an expanding system some economies of scale might be found, especially under difficult economic constraints, and that the number of managers would grow at a lower pace than the number of people employed. On average, this was not the case. The number of managers in all industries rose slightly more (10.9%) than the number of people employed (10.0%). It was in this context that the number of health service managers rose from about 19,400 in 2006 to 22,400 in 2011. The average growth in the number of health service managers was lower (15.6%) than the number of people employed (17.4%) in all health services. However, this average masked different situations in hospital and medical and other health services. The number of managers in medical and other health services increased at a greater rate (17.1%) than the number of people employed in those services (15.9%), and

the number of managers in hospitals rose less (14.4%) than the number of people employed in hospitals (18.8%) (Tables 1 and 2).

Health service managers: population and people employed

It is apparent that in the five-year 2006-2011, there was an increment in the number of people employed in relation to the population as a whole. It is also obvious, the substantial growth rate in employment in health services was considerably higher than the growth rate in population, and that the importance of the health services as an employer was enlarged. Further, the expansion of employment in hospitals was greater than the average for all health services.

Table 3: Number of health service managers per 1,000 people, Australia, 2006-2011

YEAR	NUMBER OF MANAGERS PER 1,000 PEOPLE		
	HOSPITALS	MEDICAL AND OTHER HEALTH SERVICES	ALL HEALTH SERVICES
2006	0.548	0.429	0.977
2011	0.579	0.464	1.043
% Change 2006-2011	+5.7	+8.2	+6.7

Source: ABS 2012b and 2013.

Table 4: Number of health service managers per 1,000 people employed, Australia, 2006-2011

YEAR	NUMBER OF MANAGERS PER 1,000 PEOPLE		
	HOSPITALS	MEDICAL AND OTHER HEALTH SERVICES	ALL HEALTH SERVICES
2006	35.8	31.6	33.8
2011	34.5	31.9	33.3
% Change 2006-2011	-3.6	+0.9	-1.5

Source: ABS 2012b and 2013.

Table 5: Health service managers by service and category, Australia, 2011

CATEGORY	%		
	HOSPITALS	MEDICAL AND OTHER HEALTH SERVICES	ALL HEALTH SERVICES
CEO/GM	10.4	14.7	12.3
Managers (nfd)	3.2	5.3	4.1
Specialist managers	72.6	62.9	68.3
Service managers	13.8	17.1	15.2
		NUMBER	
All Categories	12,448	9,986	22,434

Note: (CEO/GM) chief executive officers and general managers; (Managers nfd) managers not further defined; (Specialist managers) managers who perform specialist functions such as finance, human resources, information technology, medical and other clinical services, nursing and allied health services; (Service managers) managers concerned with catering, cleaning, maintenance and other support services.
Source: ABS 2013.

This meant that on average, while the number of health service managers per 1,000 people in the whole population increased by 6.7% the number of managers per 1,000 employed in health services actually declined slightly by 1.5% during the five-year period (Tables 3 and 4).

The observed decline in the number of managers per person employed in health services was due to the fall of 3.6% in hospital services, as medical and other health services showed an actual small rise of 0.9% (Table 4).

Manager categories

As observed in the 2006 Australian Census of population, [7] the largest managerial category was that of specialist managers that accounted for 68.3% of all managers in health services. This category includes those who perform specialist functions involving planning, organisation, direction, coordination and control in such fields as financing, human resources, sales, production and distribution, information technology and communication. In addition, they are concerned with policy and planning functions, research and development, and engineering. They also include primary healthcare managers, medical administrators, directors of clinical and medical services, deputy, assistant and directors of nursing and senior nursing managers (other than supervisory occupations), directors of pharmacy, physiotherapy, speech pathology, and directors of other allied health services, laboratory and quality assurance managers, in the public and private sectors. Their proportion was higher in hospitals (72.6%) than in medical and other health services (62.9%) (Table 5).

The proportion of senior managers in hospitals (13.6%) was considerably lower than in medical and other health services (20.0%). Similarly, the proportion of service managers in hospitals (13.8%) was less than that in medical and other health services (17.1%) (Table 5). Service managers carry out functions involving catering, cleaning, maintenance and other support services. The proportion of service managers in all health services (15.2%) was substantially lower than the average for all industries (35.8%). [8] This was also the case in 2006 when service managers constituted only 16.8% of all managers in health services. [2]

The growth pattern in the five-year 2006-2011 was not uniform among services and manager categories. In hospitals, the increase in specialist managers (19.3%) was slightly higher than that of more senior managers (18.3%) but the proportion of service managers further declined (-8.5%). Although the proportion of CEOs and GMs showed the largest increase in medical and other health services (33.5%), this was compensated by a decline in managers (nfd), leading to a joint growth in these two categories below average (11.0%). The proportion of specialist managers in medical and other health services remained about the same, while the number of service managers grew more (23.4%) than the average for the four manager categories (17.2%) (Table 6).

Table 6: Growth in health service managers by service and category, Australia, 2006-2011

CATEGORY	2006 = 1.000		
	HOSPITALS	MEDICAL AND OTHER HEALTH SERVICES	ALL HEALTH SERVICES
CEO/GM	1.184	1.335	1.260
Managers (nfd)	1.180	0.757	0.895
CEO/GM/Managers (nfd)	1.183	1.110	1.142
Specialist managers	1.193	1.177	1.186
Service managers	0.915	1.234	1.050
All categories	1.144	1.172	1.156

Note: (CEO/GM) chief executive officers and general managers; (Managers nfd) managers not further defined; (Specialist managers) managers who perform specialist functions such as finance, human resources, information technology, medical and other clinical servicaes, nursing and allied health services; (Service managers) managers concerned with catering, cleaning, maintenance and other support services.
Source: ABS 2012b and 2013.

Age of managers

The average age of health service managers in 2011 was about 46.7 years and the median age about 47.4 years. This average was 2.6 years more than the average for all industries (Table 7). The average age was slightly older than that in 2006 (46.0). [3] The median age also indicated that there has been a small movement towards older ages, as managers seem to have tended to remain in the labour force at older ages. The relative difference index points to greater difference in the age distribution of hospital managers from the all industries average than in medical and other health services. Hospital managers' average age at 47.9 years was about 2.6 years older than in medical and other health services (45.3 years) (Table 7).

The aggregate age distribution of health service managers followed closely that of specialist managers that constituted the largest proportion. As might be expected, more senior managers such as CEOs and GMs (49.0 years) and managers (nfd) (47.0 years) had an older average age than specialist managers (46.6 years) and even more so than service managers (45.5 years). The standard deviation from the average age was much larger for the, on average, younger service managers than for the other categories (Figure 1). This was the case both in hospitals and medical and other health services. [8]

Table 7: Health managers age by service, Australia, 2011

AGE	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Average age (years)	47.9	45.3	46.7	44.1
Median age (years)	48.7	45.1	47.4	44.0
Standard deviation (years)	9.9	11.1	10.5	11.7
Coefficient of variation	0.207	0.245	0.226	0.264
Relative difference index (Standard = All Industries	21.8	8.8	16.0	Standard

Note: The relative difference index = $| \Sigma \{[a_i / b_i) *100] -100\}| / (2*n)$; ($a_i$) is the proportion of managers of age (i) in given health service, (b_i) is the proportion of managers of age (i) in all industries, (n) is the number of age groups.
Source: ABS 2013.

Figure 1: Age distribution of health service managers by category, Australia, 2011
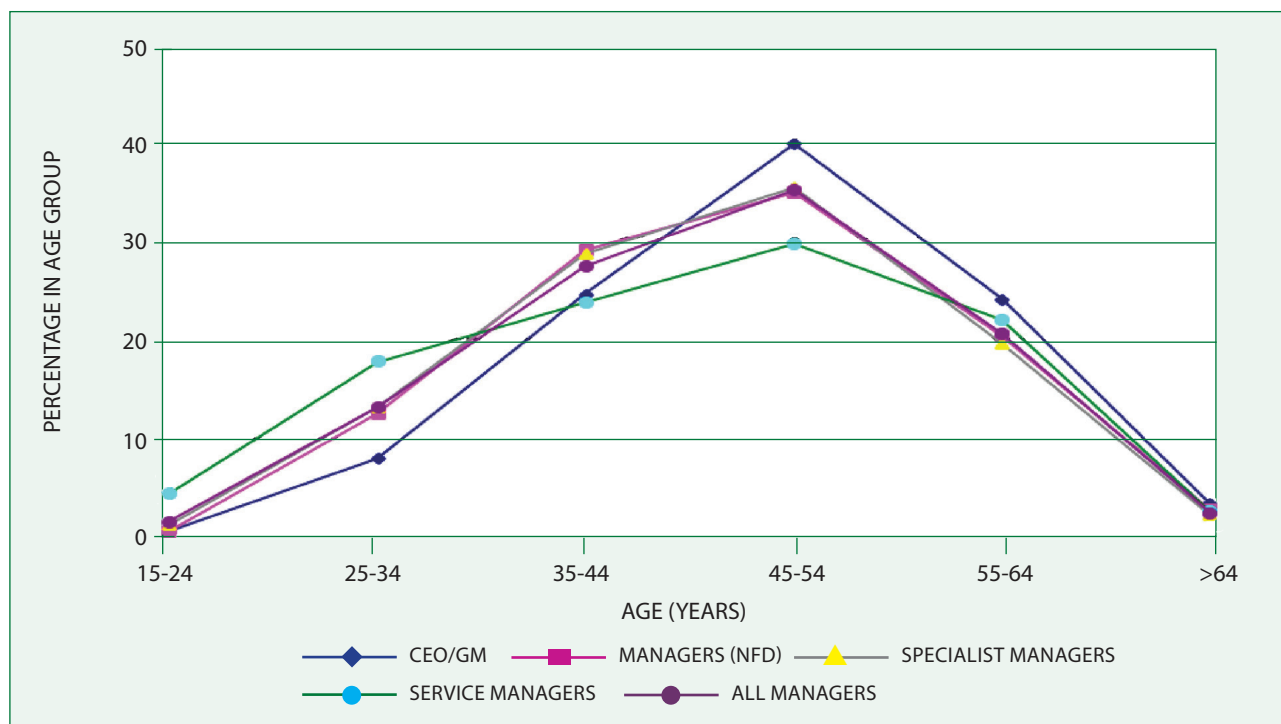
Source: ABS 2013.

Female and male health service managers

People working in health services are predominately females. Females constituted 75.8% of people employed in these services at the time of the 2011 Census. This was considerably different from the average for all industries of 47.0%. Hospitals had a higher proportion of females employed (78.0%) than medical and other services (73.2%). An index of relative difference using the sex distribution of all industries as a standard confirms the large difference between health services and all industries and hospitals and medical and other health services (Table 8).

There has been only a slight decline of less than one percent in the proportion of females employed in health services since 2006. [3] The authors have followed ABS and other definitions of sex and gender. Sex is defined as the biological characteristics of males and females. Gender refers to psychological and social characteristics that are culturally determined from belief systems as of what masculine and feminine behaviour is or ought to be.

Table 8: Sex distribution of people employed in health services and all industries, Australia, 2011

SEX	%			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Females	78.0	73.2	75.8	47.0
Males	22.0	26.8	24.2	53.0
All	100.0	100.0	100.0	100.0
Relative difference Index	31.1	26.3	28.9	Standard

Note: The relative difference index = $| \Sigma \{[a_i / b_i] *100] -100| / (2*n)$; ($a_i$) is the proportion of people employed of sex (i) in given health service, (b_i) is the proportion of people employed of sex (i) in all industries, (n) is the number of sex groups.
Source: ABS 2013.

Table 9: Sex distribution of managers in health services and all industries, Australia, 2011

SEX	%			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Females	62.8	59.8	61.5	36.3
Males	37.2	40.2	38.5	63.7
All	100.0	100.0	100.0	100.0
Relative difference Index	28.6	25.4	27.2	Standard

Note: The relative difference index = | Σ {[a_i / b_i) *100] -100]| / (2*n); (a_i) is the proportion of managers of sex (i) in given health service, (b_i) is the proportion of managers of sex (i) in all industries, (n) is the number of sex groups.
Source: ABS 2012b and ABS 2013.

Following the sex distribution of people employed in health services, the proportion of female mangers in health services was greater (61.5%) than that of males (38.5%). The proportion of female managers in hospitals was higher (62.8%) than in medical and other health services (59.8%). This was considerably different from the average for all industries (36.3%) (Table 9). It is apparent that even in hospitals, the proportion of female managers is lower than the proportion of females employed (Tables 8 and 9).

The proportion of female specialist managers (64.0%) was higher than average for all managers in health services (61.5%), while the proportion of female CEOs and GMs (53.7%) was well below the average. The same applied to

service managers (55.9%) (Table 10). However, there was a slight rise in the proportion of female managers of about two percent in each category since 2006, with the exception of service managers where there was a small decline. The increase in the proportion of female CEOs and GMs and managers (nfd) was particularly large in hospitals since 2006. [3,8]

On average, female health service managers (46.2 years) were about 1.4 years younger than males (47.6 years). The difference in ages was narrower among the older CEOs and GMs (0.8 years) and greatest among the youngest service managers (3.7 years) (Table 11).

Table 10: Sex distribution of health service managers by category, Australia, 2011

SEX	%				
	CEO/GM	MANAGERS (NFD)	SPECIALIST MANAGERS	SERVICE MANAGERS	ALL HEALTH SERVICES
Females	53.7	63.6	64.0	55.9	61.5
Males	46.3	36.4	36.0	44.1	38.5
All	100.0	100.0	100.0	100.0	100.0

Source: ABS 2013.

Table 11: Age of health service managers by category and sex, Australia, 2011

SEX	AVERAGE AGE (YEARS)				
	CEO/GM	MANAGERS (NFD)	SPECIALIST MANAGERS	SERVICE MANAGERS	ALL HEALTH SERVICES
Females	48.6	46.5	46.2	43.9	46.2
Males	49.4	47.9	47.2	47.6	47.6
All	49.0	47.0	46.6	45.5	46.7

Source: ABS 2013.

Table 12: Distribution of health service managers by field of study and all industries, Australia, 2011

FIELD OF STUDY	%			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Health	31.3	26.2	29.0	2.8
Management and commerce	28.8	27.3	28.1	23.8
Social and related fields	9.6	11.5	10.4	9.1
Natural and physical sciences	3.1	7.5	5.1	2.6
Engineering and related fields	4.7	3.3	4.1	12.3
Education	2.0	2.8	2.3	4.0
Food, hospital and personal care	2.0	1.4	1.8	3.0
Information technology	2.4	1.6	2.0	2.8
Architecture and building	1.1	0.6	0.9	5.4
Other*	15.1	17.8	16.3	34.2
All fields	100.0	100.0	100.0	100.0
Relative difference index	60.4	62.3	61.2	Standard

Note: (*) Other includes managers whose field of study was inadequately described, not stated or without a field of study (in relation to post-school qualifications). The relative difference index = $| \Sigma \{[a_i / b_i] *100] -100\}| / (2*n)$; (a_i) is the proportion of managers from the field of study (i) in given health service, (b_i) is the proportion of managers from field of study (i) in all industries, (n) is the number of fields of study groups (including other). Source: ABS 2013.

The examination of the field of study of health service managers indicates that they were more highly specialised than managers in all industries. As expected, the largest proportion came from health (29.2%) but this was closely followed by management and commerce (28.1%). Other fields of study of relative importance were social and related areas (10.4%), physical sciences (5.1%) and engineering (4.1%). The distribution in 2011 was similar to that at the time of the 2006 Census. Nevertheless, there was a small increase in the proportions in the fields of study of health and management and commerce, in both hospitals and medical and other health services (Table 12). [4] The index of relative difference using the distribution of fields of study

in all industries as the standard confirmed the substantial difference between the fields of study of managers in health services and the average for all industries (Table 12).

There was a substantial degree of specialisation in fields of study of female and male health service managers. The most apparent ones were the specialisation of males in the fields of study of architecture/building (92.5%), engineering (90.1%) and information technology (76.6%). To a lesser extent female specialisation in the health field of study was also a feature of the distribution (71.0% against a female average of 61.5% for all fields of study) (Table 13). This pattern of specialisation was similar to that observed in 2006. [4]

Table 13: Fields of study of health service managers by sex, Australia, 2011

FIELD OF STUDY	% SEX			FIELD OF STUDY %		
	FEMALE	MALE	ALL	FEMALE	MALE	ALL
Health	71.0	29.0	100.0	33.5	21.9	29.0
Management and commerce	58.8	41.2	100.0	26.9	30.1	28.1
Social and related fields	69.0	31.0	100.0	11.7	8.4	10.4
Natural and physical sciences	51.0	49.0	100.0	4.2	6.4	5.1
Engineering and related fields	9.9	90.1	100.0	0.7	9.6	4.1
Education	75.0	25.0	100.0	2.9	1.5	2.3
Food, hospital and personal care	60.6	39.4	100.0	1.7	1.8	1.8
Information technology	23.3	76.7	100.0	0.8	4.0	2.0
Architecture and building	7.5	92.5	100.0	0.1	2.1	0.9
Other*	66.4	33.6	100.0	17.6	14.2	16.3
All fields	61.5	38.5	100.0	100.0	100.0	100.0

Note: (*) Other includes managers whose field of study was inadequately described, not stated or without a field of study (in relation to post-school qualifications).
Source: ABS 2013.

Level of education of managers

Health service managers had a considerably higher level of education than the average for all industries. More than half (58.4%) had either a bachelor or a post-graduate level of education compared with about a third (34.4%) in all industries. This applied to both hospitals and medical and other health services, but especially to hospital managers. A relative difference index using all industries as the standard indicated that the differences were considerable. On average,

the level of education of managers in hospitals tended to be more advanced than in medical and other health services. (Table 14).

As might be expected, the level of education of CEOs and GMs was a great deal higher than the average for managers in health services. About 67.6% had a bachelor or post graduate degree compared with an average for all health service managers of 58.4%. This was closely followed by specialist managers with 65.0%, but CEOs and GMs had a

Figure 2: Level of education of health service managers, Australia, 2011
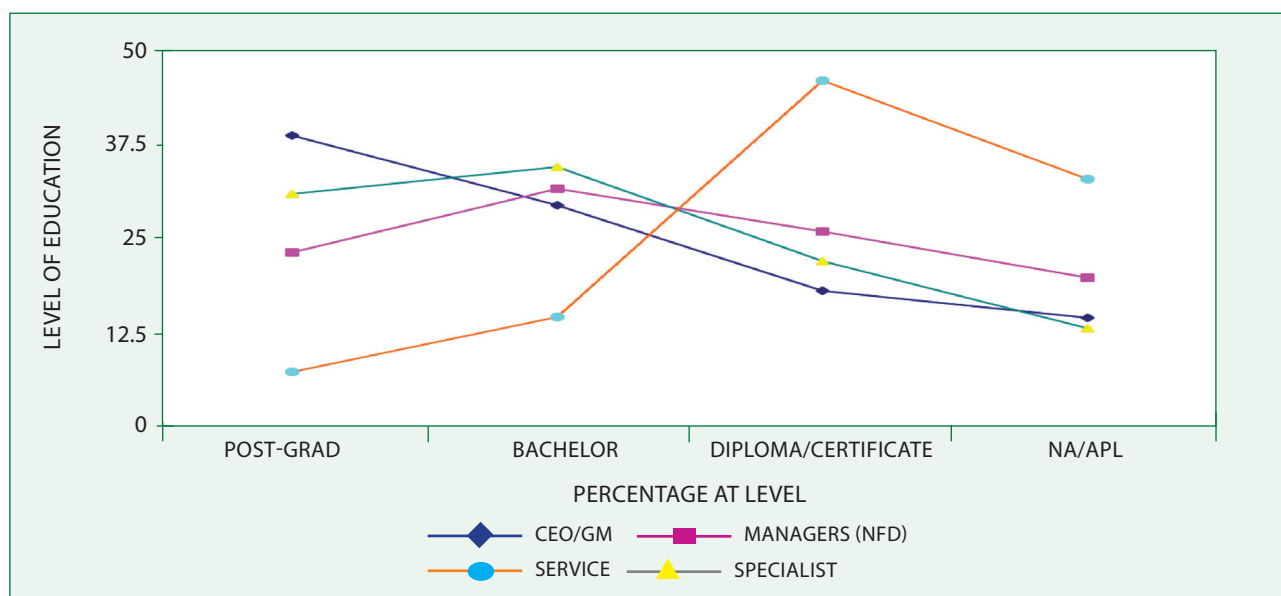
Source: ABS 2013.

Table 14: Level of education of health service managers and all industries, Australia,2011

LEVEL OF EDUCATION	% ALL LEVELS			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Post-graduate	32.1	22.4	27.8	11.7
Bachelor	29.6	31.8	30.6	22.7
Diploma/Certificate	23.4	27.4	25.2	32.5
Not applicable/stated (*)	15.0	18.4	16.5	33.1
All	100.0	100.0	100.0	100.0
Relative difference index	35.8	23.9	30.5	Standard

Note: (*) Not applicable/stated includes those who have education at school level. The relative difference index = | Σ {[a_i / b_i) *100] -100}| / (2*n);
(a_i) is the proportion of managers with level of education (i) in given health service, (b_i) is the proportion of managers with level of education
(i) in all industries, (n) is the number of levels of education (including not applicable/stated).
Source: ABS 2013.

higher proportion with post-graduate qualifications (38.4%) than specialist managers (30.7%) (Figure 2).

The level of education of health service managers rose between 2006 and 2011. In 2006 55.8% of managers had either a bachelor or higher degree against 58.4% in 2011. The rise took place in both hospitals and medical and other health services (Table 14). [4]

The level of education varied by sex and service. On average 58.9% of female managers in all health services had a bachelor or higher level of education and males 57.3%. The proportion of female managers in hospitals with this level of education was considerably higher (64.7%) than males

(56.5%); the inverse applied in medical and other health services: males 58.2% and females 51.6% (Table 15).

Income of managers

On average health service managers earned $1,693 per week in 2011 or the equivalent of about $88,300 annually. This was 13.2% more than the average for all industries of $1,495 per week or about $77,900 per year. Managers in hospitals had the highest average income of $1,762 per week or about $91,900 per year, and managers in medical and other health services earned $1,607 per week or about $83,800 per year (Table 16).

Table 15: Level of education of health service managers by sex, Australia, 2011

FIELD OF STUDY	% ALL LEVELS					
	HOSPITALS		MEDICAL AND OTHER HEALTH		ALL HEALTH SERVICES	
	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES
Post-graduate	33.6	29.5	20.8	24.8	28.0	27.3
Bachelor	31.1	27.0	30.8	33.4	30.9	30.0
Diploma/Certificate	19.4	30.0	27.8	26.9	23.0	28.6
Not applicable/stated (*)	15.9	13.4	20.7	14.9	18.0	14.1
All levels	100.0	100.0	100.0	100.0	100.0	100.0

Note: (*) Not applicable/stated includes those who have education at school level.
Source: ABS 2013.

Table 16: Average income of health service managers and all industries, Australia, 2011

MEASURE OF CENTRAL TENDENCY	GROSS WEEKLY INCOME ($)			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Median income	1,743	1,557	1,675	1,401
Average income	1,762	1,607	1,693	1,495
Standard deviation	627	701	665	755
Coefficient of variation	0.356	0.436	0.393	0.505

Note: The gross weekly income was that of the week before the 2011 Census. The figures exclude managers who did not state their income. They constituted 0.6% in health services and 1.3% in all industries. ($) Australian dollars.
Source: ABS 2013.

The deviation from the average income was lower in hospitals (0.356) with the highest average incomes than in medical and other health services (0.436) and all industries (0.505) with lower average incomes (Table 16).

These average incomes of health service managers in 2011 represented a slightly greater rise (12.9%) since 2006 than the increase in the average income of managers in all industries (11.5%). The increment in hospitals (13.8%) was the reason for this difference, as the income of managers in medical and other health services rose only a little more (11.9%) than those in all industries (Table 16 and [4]).

As expected, CEOs and GMs had average incomes that were 18.0% greater than the average for all health service managers. They were followed by specialist managers with incomes 3.5% higher than the average. Managers (nfd) and service managers had incomes that were respectively 6.4% and 39.3% below average. Again, the dispersion from the average was larger among those with lower average incomes (Table 17).

Female managers in health services had average incomes lower than males (82.6% of male average income). This compared with a greater difference in average income of

Table 17: Average income of health service managers by category, Australia, 2011

MEASURE OF CENTRAL TENDENCY	GROSS WEEKLY INCOME ($)				
	CEO/GM	MANAGERS (NFD)	SPECIALIST MANAGERS	SERVICE MANAGERS	ALL HEALTH SERVICES
Median income	2,137	1,559	1,736	1,123	1,675
Average income	1,997	1,585	1,753	1,207	1,693
Standard deviation	660	686	630	561	665
Coefficient of variation	0.331	0.433	0.360	0.464	0.393

Note: The gross weekly income was that of the week before the 2011 Census. The figures exclude managers who did not state their income. They constituted 0.6% in all health services. ($) Australian dollars.
Source: ABS 2013.

Table 18: Average income of health service managers and all industries by sex, Australia, 2011

| SEX	GROSS WEEKLY INCOME ($)			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Female	!,665	1,366	1,553	1,278
Male	1,885	1,875	1,881	1,620
Female % male	88.3	72.9	82.6	78.9

Note: The gross weekly income was that of the week before the 2011 Census. The averages exclude managers who did not state their income. They constituted 0.6% in all health services. ($) Australian dollars.
Source: ABS 2013.

Figure 3: Average income of managers in health services and all industries by sex and age, Australia, 2011
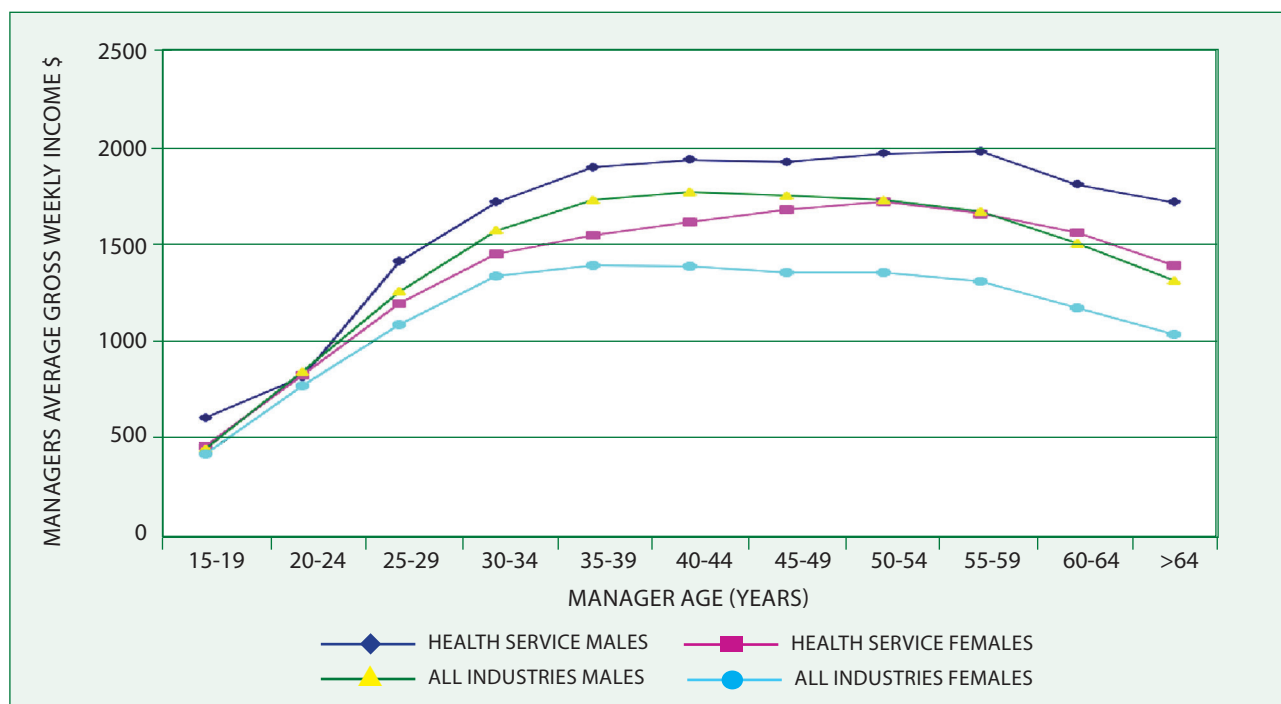
male and female managers in all industries (78.9% of male average income). The average difference masked disparities between hospitals and medical and other health services. In hospitals female managers had average incomes that were 88.3% of those of males. In medical and other health services female managers had average incomes that were only 72.9% of those of males (Table 18).

Income of people employed tends to change with age. [4] As females are younger on average, the difference or part of it might have been attributed to age differences. However, the analysis of income by age clearly demonstrates that female managers earned less than male managers at all ages after 20-24 years of age (Figure 3).

Hours worked by managers

On average health service managers worked 42.7 hours in the week before the 2011 Census. This compared with an average of 46.2 hours in all industries. There was not much difference from the average in the hours worked by managers in hospitals and medical and other health services (Table 19). The average for all health services was close to one hour more (0.7 hours) than the average at the time of the 2006 Census, while the average for all industries actually declined by about the same (0.7 hours) (Table 19 and [5]).

Table 19: Hours worked by health managers and all industries, Australia, 2011

MEASURE OF CENTRAL TENDENCY	WEEKLY HOURS WORKED			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Median hours	43.0	42.8	42.9	45.4
Average hours	42.7	42.4	42.6	46.2
Standard deviation	15.1	16.5	15.8	17.7
Coefficient of variation	0.354	0.389	0.370	0.383

Note: The hours worked refer to the week before the 2011 Census. The figures exclude managers who did not state their hours of work: 0.5% in all health services and1.2% in all industries.

Table 20: Hours worked by health service managers by category, Australia, 2011

MEASURE OF CENTRAL TENDENC	WEEKLY HOURS WORKED				
	CEO/GM	MANAGERS (NFD)	SPECIALIST MANAGERS	SERVICE MANAGERS	ALL HEALTH SERVICES
Median hours	46.5	42.6	42.8	41.4	42.9
Average hours	47.4	41.6	42.2	40.5	42.6
Standard deviation	18.4	17.0	15.3	14.2	15.8
Coefficient of variation	0.389	0.410	0.362	0.351	0.370

Note: The hours worked refer to the week before the 2011 census. The figures exclude managers who did not state their hours of work: 0.5% in all health services.
Source: ABS 2013.

CEOs and GMs worked considerably longer average hours (47.4 hours per week) than specialist managers (42.2 hours), managers (nfd) (41.6 hours) and service managers (40.5 hours) (Table 20).

On average, female managers in health services worked lower hours than male managers. This was the case both in hospitals and medical and other health services. In hospitals, female managers worked 41.2 hours the week before the 2011 census compared with 45.2 hours worked by male managers. The difference was considerably greater

in medical and other health services where female managers worked an average of 39.8 hours and males 46.4 hours (Table 21).

However, the proportion of female managers working part-time tended to be larger than that of males, and some of the disparity might have been the result of the proportions of managers working full and part time. On average, in all industries, 15.7% of managers worked less than 35-hours per week, but the proportion of female managers who worked less than 35 hours per week was 25.3% compared with

Table 21: Hours worked by managers in hospitals and medical and other health services by sex, Australia, 2011

MEASURE OF CENTRAL TENDENCY	WEEKLY HOURS WORKED			
	HOSPITALS		MEDICAL AND OTHER HEALTH	
	FEMALES	MALES	FEMALES	MALES
Median hours	42.1	44.3	40.9	45.3
Average hours	41.2	45.2	39.8	46.4
Standard deviation	15.5	15.0	16.1	16.4
Coefficient of variation	0.365	0.331	0.404	0.353

Note: The hours worked refer to the week before the 2011 census. The figures exclude managers who did not state their hours of work: 0.5% in all health services.
Source: ABS 2013.

Table 22: Proportion of managers working less than 35 hours per week by sex in health services and all industries, Australia, 2011

SEX	PROPORTION OF MANAGERS WORKING LESS THAN 35 HOURS PER WEEK %			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Females	22.6	28.1	25.0	25.3
Males	8.7	11.2	9.8	10.2
Persons	17.4	21.3	19.1	15.7

The hours worked refer to the week before the 2011 census. The figures exclude managers who did not state their hours of work: 0.5% in all health services and 1.2% in all industries.
Source: ABS 2013.

10.2% for males. Similar proportions pertained to health services: females 25.0% and males 9.8%. The proportion of females who worked part-time was somewhat higher in medical and other health services (28.1%) than in hospitals (22.6%) (Table 22).

When full-time managers defined as those working 35 hours or more per week are considered, on average, male managers in health services still worked longer hours per week (48.9 hours) than females (47.0 hours) (Table 23), but the difference was much narrower (1.9 hours) than when all managers were taken into account (5.2 hours) (ABS 2013).

Marital status of managers

The marital status of health service managers, especially those in hospitals was different from managers in all industries. The proportion of never married was lower (19.2%) than in all industries (23.1%). Although the proportion who were married (64.8%) was close to the average for all industries (64.6%), the proportion of divorced or separated was larger (14.6%) than in all industries (11.3%) and the same applied to the smaller number of widowed (1.4% versus 0.9%) (Table 24). These proportions and differences were similar to those observed in the 2006 Census (Table 24 and [5]).

It has been stated that both the sex and age distribution of managers in health services diverged substantially from the average for all industries (Tables 7 and 8) and marital status is associated with age. Therefore, some of the differences in marital status could have risen from the higher proportion of women and older average age of managers in health services. When marital status of managers in health services was standardised for age and sex using all industries as the standard, it showed that the proportion of never married was higher and the proportion of married was lower than would be expected. The proportions of divorced/separated and widowed were about average, after taking into consideration differences in sex and age distribution.

Country of birth of managers

Almost three quarters (72.5%) of health service managers in 2011 were born in Australia. The proportion was higher in hospitals (74.1%) and lower in medical and other health services (70.4%). The average for managers in all industries was 70.7%. Managers born in the United Kingdom and Ireland formed the second highest proportion of 10.2%. New Zealand and Oceania was the place of birth of another 3.4%, other European countries made up 3.1% and all other

Table 23: Average hours worked by full-time health service managers and all industries by sex, Australia, 2011

SEX	HOURS WORKED PER WEEK BY FULL-TIME MANAGERS			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Females	46.9	47.0	47.0	48.6
Males	48.0	49.9	48.9	52.3
Persons	47.4	48.4	47.8	51.11

Note: The hours worked refer to the week before the 2011 census. The figures exclude managers who did not state their hours of work: 0.5% in all health services and 1.2% in all industries. Full-time managers are defined as those who worked 35 or more hours per week.
Source: ABS 2013.

Table 24: Marital status of health service managers and all industries, Australia, 2011

MARITAL STATUS	%			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Never married	17.8	21.0	19.2	23.1
Married	65.2	64.4	64.8	64.6
	83.0	85.4	84.0	87.7
Divorced/separated	15.5	13.5	14.6	11.3
Widowed	1.6	1.2	1.4	0.9
All	100.0	100.0	100.0	100.0

Source: ABS 2013.

Table 25: Country of birth of health service managers and all industries, Australia, 2011

COUNTRY OF BIRTH	%			
	HOSPITALS	MEDICAL AND OTHER HEALTH	ALL HEALTH SERVICES	ALL INDUSTRIES
Australia	74.1	70.4	72.5	70.7
New Zealand and Oceania	3.5	3.4	3.4	3.7
United Kingdom and Ireland	10.3	10.1	10.2	8.2
Other Europe	3.1	3.2	3.1	4.1
Other	9.1	12.9	10.8	13.4
All countries	100.0	100.0	100.0	100.0

Note: (Other) includes managers who did not state their country of birth; they represented 0.90% in the case of health services and 0.95% in all industries.
Source: ABS 2013.

countries 10.8%. The proportion of health service managers born in the United Kingdom and Ireland was larger than the average in all industries and the proportion from other countries was lower (Table 25).

Immigration has played a major role in the distribution of managers by country of birth in general and also in health services between the 2006 and the 2011 censuses. Accordingly, the proportion of health service managers born in Australia, United Kingdom and Ireland declined by 1.8% and 0.5% respectively, while those born in New Zealand and Oceania showed a small rise (0.4%). The major changes were the fall in the proportion of managers born in other countries of Europe by 5.3% and the increment of 7.2% of health service managers born elsewhere (Table 26). This might have been partly due to the aging and retirement of other European migrants who arrived in the post-war period and the rise in the proportion of migrants from Asia in more recent years.

Indigenous status of managers

The proportion of managers who identified themselves as Indigenous persons was on average 0.8% in all industries, at the time of the 2011 Census. The average in health services

Table 26: Country of birth of health service managers, Australia, 2006 and 2011

YEAR	% OF TOTAL				
	AUSTRALIA	NEW ZEALAND AND OCEANIA	UNITED KINGDOM AND IRELAND	OTHER EUROPE	OTHER
2006	74.3	3.0	10.7	8.4	3.6
2011	72.5	3.4	10.2	3.1	10.8
Difference	-1.8	+0.4	-0.5	-5.3	+7.2

Source: ABS 2013 and [5]

Table 27: Indigenous managers in health services and all industries by sex, Australia, 2011

SERVICE/INDUSTRY	INDIGENOUS MANAGERS % ALL MANAGERS		
	FEMALE	MALE	ALL
Hospitals	1.4	0.9	1.2
Medical and other health services	2.0	1.8	1.9
Health services	1.7	1.3	1.5
All industries	1.0	0.6	0.8

Note: The proportions exclude managers who did not state their Indigenous status. They constituted 0.4% in health services and 0.5% in all industries.
Source: ABS 2013.

was almost double at 1.5%. The proportion was greater in medical and other health services (1.9%) than in hospitals (1.2%) (Table 27).

This represents an increment in the proportion of Indigenous managers in health services of about one quarter (0.3%) since the 2006 census (Table 27 and [5]).

The proportion of female Indigenous managers was higher (1.7%) than that of males (1.3%) on average for health services. This was similar to the disparity between female and male Indigenous managers for all industries (Table 27).

The analysis of the distribution of managers according to category shows that the proportion of Indigenous managers in all categories was considerably greater in health services than the average for all industries. In particular, it reveals that the proportion of Indigenous managers in health services was highest in the chief executive officer/general manager category (3.1%) than in any of the other categories (average 1.3%). Although this pattern also prevailed in hospitals it was more accentuated in medical and other health services (Table 28).

Discussion

Health services in Australia have gone through a period of expansion in the five-year period 2006-2011. This expansion was greater than the rate of growth of the population and utilisation has tended to rise for all age groups and cannot be mostly attributed to the ageing of the population that has been gradual. A related indicator is that the proportion of the population 65 years of age and over was 13.3% in 2006 and rose by less than one percent to 14.0% in 2011. Standardised utilisation rates also show that ageing is not the major factor in the rise in utilisation. [9] Health services are human-resource intensive and the expansion was

accompanied by a substantial growth in the number of people employed of 17.4% compared with the average for all industries of 10.0%. The increment was particularly large in hospitals (18.8%) but the number of people employed in medical and other health services also increased (15.9%) at a rate considerably greater than the average for all industries. This rapid growth in employment was associated with an addition to the number of managers in health services per head of population but the number of managers per employee declined. This fall was entirely due to the drop in the number of managers per employee in hospitals, as there was a slight increase in the number of managers per employee in medical and other health services. A feature of the process of change was a further drop in the proportion of managers concerned with services such as catering, cleaning and maintenance. At 15.2% of all managers in health services they were well below the average of 35.8% for all industries (ABS 2013). Out sourcing might be a factor in this continuing decline in the proportion of service managers.

There has been some concern regarding the continuing availability of experienced managers due to their ageing. [3] The average age of health service managers showed only an increase of less than one year in the five-year period 2006-2011: 46.7 years in 2011 and 46.0 years in 2006. Changes in the age distribution over time indicate that managers are staying in employment at older ages. Further, the age distribution of managers points to a large stock of currently specialist managers 35-44 years of age gaining experience who could assume wider responsibilities in future years. A relevant question is the adequacy, in the interim, of the training they will get and their career path that will provide them with a wide range of experience in a changing environment.

Table 28: Indigenous managers in health services and all industries by category, Australia, 2011

SERVICE/INDUSTRY	INDIGENOUS MANAGERS % ALL MANAGERS				
	CEO/GM	MANAGERS (NFD)	SPECIALIST	SERVICE	ALL
Hospitals	1.8	1.0	1.2	0.7	1.2
Medical and other health services	4.3	1.5	1.5	1.4	1.9
Health services	3.1	1.3	1.3	1.1	1.5
All industries	1.1	1.0	0.7	0.8	0.8

Note: (CEO/GM) chief executive officers and general managers; (Managers nfd) managers not further defined; (Specialist mangers) managers who perform specialist functions such as finance, human resources, information technology, medical and other clinical services, nursing and allied health services; (Service managers) managers concerned with catering, cleaning, maintenance and other support services. The proportions exclude managers who did not state their Indigenous status. They constituted 0.4% in health services and 0.5% in all industries.
Source: ABS 2013.

Although the proportion of female managers did not match the proportion of females employed in health services, there was a slight rise in the proportion of female managers in 2011 since 2006 in all categories, especially in the category of chief executive officer, general manager and manager (nfd), except in the case of service managers.

Two fields of study were predominant among health service managers in 2011: health and management and commerce. This was similar to the pattern in 2006. The higher proportion than average for all industries in health is what would be expected but the proportion of managers from the field of study of management and commerce was also greater in health services than in all industries. There was a degree of specialisation by females and males: a greater proportion of females came from fields of study in health, education and social fields while a larger proportion of males came from architecture, engineering and information technology,

Managers in health services had a higher level of education than the average in all industries. The proportion with higher levels of education was larger in hospitals than in medical and other health services. The proportion of health service managers with a bachelor or post-graduate qualification rose farther from 2006 to 2011, both in hospitals and medical and other services.

 In the absence of clearly demarked functions performed by health service managers and related skills and competencies to perform those functions, it could be questioned the relevance of post-graduate diplomas and certificates in the health field to management and the fitness of degrees in management to handle the complex operational nature of health services.

 Health service managers earned about 20% more than the average for all industries in 2011. This was also the situation in 2006. The rise in the average income of health service managers in that five-year period was greater than the average in all industries. The rise in the income of managers in hospitals was the reason for this above average increase in income in the five-year period, as those in medical and other services rose at about average for all industries. As expected, CEO/GM with higher levels of education earned more than the average and service managers with lower levels of education had income below average.

The average income of female managers was about 82.6% that of male managers in health services in 2011. Female managers tended to be younger than males but the differences prevailed at all age groups after 20-24 years of age. Another factor that affected the lower average income of female managers was the higher proportion of them who worked less than 35 hours per week. However, the proportions involved did not fully account for the difference.

Health service managers worked lower average hours than managers in all industries. This was also the pattern in 2006, but there was an increase of about one additional hour worked in health services in 2011. Part of the difference could be attributed to the higher proportion of females in health services and their part-time work. However, when managers working 35 hours per week or more were considered, the difference between health services in 2011 and the average for all industries fell only slightly from 3.6 hours to 3.3 per week. The average hours worked by female managers in health services were lower than those of male managers. Again, the issue of the larger proportion of female managers working less than 35 hours per week could have been a factor. Indeed, when female and male managers in health services working 35 hours per week or more were looked at, the difference in hours worked per week by females was reduced to about 1.9 hours instead of 5.2 hours.

The higher levels of education of managers in health services would point to a longer period in academic training and delay in family formation. The analysis of the marital status of health service managers after standardising for age and sex differences, using the average for all industries as the standard, indicated that the proportion of never married was higher and the proportion of married lower than expected, but the proportions of divorced/separated and widowed to be about average.

The country of birth of health service managers tended to reflect trends in migration over the years. However, in 2011 there was a higher proportion of managers in health services born in Australia, United Kingdom and Ireland than the average for managers in all industries. The inverse applied to managers born in Other Europe and other countries including those in Asia. This was particularly the case in hospitals. This also tended to be the situation in 2006. Further examination of patterns in 2006 and 2011 revealed that the proportion of managers born in Australia, United Kingdom and Ireland showed a small decline, while there was a larger trade-off between the fall in managers born in Other Europe and the rise in managers born in other countries that included Asian countries. This might be attributed to the retirement of managers born in other European countries and the more recent arrival of managers born in Asia.

The figures related to Indigenous people's participation in the management of health services showed that in 2011 their representation was greater in health services than the average for all industries, especially in medical and other health services. The figures also substantiate an increase in the proportion of Indigenous health service managers since 2006. The proportion of managers who did not state their Indigenous status presents a problem in the interpretation of changes that have taken place. Nevertheless, consistency in the proportions in both censuses give some support for the recorded changes over time and across industries.

The analyses carried out in this and previous papers by the authors give insights into the changing numbers and characteristics of health service managers in Australia in the inter-census period 2006-2011. They document growth in health services, the number of employees and managers. They also point to and give evidence of the great difference between the nature of health services and industries at large. All this raises questions that need to be addressed regarding the adequacy of the training of health service managers to ensure the effectiveness and efficiency of services rendered, in the context of rapidly changing technologies and scale of operations that continue to be human-resource intensive. Further, they call for the identification of competencies and skills to promote the purpose of the mission and their incorporation into academic training and continuing education; as well as the deliberate programming of career paths that will provide opportunities to gain relevant experiences.

Competing Interests

The authors declare that they have no competing interests.

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National Consistency in Industrial Awards for Disaster Release for Australian Nurses: an Integrative Review of Enterprise Arrangements

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Abstract

This research explores the types of provisions made available to nurses within Australian public employment agreements to respond to disasters and alternate provisions made available to provide personal property protection and personal care during a disaster. An integrative literature review methodology is used to collect, evaluate, analyse and integrate sources of evidence to inform a discussion on the current enterprise arrangements for nurses with respect to disaster response. Nursing and midwifery public sector enterprise agreements were sourced from each of the eight Australian jurisdictions. These were evaluated for the industrial provisions made available to nurses wanting to assist in responding to disasters. Only five of these agreements mentioned provisions for nurses to assist in disasters. Where these provisions exist, they vary in their consistency, terminology and the quantity of the entitlements, potentially leading to inequality and variability in the financial support frameworks for nurses involved in disaster events.

Abbreviations: DMAT – Disaster Medical Assistance Team; EBA – Enterprise Bargaining Agreements.

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Introduction

Disasters are a relatively common experience, with over 332 natural disasters recorded worldwide in 2011 alone, causing 30,773 deaths, 244.7 million victims and economic damages estimated at over US$366.1 billion. [1] Healthcare delivery is one of the most fundamental components in the immediate response and subsequent recovery from a disaster. Employed as they are in the largest profession in the health workforce, [2] nurses are often called upon to form an important part of the health recovery efforts of disaster response teams, by performing a number of roles in both clinical and non-clinical areas.

The role of nurses in Australian disasters has included the psychosocial support of victims and response personnel, multidisciplinary care coordination and frontline problem solving, and over and above clinical care delivery. [3,4] Nurses have been identified as willing to respond to a disaster either overseas, interstate or locally within their own community and workplace. Recent Australian research found that nurses were particularly willing to attend their workplace in a disaster if they had received formal education pertaining to disasters, had a family disaster plan, did not have children, and worked in an environment in which they perceived their colleagues, managers and organisation to be well prepared and supportive. [5,6] However, nurses who volunteer to be part of an overseas emergency response deployment team have been reported to be underprepared, particularly in relation to not holding a current passport, and inadequacies relating to vaccinations or health require-ments. [7]

The willingness of nurses to assist in disasters is exemplified by their deployment with not-for-profit volunteer organisations such as St John's Ambulance Australia [3,4] and Australian Disaster Medical Assistance Teams (DMAT). [8,9] DMATs are considered an important component within the Australian Government's National Health Emergency Response arrangements, in the provision of health services in response to emergencies of national consequence. [10] Traditionally, DMATs consist of health professionals with varied backgrounds, drawn from various hospitals across the states and territories to form response teams for disaster-affected areas and to provide and maintain a health service. These teams must be self-sufficient and aim not to place a burden on the disaster-affected communities' infrastructure. Nurses who are part of the Defence Forces Reserves may also be deployed; however their release from employment is clearly outlined in legislation.

While the need, role and willingness of nurses to be part of disaster response teams has been established in the literature, [6,11,12] there is a paucity of literature that outlines the established industrial support frameworks or processes to renumerate nurses for their involvement in response and/or recovery efforts.

Aim and significance

Having a better understanding of the industrial support available nationally for nurses to seek remuneration to allow them to support their own community by responding to a disaster or to volunteer their skills to assist a disaster response team, may inform the health sector in providing clearer workforce support and disaster response team sustainability to assist in a disaster. As such, this project examined the available public sector nursing enterprise bargaining agreements (EBA) of each state and territory within Australia, to assess the provisions made available to nurses engaged in local, national and international disaster situations. This includes provisions made to nurses to remain at home to protect life or property from an impending disaster, and provision listed for nurses to respond to a disastrous event in a professional capacity. Throughout this paper, the term EBA refers to a jurisdiction's public nursing agreement with government regarding entitlements. In the different jurisdictions, this could refer to a 'collective', 'industrial' or 'business' agreement.

Method

Design

This project used principles adopted from integrative literature review methodology to collect, evaluate, analyse and integrate sources of evidence to inform this discussion on the EBA for nurses related to disasters. [13] EBA documents where collected by internet searching of relevant state and territory health department websites.

Data collection

Documents were sought that refer to the public sector industrial provisions for nurses who request to be absent from their place of employment for the purpose of defending their home, caring for family, or to work as part of a disaster assistance team.

While it is acknowledged that such industrial or workplace provisions may be mentioned in documents such as hospital or health service policies, procedures or directives, the focus for this research was on EBAs between state and territory governments and industrial organisations. EBAs are publically available and are the key documents in determining industrial matters rather than institutional policies, procedures or directives. Private sector agreements were excluded due to their lack of public availability identified by the data search methodology utilised in this research. Additionally, the documents reviewed were the current EBAs as listed in Table 1 reviewed in May 2013.

Through contacting nursing industrial groups from the different jurisdictions across Australia, a total of eight public sector EBAs were identified; one from each state and territory. These EBAs were reviewed to ensure that they met the design search of this integrative review.

Evaluation of the EBAs' content

Within the eight EBAs, key sections relating to disaster relief were examined. This process used key word search terms within the documents such as 'disaster', 'emergency', 'bush-fire', 'flood', 'cyclone' and 'response' to identify key aspects of the EBAs pertaining to the project's aim. Key words relating to 'emergency department' and 'emergency duty' were not included because these did not relate to disaster assistance.

Ethical considerations

Approval from a Human Research Ethics Committee was not sought, as all documents reviewed in this research project are publically available, and this project did not involve the recruitment or participation of human participants.

Findings

Five out of the eight Australian state or territory Nursing Public Sector EBAs outline provisions for nurses that are either directly affected by an impending disaster in terms of protection of life or property, or nurses who have volunteered to respond to a disaster with a not-for-profit health organisation such as St John's Ambulance Australia or the Australian Red Cross. Where these provisions exist, they vary in their consistency, terminology and the quantity of the entitlements, potentially leading to inequality and variability in the financial support frameworks for nurses involved in disaster events.

Five of the eight EBAs meet the key word search inclusion criteria mentioned above; that is, they include some provisions for nurses during a disaster (see Table 1).

The details of the five EBAs that contained information pertaining to disasters are outlined in Table 2.

Of the five enterprise agreements reviewed, the following key elements were explored: the purpose of including information in the EBA; the maximum time period for which an employee may take leave during a disaster; whether this leave was paid or unpaid; and who approves the leave for an employee.

Within the five EBAs, reference was made to nurses defending their homes or family in the event of natural disaster (n=3), and nurses volunteering with an emergency service organisation (n=4). One of the EBAs made reference to both situations. No reference was made to responding with the DMAT. Overall, staff entitlements varied across the EBAs. This variability in entitlements was related to both the entitled time available to assist, and remuneration during this period. Similarly, the authorised person to approve this type of leave varied, from the individual hospital's CEO (n=3) to the nurse's employer (n=2).

Discussion

Consistency

There are inconsistencies across the five EBA documents in the terminology used to define nurses' entitlements during a disaster. For example, some EBAs used terms such as 'urgent pressing necessity' or 'emergency' to describe a disaster or emergency event. There was also variability in the level of detail within the EBAs, with some agreements providing short dot-point information, while others provided detailed paragraphs of information and processes relating to entitlements.

With the move towards a national Australian regulatory body aimed at providing a nationally consistent approach to the regulation of health professionals, including nurses and midwives, the industrial bodies should also seek opportunities to standardise aspects of the EBA, where

Table 1: Agreements reviewed

STATE/ TERRITORY	MEETS CRITERIA	EBA TITLE
Australia Capital Territory	Yes	ACT Public Sector Nursing and Midwifery Enterprise Agreement 2011 -2013
New South Wales	Yes	Public Health System Nurses and Midwives (State) Award 2011
Northern Territory	No	Northern Territory Public Sector Nurses and Midwives' 2011 -2014 Enterprise Agreement
Queensland	No	Nurses and Midwives (Queensland Health) Certified Agreement (EB8) 2012
South Australia	Yes	Nurses/Midwives (South Australian Public Sector) Enterprise Bargaining Agreement 2010
Tasmania	No	Nurse and Midwives Heads of Agreement 2010
Victoria	Yes	Nurses And Midwives (Victorian Public Sector) (Single Interest Employers) Enterprise Agreement 2012-2016
Western Australia	Yes	Registered Nurses, Midwives and Enrolled Mental Health Nurses Australian Nursing Federation–WA Health Industrial Agreement 2010

Table 2: Findings from enterprise arrangements

STATE/ TERRITORY	PURPOSE	MAXIMUM DURATION	PAID LEAVE	AUTHORITY TO APPROVE	NOTES
Australian Capital Territory	An employee who is a member of a relevant emergency service, including: • a State or Territory Emergency Service; • a fire-fighting service; • a search and rescue unit; or • other volunteer service performing similar functions is eligible for community service leave for voluntary emergency management	4 days	Yes, at ordinary hourly rate of pay	Chief Executive	Leave is non-cumulative Leave to fulfil an obligation in the event of a civil emergency The Agencies will continue to provide training for their employees in areas including, but not limited to: • incident management and response • disaster prevention, management and response
	Affected by a disaster that has destroyed or significantly damaged the employee's usual place of residence or its contents	3 days	Yes	Not mentioned	
	Work or employment that the Chief Executive considers is in the interests of the defence or public safety of the Commonwealth or the Territories	2 years	No	Chief Executive	
New South Wales	In a case of pressing necessity (eg, where an employee is unable to attend work because of adverse weather conditions that either prevent attendance or threaten life or property)	1-6 working days, depending on years of service	Yes	Chief Executive or authorised delegate may grant FACS leave to an employee	The facility must have a contingency plan to backfill nurses in the event that some are called out as part of a disaster team
South Australia	Protection of the employee's family/property directly affected by flood or bushfire	Not mentioned	Yes	Not mentioned	A matter that must be attended to by the employee that cannot be reasonably attended to by the employee outside the employees ordinary hours of work
Western Australia	For an active volunteer member of: • State Emergency Service • St John's Ambulance Australia • Volunteer Fire and Rescue Service • Bush Fire Brigades, • Volunteer Marine Rescue Services Groups or • FESA Units	Not mentioned	Yes	Granted by the employer	Subject to operational requirements
Victoria	Each Employer will develop a policy that facilitates an Employee who is a member of a voluntary emergency relief organisation including, but not limited to: • the Country Fire Authority • Red Cross • State Emergency Service and • St John's Ambulance to be released from normal duty without loss of pay	Not mentioned	Yes	Granted by the employer	Provided that such leave can be facilitated without unreasonably affecting the operations of the Employer Also includes required qualification and requalification training

the jurisdictional context supports this. Disaster response provisions should be part of this standardisation effort. As nurses from different parts of Australia are deployed as part of emergency response teams, the discrepancies and inequities in the way that the legislation has responded to releasing them from their workplaces will be identified.

This standardisation across EBAs may provide greater clarity for health service managers when approving entitlements, and support nurses wishing to defend their property or respond to assist in a disaster.

No health service focus

At present, the emphasis in the EBA is on nurses either defending their property or family, or volunteering with a non-health-related organisation such as the State Emergency Services or Rural Fire Service. No reference is made to response through DMAT. Commonly, nurses respond to calls for assistance for overseas deployment with the Australian government through the DMAT, and entitlements surrounding this engagement need to be clear and transparent. Overall, EBAs should include a focus on supporting nurses volunteering or responding as a part of health-related disaster response organisations such as St John Ambulance Australia or the Australian Red Cross, because this is where nurses are asked to assist. Having a clear industrial stance on this issue may also help nurses to make their decision regarding whether to volunteer.

Equity across jurisdictions

Historically, an Australian health response comprises members from a number of organisations sending health-care workers from various jurisdictions. [14] Variability in EBAs may cause inequity among responding nurses, as nurses from neighbouring jurisdictions may be working next to each other, while their EBAs and subsequent entitlements may differ. For example, regarding time allowed for deployment with a voluntary organisation, a number of EBAs outline no maximum time period in the agreement, whereas others mention no similar entitlements. The variability of these entitlements may lead to a situation in which nurses from particular states or territories are being renumerated while those from other states are not. This inequity could reduce the sustainability of a health response if nurses from states or territories with no remuneration provisions have to return to their normal workplaces to ensure their income levels are protected. Since disaster response is often approached at the national level, the entitlements for nurses during disasters should also be equal, to ensure equity and sustainability in the health response to a disaster.

Authority to approve disaster leave requests

The EBAs reviewed outline the need for entitlements to be approved by differing levels of health service management, such as the employees' Chief Executive Officer, or simply the 'employer'. Most agreements stated that the approval to be released from work during a disaster is based on 'operational needs', but no further decision-making support process or systems are provided. Further, the EBAs provide no guidance to health service managers on how to evaluate the health needs of the disaster-affected jurisdictions over the needs of their own service. There is a paucity of research outlining or evaluating the decision-making process or the experiences of health service managers when considering health workforce management in a disaster. On exploring this issue further, no literature was identified that outlines any required training or development for health service managers in relation to disaster management. As such, health service managers may be required to make workforce decisions without the support of formal preparation and without any formal process or policy to support their decision-making. State and/or territory level health workforce managers should undertake health workforce planning and response approvals within a supported nationwide framework. This will ensure that the national nursing workforce is effectively utilised to support health infrastructure during a disaster.

Limitations

This review was undertaken in May 2013. The agreements reviewed within this discussion may have changed since this review date. Private sector agreements were excluded due to their lack of public availability identified by the data search methodology utilised in this research. It is also acknowledged that state and/or territory governments who are responsible for the public sector EBAs may have additional policies or procedures relating to provision for nurses in relation to disasters including AUSMAT arrangements that have not been included with the EBA and therefore in this research.

Conclusion

There is no national approach by nursing industrial organisations to standardise provisions related to an emergency event or disaster. This is despite the fact that disasters require a substantial and sustainable health response made up by a range of healthcare professionals including nurses.

Those EBAs that do contain provisions are notable in the variability of their definitions of disasters and the termin-

ology used to define the entitlements for nurses willing to respond to disasters. This variability may lead to inequity among nurses who are willing to respond to disasters, with those from some states or territories being financially supported while others are not, even when they are undertaking the same role and responsibilities. Such inequity affects the sustainability of disaster response efforts. The health service management workforce planning and approval for nurses willing to respond to disasters is also variable and not supported by any detailed process, policy or formal training programs. As such, there is a clear requirement to implement a national approach within all agreements across Australia that clearly defines what constitutes a disaster, what terminology is used to describe nurses' entitlements in responding, and how to promote nurses responding by volunteering with health-based organisations.

Competing Interests

The authors declare that they have no competing interests.

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An Allied Health Assistant Helps Reduce Difficulties Faced by Older People when Returning Home from Hospital

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Abstract

Objectives: The first objective was to describe some health outcomes of a small cohort of elderly people in the Australian Capital as they returned home from an acute hospital admission. The second objective was to develop, implement and evaluate the effect of an Allied Health Assistant (AHA) in assisting older people after they return home from hospital.

Design: The study was conducted in three phases. Phase one followed 17 elderly people as they returned home after an acute admission to hospital. Functional, participatory and quality of life measurements were administered. Phase two introduced the role of an AHA as a potential solution to the difficulties faced by elderly people. Phase three followed a new cohort of 14 elderly people and reapplied the measurements used in phase one to identify any notable effects of the AHA on their wellbeing.

Setting: A large teaching hospital and in the homes of elderly people who were recently discharged from hospital.

Main Outcome Measures: Centre for Allied Health Excellence (CAHE) patient post questionnaires (patient, carer, community agency and general practitioner).

Results: The first cohort experienced similar difficulties in the immediate post-discharge period consistent with the literature. The inclusion of an AHA effectively assisted in meeting some of the needs of older people as they moved from an acute care episode into their homes.

Conclusion: The use of an AHA is a potentially useful workforce strategy in meeting some of the needs of elderly people as they move from an acute care hospital episode back home.

Key words: Elderly, transitional care, allied health assistant.

Abbreviations: ACT – Australian Capital Territory; AHA – Allied Health Assistant; AQOL – Australian Quality of Life; CAHE – Centre for Allied Health Excellence; TCH – The Canberra Hospital.

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Introduction

Over the next 30 years aged care services will be challenged by a significant increase in people over 65. [1] This will create a number of challenges including an increase in demand for health services and a continued preference for independent living at home.

In addition, a projected shortage of qualified health professionals will require creative and flexible workforce solutions to meet growing demand. One of the policy initiatives suggested by the Australian Productivity Commission [1] to meet these challenges was to look at ways of developing current roles to overcome inefficiencies and inflexibilities in the workforce. Specifically, it suggested improvements in service efficiency when crossover of care

exists. This is relevant to aged care services when older people are making the transition between systems (eg, hospital to home).

The literature shows that the first week after discharge from an acute setting can raise a variety of problems including difficulty with tasks such as household activities, activities of daily living, managing medications, not being aware of services; information needs; social problems and anxiety. [2-5]

A key to assisting older adults to cope better at home following an admission to hospital is to involve them in planning and decision-making during the hospital stay. [6] However evidence suggests that on the whole this is not done well. [7] Where discharge planning is done well, interventions are conducted during an acute episode as well as in the home immediately after discharge. [8-10] In other words, interventions are timely and well planned.

The aim of this research was to:

i) Describe the extent to which the issues described in the literature occurred in a sample of elderly people in the Australian Capital Territory (ACT).

ii) To examine the role of an Allied Health Assistant (AHA) to meet some of the needs of elderly patients moving across the acute and community sectors.

Methodology

Inclusion criteria and sampling

To be included in the project, all patients: consented to be involved with the project after reading the patient information sheet; were over 65 and admitted to The Canberra Hospital (TCH); were to be discharged home to an ACT residence or an aged care facility; and were not receiving or about to receive services from the Transitional Therapy and Care Program, (a local service providing allied health input and case management after hospital discharge). A convenience sampling method was used. All patients of TCH were potential participants regardless of length of stay. All participants read and signed a participant information sheet and consent form. The research was conducted in three phases: collection of baseline data: development of a new workforce role; and application and assessment of the workforce role. The ACT Health Directorate Human Research Ethics Committee granted ethics approval for this project. The project team consisted of the Director of Allied Health of the Aged Care and Rehabilitation Service and two part time project officers.

Outcome measures

The outcome measures chosen reflect the main areas that can be affected in the immediate period post discharge from hospital, as reported in the literature. See Table 1.

Table 1: Outcome measures

Patient/ Outcome Measures (Administered at 1-2 weeks post discharge and then at 5-6 weeks post discharge)	Centre for Allied Health Excellence (CAHE) patient post discharge questionnaire [11] Barthel Index [12] Lawton IADL Assessment [13] Australian Quality of Life Measure (Aqol) [14]
Carer Outcome Measures (Administered at 1-2 weeks post discharge and then at 5-6 weeks post discharge)	CAHE carer post discharge questionnaire [15]
Community Agency Outcome Measures (Measured once at 5-6 weeks post discharge)	CAHE community agency questionnaire [16]
Medical Practitioner Outcome Measures (Measured once at 5-6 weeks post discharge)	CAHE medical practitioner questionnaire [17]

Table 2: Patient characteristics in phase 1 and phase 2

	PHASE 1 N=17	PHASE 2 N=14
Sex (male/female)	8/9	7/7
Mean age (SD)	77.94 (6.83)	83.28 (8.53)
Mean length of stay in days	20.83 (18.09)	9.86 (4.89)
Median length of stay in days	9.5	11
Lawton ADL score	19.74 (7.75)	16.26 (5.58)
Barthel Index	16.61 (3.58)	16.26 (5.58)

Phase one

In phase one ten patients from the aged care ward and ten patients from any other wards of TCH who met the inclusion criteria and who consented to be involved were recruited to the project. Patients in the aged care ward are generally over the age of 65 with multiple medical conditions requiring specialist input from a geriatrician and associated allied health and nursing. Most other medical and surgical wards at TCH have elderly patients admitted to them. These patients are admitted under the relevant physician or surgeon depending on their condition. One patient dropped out of phase one as they became too unwell to continue. Two other patients withdrew from the study with no reason given.

Table 2 describes patient characteristics in phase one and phase three. The notable difference between the groups was the average length of stay. The phase one participants had an average length of stay of 20.83 days but one patient who was in hospital for 148 days affected this result. The median length of stay is therefore included for both groups as it accounts for the significant outlier in phase one. None of the participants was living in an aged care facility, even though the selection criteria allowed for this.

During phase one, several qualitative and quantitative measures were used to measure key outcomes at one to two weeks post discharge and at five to six weeks post discharge. The aim of this data collection was to highlight specific information around the process of discharge from hospital, the coordination of post discharge services, the timeliness of service as well as any changes in daily living function. The information collected in this phase was compared against existing literature and to inform the workforce solution developed in phase two.

In addition to these outcome measures, all participants' medical notes were reviewed for evidence of communication of a discharge plan. This included evidence of a multidisciplinary discharge plan being given to the patient and the relevant general practitioner. A discharge plan is defined as 'a comprehensive plan for the ongoing care and needs of a patient after their discharge from hospital. The discharge plan is seen as part of a continuum of care and may include a number of different care settings and providers. The development of the plan includes the patient and their family and carer at every stage, and involves multidisciplinary health teams, the patient's GP, community health and community providers. The completed plan should be available to all parties involved'. [18]

Phase one results

There were six main points of interest collected in the phase one:

i) There was evidence in the medical notes of all patients that discharge requirements were being discussed during the inpatient episode of care, however only one patient (5.88%) had a written discharge plan.

ii) One patient (5.88%) could produce a written discharge plan.

iii) Unexpected and unpredictable events occurred to nine patients (52.94%) after discharge that had the potential to affect their health. These events could not reasonably be predicted during the inpatient episode.

iv) Eight patients required community services after discharge. Of these eight community service providers, six (75%) reported receiving adequate information about the patients prior to discharge. Two providers (25%) reported less than adequate information was provided.

v) Seven (87.5%) General Practitioners who responded reported having timely medical summaries, but only one (12.5%) thought they were involved in the discharge process.

vi) Of those patients who had carers, five of these carers (71.5%) reported feeling either under-prepared or could have been prepared better for discharge.

The first significant observation to be generated from the data was that unexpected and unpredictable events occurred for many patients that could not reasonably be predicted during their inpatient episode. For example one participant's motorised scooter broke down. This unexpected and unpredictable event potentially had significant implications as the participant used the scooter for shopping and visiting her general practitioner. There was no existing service for this participant at that time to help her organise for her scooter to be fixed. Other unexpected events included a carer becoming unwell, meaning community services were required and damage to a bathroom requiring temporary equipment for daily living activities. During this phase of the project, assistance was also given in relation to medication management (under the guidance of a community pharmacist), mobility management and liaising with community services and general practitioners.

It is also important to note that when these events occurred there was no existing workforce role that was available to address these events. The second significant observation was the fact that only one patient had a written discharge plan. While there was evidence in the medical records of all patients that a discharge plan was discussed, there was no evidence that the written plan was given to the patient. The third significant observation was qualitative data from general practitioners who reported they would like a discharge plan that included key functional and social data. These observations are highlighted as the main areas targeted by the workforce solution developed in phase two.

Phase two: development of a new workforce role
Phase one yielded specific information that indicated where and how in the transition from hospital to home, elderly people required greater support. As a result a new workforce role was developed to meet the service opportunities arising out of unexpected and unpredictable events occurring after discharge and to facilitate communication between key stakeholders involved in the discharge process.

Developing a simple process map of an ideal client journey and then superimposing problem points along the journey, as highlighted in the baseline data, assisted in developing the new workforce role. This process highlighted where participants in the baseline phase of the study experienced difficulties.

This process mapping procedure was done for all participants until an overall picture of difficulties and gaps in the service process emerged. The next step in developing a new workforce role was to link the gaps in service to tasks, functions and competencies. This was done by reviewing the extensive competency lists published by the Department of Education Employment and Workplace Relations: Australian Industry Skills Council. [19]

The research team reviewed the description of many health related competencies and these competencies were then linked to existing roles. For example, the task of communicating medical status to the patient and carer is performed by existing roles in ACT Health. However, for all of the patients in this study, no existing role performed any of the tasks required in the immediate post discharge period.

The best fit competencies were ones that were linked to the qualification of a Certificate IV in Allied Health Assistance (or equivalent). Potentially, an AHA could follow a person as they moved from an acute setting into the community. While this qualification is not new, the proposed role the person took was new for the ACT. That is, a multidisciplinary assistant role to assist patients during their inpatient episode and then in their homes in the immediate period post discharge.

Phase three: examining the expanded role of the AHA
A suitable duty statement and selection criteria for a new position was developed. The selection criteria included the requirement of a Certificate IV in Allied Health Assistance, or equivalent, with other duties designed to specifically target the service opportunities identified in phase one. An appropriate governance structure was also put in place to ensure appropriate supervision and oversight of the role. The AHA was employed full time for four months on this project and this included direct patient interventions as well as assisting with the administration of the project.

Application of the new role was undertaken in the same way described in phase one except that seven new patients from the aged ward and eight new patients from other wards at TCH were recruited. One patient dropped out of this phase of the study as they were transferred to another healthcare facility. See Table 2 for patient characteristics in phase three.

Table 3: Main tasks performed by the Allied Health Assistant

TASK
• Providing clearly written, jargon free, personalised care plan
• Equipment prescription
• Collection of equipment from loan service and installation
• Coordination and organisation of services not identified in discharge process eg, community transport, day services
• Liaison with carer agencies around package arranged by inpatient team or resumption of previous service
• Liaison with government services around home modifications and equipment
• Communication with General Practitioners
• General advice around energy conservation
• Organising support for leisure and social activities
• Advice re: memory strategies
• Assisting with organisation of written material eg, helping order all health and care service related correspondence into a folder
• General review of home environment in relation to functional mobility (eg, checking if walking frame can fit around furniture)
• Reinforcing use of Webster pack and assisting with solving any physical problems with opening sections (did not give medication advice – would refer back to GP when queries arose)
• Review of food preparation and food consumption (did not undertake nutrition screen but would check that client was consuming meals provided and report back as appropriate)
• Supporting patient or carer to contact services (eg, providing phone numbers of respite agency or ACAT)
• Demonstrating/reinforcing strengthening exercise (as prescribed by physiotherapist)
• Providing handouts on elements of care such as equipment use, exercises etc
• Reviewing transfer skills in home environment
• Referring to health services as required (eg, community Occupational Therapy (OT), community Social Work (SW)

As the new role was to target specific gaps in process and service delivery across the acute and community sectors it was anticipated that these patients would have a more coordinated, timely and efficient service as well as improved functional outcomes. These changes were measured by the same outcome measures described in Table 1 at one and five weeks post discharge. Table 3 lists the main tasks performed by the Allied Health Assistant during the course of the research.

Phase Three Results

Following the implementation of an Allied Health Assistant (AHA), the following changes were seen:

i) Patients and their general practitioners received timely, clear and individualised discharge plans.

ii) Following an individual up in their own home following a hospital admission allowed for the discharge plan to be fully implemented and any unexpected problems to be addressed.

iii) A staff satisfaction questionnaire was administered to targeted staff members at TCH. These staff members were targeted as they had the most interaction with the Allied Health Assistant. In summary the staff members reported that: they were supportive of the role; the role did not make their work more or less difficult as the main work was done outside the ward environment and there was no report or concern regarding scope of practice.

iv) Patients and carers reported that the role had a positive effect for them. This was primarily around the communication of the discharge plan and coordination of post discharge care.

v) There was minimal change shown in the activities of daily living function.

Discussion

The literature supports the use of an AHA in an acute and community setting, in a discipline specific and multi-disciplinary way. [20-21] This paper adds further support to using an AHA to meet some of the needs of older people as they move from an acute hospital stay into their own homes.

This study noted that a sample of elderly people experienced issues when discharged from hospital particularly with information needs, service delivery and managing stakeholder relationships. This is consistent with the experiences of elderly people reported in the literature. [2-7]

In the first cohort described in this study, unexpected or unpredictable events occurred for some of these elderly patients that could not reasonably be predicted during an inpatient stay. This observation and that of issues with communication between key health professionals meant that these patients experienced gaps in service delivery immediately after discharge.

The gaps in care delivery highlighted in phase one were mapped to an ideal patient journey, which indicated the types of tasks and competencies required to improve the service. Through linking the service opportunities demonstrated by the baseline data to tasks and functions, the project team was able to develop a set of competencies that highlighted the skills needed by any new worker.

The deployment of an AHA, with recognised competencies, was evaluated using the same outcomes measures used in phase one with a new cohort of elderly people.

The results indicated that:

i) Following an individual up in their own home following a hospital admission allowed for the discharge plan to be fully implemented and any unexpected problems to be addressed;

ii) Patients and their general practitioners received timely, clear and individualised discharge plans;

iii) The scope of practice of this AHA was an appropriate solution to the problem identified for this patient group;

iv) Staff impacted by this role were satisfied that the role had a positive effect on patient outcomes without negatively affecting their own role;

v) Patients and carers reported that the role had a positive effect for them;

vi) Healthcare coordination between key stakeholders involved in patients' care improved. For example, the AHA was able to facilitate timely, clear and individualised discharge plans to general practitioners. The AHA was also able to facilitate a written discharge plan to all patients.

Surprisingly, there was minimal change in functional and quality of life measures in the intervention group. It was expected that the AHA would be involved in aspects of care like self-care re-training and tasks like cooking and community access. What occurred, however, was that the community services involved often addressed this by assigning a personal care assistant to undertake these tasks. This is a future area of investigation in terms of working towards withdrawing services as people become more able to complete daily living tasks.

The main limitation of the study is that the effect of the AHA was measured with a small sample, was not randomised and used self-reported outcome measures. This may mean the outcomes seen could be due to other factors other than the introduction of an AHA. Future research could use a randomised design with outcome measures designed to allow for confounding variables.

Conclusion

The results of this small descriptive study indicate that an Allied Health Assistant may assist in meeting the needs of older people as they move from an acute care episode into their homes.

Competing Interest

The authors declare that they have no competing interests.

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Applying the SERVPERF Scale to Evaluate Quality of Care in Two Public Hospitals at Khanh Hoa Province, Vietnam

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Abstract

The quality of hospital care has been an increasing concern in Vietnam, especially in public hospitals, which are congested throughout the country. Identifying related factors that influence the quality of hospital care is a critical contributor to improving hospital quality and therefore patient satisfaction. A culturally and contextually appropriate measure of patient satisfaction is necessary to help guide system-wide improvements. One such measure is the SERVPERF scale, which has been considered a superior instrument for evaluating service quality, including in the healthcare sector.

Two public hospitals in Khanh Hoa province, Vietnam, were chosen to assess the utility and validity of a modified SERVPERF scale, namely the Patient Satisfaction Scale (PSS), to evaluate quality of care. The multidimensionality of hospital care quality has been analysed using exploratory factor analysis with further examination of the scale's reliability and validity.

The Exploratory Factor Analysis identified five factors with reasonable internal consistency coefficients. Cronbach's alpha for the whole scale is high, at 0.880. Further regression analysis showed a significant convergent validity of the scale. Assurance and Empathy are the greatest dimensions affecting the service quality of hospital care in Khanh Hoa province.

Abbreviations: CSQ – Client Satisfaction Questionnaire; KMO – Kaiser-Meyer-Olkin; MPJHQ – Patient Judgements of Hospital Quality Instrument; MSA – Measure of Sampling Adequacy; PCA – Principal Component Analysis; PSQ – Patient Satisfaction Questionnaire; PSS – Patient Satisfaction Scale; SERVQUAL – Service Quality Instrument; SPPCS – Satisfaction with Physician and Primary Care Scale.

Key words: SERVQUAL; SERVPERF; Patient Satisfaction Scale; Public Hospitals; Quality of Hospital Care; Exploratory Factor Analysis.

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Introduction

Evaluating and improving quality of healthcare has been seen as a difficult and complex task, and in general, has not been successfully accomplished. [1] Practically, quality of care contains two main components. The first is technical quality, which refers to compliance with standard professional approaches. The second is the quality of the interaction between providers and patients and the patients' participation in the treatment process. [1] These components have been categorised in early 1980s by Grönroos [2] as technical quality and functional quality. The functional quality, in the context of hospital service, refers to the patient's perspectives of healthcare service quality; this has often been operationalised as patient satisfaction. [3]

A significant association exists between customer satisfaction and service quality. It is the same in the context of

the healthcare system. In other words, patient satisfaction conveys the quality of healthcare. In general, there are five perspectives on the quality of healthcare: (1) patients; (2) professionals; (3) healthcare institutions; (4) insurers; and (5) government. [3] However, examining patients' perceptions has been increasingly becoming important in evaluation of healthcare quality and should be considered the appropriate measure of quality of care. [3,4] It is common for the two concepts – quality of care and patient satisfaction – to be used interchangeably in the research literature. [5]. From this point of view, patient satisfaction surveys should be an important measure to evaluate the quality of care of a healthcare institution in particular and the healthcare system as a whole.

There have been numerous questionnaires developed and applied for measuring patients' satisfaction worldwide. Van Campen et al [3] reviewed the capacity of different patient satisfaction instruments to assess the quality of care from the patient's perspectives. The authors found that among 113 instruments, only 41 had reportedly been tested for reliability or validity, and eight instruments were tested twice or more often. However, based on five criteria for assessing quality of care from the patient's perspective, [3] the authors identified five instruments as having superior utility: the Patient Satisfaction Questionnaire (PSQ) by Ware et al; Client Satisfaction Questionnaire (CSQ) by Larsen et al; the Satisfaction with Physician and Primary Care Scale (SPPCS) by Hulka et al; the Patient Judgments of Hospital Quality Instrument (PJHQ) by Meterko et al; and the Service Quality Instrument (SERVQUAL) by Parasuraman et al. Among the five questionnaires, the authors recommended SERVQUAL as the basis to build the instrument. [3]

The SERVQUAL scale comprises five dimensions of service quality; Tangibles; Reliability; Responsiveness; Assurance; and Empathy. [6] Each item was recast into two statements – one to measure expectations and one to measure perceptions using a seven-point scale ranging from 'strongly agree' (7) to 'strongly disagree' (1). As a result, there are a total of 44 questions that assess perceptions and expectations. The score differences between expectations and perceptions reflect the service quality. The SERVQUAL scale has been noted as a concise multiple-item scale with good reliability and validity that service providers can use to better understand the service expectations and perceptions of consumers separately and, as a result, improve their service. [6] The instrument has been designed to be applicable across the broad spectrum of services, including healthcare service. Many surveys have used SERVQUAL on

numerous occasions and its reliability and validity have been demonstrated, [7] including in healthcare services. [8-10]

However, some concerns remain about the number of dimensions of service quality, treatment of expectations, [11] and the use of gap scores between perceptions and expectations. [12,13] Practically, researchers have raised two main concerns about the SERVQUAL. Firstly, it is thought that it takes too much time to answer a total of 44 questions. The second concern relates to the vagueness of the expectation [12] and the fact that measuring perceptions and expectations simultaneously can cause boredom and confusion. [13]

Because of these concerns, Cronin et al [14] suggested an alternative tool, namely SERVPERF, by using the scale of performances to assess service quality. The authors concluded that a performance-based measure of service quality might be an improved means of measuring the service quality construct. Further, in a meta-analytic review of 17 years of research across five continents, Carrillat et al [15] concluded that both SERVQUAL and SERVPERF are adequate and equally valid predictors of overall service quality. Additionally, the SERVPERF has been proposed for use in measuring patient satisfaction in connection with healthcare service quality. [12,16]

To-date, the management of public hospitals in Vietnam has focused mainly on investment in the technical aspect of healthcare to improve the capacity of diagnosis and treatment for patients. As a result, assessing patient's perceptions, the functional aspect of healthcare quality, has been under valued. Furthermore, there has not been any evaluation framework officially applied in public hospitals in Vietnam. Therefore, the evaluation of healthcare quality in the context of patient satisfaction may contribute to filling the existing gap in the process of evaluating quality of care in public hospitals in Vietnam.

The aim of this research was to identify the utility and reliability of a modified version of the SERVPERF scale as a means of measuring quality of care under patient's perceptions, so-called patient satisfaction, in the resources constrained environment and particular cultural of Vietnamese hospitals.

Methodology

Before this survey was undertaken, four focus groups among in-patients were conducted with the aim of exploring possible dimensions of service quality in addition to the five dimensions explored by Parasuraman. [6] Administrative procedural issues were raised strongly and repeatedly

among participants in the four focus groups. Therefore, we proposed an additional dimension of 'administrative procedure' as the sixth dimension of the SERVQUAL scale's construct.

A cross-sectional design was used for this survey. The target population were in-patients who were already discharged within three months from the two public hospitals: Van Ninh District at the North and Cam Ranh City in the South of Khanh Hoa province. The patients were chosen based on the discharged patients list drawn from computer system of the two hospitals by convenient sampling technique. Patients were listed by communes and then were chosen by a staff of commune health centres in the most convenient way to access the patients.

The anonymous SERVPERF-based questionnaire, namely 26-item PSS, was administered to the patients by a healthcare staff member working at the commune health centre where the patients were living. Upon completing the questionnaire at home, the patients returned it to the commune health centre in order to be sent back to the investigator. A self-adhesive envelope was also sent to the participants to ensure confidentiality. Some reminders directly at patients' homes or by telephone were made after more than two weeks not receiving feedback from participants.

The sample size was predetermined on statistical advice at 150 for each hospital to reach an overall sample size of 300 as suggested by DeVellis [17] and Pett. [18] This sample size is also consistent with the criterion of five to ten participants per item. [17-19]

Furthermore, because of the advantage of SERVPERF over SERVQUAL as discussed above, the perception part was chosen as a basic frame to develop the scale to

Table 1: Proposed dimensions of 26-item PSS modified from SERVPERF scale

DIMENSIONS	ITEMS
Tangible (4 items)	Hospital has up-to-date medical equipment The clinical departments are clean There are enough beds for patients The hospital is too crowded
Reliability (3 items)	When you have a problem, doctor shows a sincere interest in solving it When you have a problem, nurse/midwife shows a sincere interest in solving it The doctor made an accurate diagnosis
Responsiveness (6 items)	It does not take too much time for you to be seen by the doctor The waiting time for lab examination and/or imaging diagnostic procedures is too long Nurses/midwives are always willing to help you Nurses aids are always willing to help you Doctors are too busy to respond to your requests Nurses are too busy to respond to your requests
Assurance (6 items)	The behavior of hospital staff instills confidence in patients Doctors are consistently courteous to you Nurses/midwives are consistently courteous to you Nurses aids are consistently courteous to you Doctors have good professional skills Nurses/midwives have good professional skills
Empathy 3 items)	Doctor gives you individual attention Nurse/midwife gives you individual attention Hospital has operating hours convenient to all patients
Administrative procedures (4 items)	The administrative procedures of the hospital take too much time The hospitalisation procedures are simple It takes too much time for the discharging procedure The referral procedure is too complicated

examine service quality. In addition, unlike other business organisations, service quality in hospitals is determined not only by doctors but also by nurses, midwives, nurses aids and other staff who work with each other very closely to solve patients' health problems. Therefore, some statements regarding Responsiveness, Reliability, Assurance and Empathy were written specifically for doctors, nurses and nurses aids. Four statements relating to the administrative procedure were also added to establish a total 26 items of the scale as shown in Table 1.

There are five items that are negative words and therefore were recoded before analysing. All items were listed in the questionnaire in a random order to minimise any subjective bias by readers. The 26 items, namely from v1 to v26, presented in the questionnaire, are shown in the appendix.

Different from the original format of item response of SERVQUAL scale, a 5-point Likert scale with a neutral point was used in order to facilitate decision-making for participants.

An item that evaluates the extent to which patients manifest their satisfaction with hospital services was also added with the aim of examining the construct validity of the scale. This item is also under the 5-point Likert format, ranging from very dissatisfied to very satisfied with a neutral point.

EpiData version 3.1 was used to enter data. The analysis was based mainly on IBM SPSS version 19. Some regression analysis was double checked with Stata version 12 because of its advantage over SPSS [20].

Because the five-dimensional factor structure of the SERVQUAL scale has not been confirmed in various studies [4] along with the cultural differences across countries, exploratory factor analysis rather than confirmatory factor analysis was used to identify possible underlying dimensions

that implied the construct of quality of hospital care in the Vietnamese context. The structure matrix was used to evaluate and refine the factors as strongly suggested by Pett. [18] However, the pattern matrix also played a reference role in the situation where a multi-loading on the same factor existed. The decision was made based on the factor loading in the pattern matrix. Another approach was to examine Cronbach's alpha to determine where items best fit when they load on multiple factors. [18] The item's meaning was also another criterion to place an item appropriately to a factor. Regression analysis of the response variable 'overall satisfaction' against predictors of scale factors was conducted to detect construct validity of the scale.

The Ethic Approvals have been obtained from Queensland University of Technology Human Research Ethics Committee (Approval number 1100000549) and Khanh Hoa Provincial Health Service.

Findings and discussions

Of 300 questionnaires distributed, 289 participants were completed, accounting for a 96.3% response rate. Nine participants were under 18 years of age and therefore excluded from the analysis, leaving a remaining 280 participants.

Regarding missing data analysis, among 26 items constituting the scale, there was no item having more than 5% missing value. Further, only 0.7% of observations had more than four missing values. Therefore missed data analysis may be of little concern. [21] Listwise deletion for 26 items of the scale showed 242 observations to be analysed.

Factor analysis

Listwise deletion of 26 items comprising the scale resulted in 242 cases to be conducted for factor analysis. Examining correlation showed the Kaiser-Meyer-Olkin (KMO) test of

Table 2: Total variance explained by the five extracted factors of the PSS scale

FACTOR	EXTRACTION SUMS OF SQUARED LOADINGS			ROTATION SUMS OF SQUARED LOADINGS
	TOTAL (EIGENVALUE)	% OF VARIANCE	CUMULATIVE%	
1	7.427	28.565	28.565	5.910
2	3.905	11.905	40.470	3.714
3	1.509	5.820	46.272	2.500
4	1.382	5.317	51.589	3.406
5	1.209	4.649	56.238	3.245

0.868 and Barlett's test of sphericity at significance of less than 0.0001, indicating an appropriate correlation matrix and sufficient sample size for factor analysis. All Measures of Sampling Adequacy (MSA) were larger than 0.7, suggesting that the correlation matrix is factorable.

In health research, there is something of a correlation between concepts and constructs. [18] Further, the SERVQUAL scale has been used and analysed based on the assumption that the five factors correlate with each other to some extent. [6,7] Therefore, the oblique technique direct Oblimin with Kaiser normalisation was used for factor analysis using IBM SPSS version 19.0 with the extraction method of Principal Component Analysis (PCA). The criteria for retaining factors are eigenvalues larger than one per cent of extracted variance around 5% or more, and Scree plot. The cut-off for meaningful factor loadings is defined as greater than 0.30 at minimum or at least 0.45 as 'fair' as suggested by Pett [18] and Floyd. [19]

The factor analysis as mentioned above resulted in five factors extracted that accounts for 56.2% variance as shown in Table 2. Each factor has eigenvalue greater than one.

The structure matrix and pattern matrix created by factor analysis oblique rotation are presented at Table 3 and Table 4, respectively. The factor analysis consistently confirms the five-dimension structure of the 26-item PSS, despite adding the administrative procedure as originally proposed. The items relating to administrative procedures have been loaded on different factors depending on the contents of the procedures of administration. Further, the factor matrices suggest five factors with their corresponding items that are not the same as expected (Table 1). The reason might be rooted from the issue of cultural differences in the meanings of the dimensions of Assurance, Reliability, Empathy, Tangibles and Responsiveness.

The item 'Nurses aids are consistently courteous with you' was originally placed to the dimension of Assurance. However, factor analysis resulted in a different loading significance. In the structure matrix, the item's loading value on factor 5 (Empathy) was less than on factor 1 (Assurance) (0.476 vs. 0.479, Table 3). Conversely, in the pattern matrix, loading of this item was not significant (<0.3) on factor 1. As a result, this item should be placed on factor 5. The possible explanation may be based on the fact that in Vietnam, nurses aids – who are not medical professional persons and solely work as a cleaner and provide clothes and bed sheets for patients - are considered differently from doctors and nurses. Their role in the hospital therefore is seen as 'Empathy', not

as 'Assurance'.

The item 'The clinical departments are clean' loaded more significantly on factor 1 than on factor 3 in both matrices. However, because of its meaning, it should be placed on factor 3 as 'Tangibles'.

The Responsiveness factor comprises items that largely relate to waiting times. The item 'the hospital is too crowded' was originally placed on the dimension of Tangibles. However, factor analysis resulted in the high loadings on Responsiveness factor at both matrices (0.478 and 0.401, respectively). The explanation might be that crowdedness is by and large connected with patient waiting time.

Reliability analysis

Listwise deletion was used before conducting reliability tests for the aim of the same sample size for all factors. The procedure resulted in 242 observations to estimate reliability for each extracted factor. Cronbach's alpha coefficients were calculated to assess the reliability of factors as well as the whole scale in terms of internal consistency. Table 5 shows the values of Cronbach's alpha coefficients as a result of reliability analysis using SPSS version 19. The table shows the high and significant alpha coefficients at the factors of Assurance (0.865), Responsiveness (0.810), and Reliability (0.726). The factor Empathy had an acceptable value of alpha coefficient (0.624) and the factor Tangibles had the lowest value of Cronbach's alpha (0.595).

Item-total correlation coefficients ranged from 0.293 (v23) to 0.669 (v13). However, only one item (v23) had its item-total correlation coefficient of 0.293 that is considered as weak correlation [18], demonstrating a relative moderate strength of relationship between items as a whole.

There were three variables that increase Cronbach's alpha if items are deleted. They are v21 of factor Responsibility, v4 of factor Reliability and v23 of factor Empathy. The item v21 only increases very slightly (0.813 vs 0.810) the internal consistency of factor Responsiveness so it might be retained. V4 is an important item in terms of exploring possible inconvenience of hospital opening times so it should not be deleted, while the deletion increased not too much the internal consistency of the factor (0.796 vs. 0.726). The last one, v23, is remained for the same reasons.

Table 6 shows briefly reliability in terms of internal consistency for the whole scale (α = 0.880), for separate factors, and factor correlation.

Table 3: Factor loadings from the rotated factor structure matrix for the 26-item PSS: Principal Axis Factoring with Oblimin Rotation (Kaiser Normalization)

PSS ITEMS	FACTORS				
	1	2	3	4	5
Assurance					
V3. When you have a health problem, doctor shows a sincere interest in solving it	**.569**			.453	
V6 Nurses/midwives have good professional skills	**.603**			.451	
V7 The doctor made an accurate diagnosis	**685**		.325		.309
V13 Nurses/midwives are consistently courteous with you	**.709**			.508	
V18 Doctors are consistently courteous with you	**.606**	.310			.530
V19 The behavior of hospital staff instills confidence in patients	**.627**			.325	.593
V22 Doctors have good professional skills	**.748**				
V24 Doctor gives you individual attention	**.789**				
V25 Nurse/midwife gives you individual attention	**.667**			.416	.396
Responsiveness					
V1 Doctors are too busy to respond to your request promptly		**.736**			
V8 The administration procedures of the hospital take too much time		**.666**	.559		
V12 The waiting time for lab examination and/or imaging diagnostic procedures is too long	.347	**.629**	.345		
V15 It takes too much time for the discharging procedure		**.704**	.396		
V16 Nurses/midwives are too busy to respond to your request promptly		**.677**			
V21 The hospital is too crowded		**.454**			.367
V26 The referral procedure is too complicated		**.771**			
Tangibles					
V5 There are enough beds for patients			**.799**		
V9 The Hospital has up-to-date medical equipment	.393		**.589**		
V14 The clinical departments are clean	.585		**.478**		.357
Reliability					
V4 Hospital has operating hours convenient to all patients				**.667**	
V10 When you have a health problem, nurse/midwife shows a sincere interest in solving it	.430			**.757**	.384
V11 Nurses/midwives are always willing to help you	.462			**.707**	.392
Empathy					
V2 Nurses aids are always willing to help you	.339			.488	**.529**
V17 It doesn't take too much time for you to be seen by doctor	.489				**.697**
V20 Nurses aids are consistently courteous with you	.479			.431	**.476**
V23 The hospitalisation procedures are simple					**.636**

Note: Underlined values indicate a multi loading on two or more factors. Loadings under .30 omitted. Values in bold indicate the factor on which the item is placed.

Table 4: Rotated factor pattern matrix for the 26-item PSS: Principal Axis Factoring with Oblimin Rotation (Kaiser Normalisation)

PSS ITEMS	FACTORS				
	1	2	3	4	5
Assurance					
V3 When you have a health problem, the doctor shows a sincere interest in solving it	**.460**			.314	
V6 Nurses/midwives have good professional skills	**.493**				
V7 The doctor made an accurate diagnosis	**.667**				
V13 Nurses/midwives are consistently courteous with you	**.578**			.304	
V18 Doctors are consistently courteous with you	**.446**				.356
V19 The behavior of hospital staff instills confidence in patients	**.465**				.445
V22 Doctors have good professional skills	**.787**				
V24 Doctor gives you individual attention	**.833**				
V25 Nurse/midwife gives you individual attention	**.554**				
Responsiveness					
V1 Doctors are too busy to respond to your request promptly		**.789**			
V8 The administration procedures of the hospital take too much time		**.609**	.477		
V12 The waiting time for lab examination and/or imaging diagnostic procedures is too long		**.567**			
V15 It takes too much time for the discharging procedure		**.656**	.309		
V16 Nurses/midwives are too busy to respond to your request promptly		**.734**			
V21 The hospital is too crowded		**.401**			.367
V26 The referral procedure is too complicated		**.736**			
Tangibles					
V5 There are enough beds for patients			**.834**		
V9 The Hospital has up-to-date medical equipment			**.522**		
V14 The clinical departments are clean	.471		**.349**		
Reliability					
V4 Hospital has operating hours convenient to all patients				**.661**	
V10 When you have a health problem, nurse/midwife shows a sincere interest in solving it				**.696**	
V11 Nurses/midwives are always willing to help you				**.625**	
Empathy					
V2 Nurses aids are always willing to help you				.415	**.447**
V17 It doesn't take too much time for you to be seen by the doctor					**.601**
V20 Nurses aids are consistently courteous with you					**.336**
V23 The hospitalisation procedures are simple					**.654**

Note: Underlined values indicate a double loading on two factors. Loadings under .30 omitted. Values in bold indicate the factor on which the item is placed.

Table 5: Reliability analysis of five factors of 26-item PSS

ITEMS IN EACH FACTOR	ITEM TOTAL CORRELATIONS	ALPHA IF ITEM DELETED	MEAN	SD
Assurance (α = .865)				
V3. When you have a health problem, the doctor shows a sincere interest in solving it	.518	.858	3.74	.757
V6 Nurses/midwives have good professional skills	.560	.854	3.54	.779
V7 The doctor made an accurate diagnosis	.544	.856	3.50	.811
V13 Nurses/midwives are consistently courteous with you	.669	.844	3.50	.795
V18 Doctors are consistently courteous with you	.597	.851	3.67	.771
V19 The behavior of hospital staff instills confidence in patients	.599	.851	3.49	.730
V22 Doctors have good professional skills	.585	.852	3.62	.754
V24 Doctor gives you individual attention	.659	.845	3.58	.748
V25 Nurse/midwife gives you individual attention	.637	.847	3.60	.740
Responsiveness (α = .810)				
V1 Doctors are too busy to respond to your request promptly	.515	.791	3.35	.962
V8 The administration procedures of the hospital take too much time	.638	.768	2.82	1.053
V12 The waiting time for lab examination and/or imaging diagnostic procedures is too long	.569	.781	2.82	.990
V15 It takes too much time for the discharging procedure	.630	.771	2.95	.921
V16 Nurses/midwives are too busy to respond to your request promptly	.451	.801	3.37	.903
V21 The hospital is too crowded	.375	**.813**	2.43	.905
V26 The referral procedure is too complicated	.645	.767	2.96	1.016
Tangibles (α = .595)				
V5 There are enough beds for patients	.374	.554	3.14	1.082
V9 The Hospital has up-to-date medical equipment	.461	.421	3.26	.888
V14 The clinical departments are clean	.389	.516	3.33	.929
Reliability (α = .726)				
V4 Hospital has operating hours convenient to all patients	.411	**.796**	3.75	.788
V10 When you have a health problem, nurse/midwife shows a sincere interest in solving it	.641	.521	3.65	.781
V11 Nurses/midwives are always willing to help you	.606	.568	3.61	.766
Empathy (α = .624)				
V2 Nurses aids are always willing to help you	.476	.505	3.50	.424
V17 It doesn't take too much time for you to be seen by the doctor	.455	.518	3.17	.380
V20 Nurses aids are consistently courteous with you	.413	551	3.38	1.000
V23 The hospitalisation procedures are simple	.293	**.630**	3.22	.163

Note: Bold values show higher Cornbach's alpha coefficients if items deleted.

Table 6: Factor correlations and Factor Alpha coefficients for the 26-item PSS

FACTOR	MEAN[a]	VAR	1	2	3	4	5
1. Assurance (n = 9)	3.583	.586	(.865)				
2. Responsiveness (n = 7)	2.959	.933	.144	(.810)			
3. Tangibles (n = 3)	3.245	.940	.251	.118	(.595)		
4. Reliability (n = 3)	3.671	.606	.346	.008	.049	(.726)	
5. Empathy (n = 4)	3.316	.808	.303	.160	.138	.125	(.624)
Total scale (n = 26)	3.345	.757					(.880)

a. Range: 1.00 to 5.00
Note: Var: Variance; Reliability estimates are in the parentheses.

Validity analysis

The overall hospital quality was proposed to be examined by a single item scale asking participants to rank their satisfaction with the hospital, where they were served with a Likert 5-point response, ranging from very dissatisfied (1) to very satisfied (5). This scale was used to examine the convergent validity of the 26-item PSS. This was done by conducting regression of overall satisfaction against five factors extracted from factor analysis of the 26-item PSS.

At first, the correlation between the variable satisfaction and each of factors was examined to assess the relatedness of each other (Table 7). The result showed significant associations between satisfaction with the five factors of the scale with the highest correlations: Assurance (0.599) and Empathy (0.496). The multicollinearity diagnosis test revealed values of VIFs (Variance Inflation Factors) below 5, indicating regression analysis is appropriate.

The regression analysis resulted in an adjusted R square at 0.377 that means the model accounts for 37.7% variability of quality of hospital care in the context of patient satisfaction with hospital services. It's worth noting that the model is statistically significant and that it demonstrates the convergent validity of the scale. However, only Assurance and Empathy factors have significant influence on the overall satisfaction with regression coefficients of 0.642 and 0.237 (p values < 0.001 and 0.007, respectively).

The standardised coefficients at Table 8 indicate that the most affected factor on overall satisfaction is Assurance and then Empathy (0.448 and 0.191, respectively). Therefore, to improve the quality of hospital care in the two hospitals, it is fundamental to focus on the items of the factor Assurance and Empathy as showed in Table 3.

Table 7: Correlation analysis for the five extracted factors with the variable of satisfaction

	MEAN	SD	S	F1	F2	F3	F4	F5
Satisfied	3.55	.760						
F1 Assurance	3.59	.530	.599					
F2 Responsiveness	2.94	.660	.184[a]	.266				
F3 Tangibles	3.24	.720	.385	.489	.201[b]			
F4 Reliability	3.69	.611	.363	.596	.126[c]	.412		
F5 Empathy	3.32	.613	.496	.639	.293	.360	.487	

Note: a: p = .02, b: p = .001, c: p = .027, otherwise, p <0.001, S: Satisfied

Table 8: Regression Model for the 26-item PSS

MODEL	β	βs*	p	R²	Adj-R²	F test
F1 Assurance	.642	.448	.000	.391	.377	F=28.97
F2 Responsiveness	-.010	-.009	.872			p=0.00...
F3 Tangibles	.124	.118	.054			
F4 Reliability	-.055	-.044	.512			
F5 Empathy	.237	.191	.007			
Constant	.284		.361			

Note: β: regression coefficient, SE: Standard error, βs: standardized coefficient, Adj-R²: adjusted R².

Conclusions

Applying a modified SERVPERF scale to evaluate service quality in hospital settings in Khanh Hoa province, Vietnam has revealed an encouraging result. The 26-item patient satisfaction scale has been factorised into five dimensions that are roughly named as Tangibles, Reliability, Assurance, Responsiveness and Empathy but with different items' meanings. The scale has demonstrated its reliability and good convergent validity.

The dimensions that most significantly affect the quality of hospital care are Assurance and Empathy. Necessary strategies should focus on these dimensions to improve the quality of care at public hospitals in Khanh Hoa province, Vietnam.

However, more empirical studies should be conducted to confirm the usefulness of the PSS in terms of its reliability and validity in practice.

Competing interests

The authors declare that they have no competing interests.

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Appendix

The Patient Satisfaction Scale (PSS)

V1. Doctors are too busy to response to your request promptly

V2. Nurses aids are always willing to help you

V3. When you have a health problem, doctor shows a sincere interest in solving it

V4. Hospital has operating hours convenient to all patients

V5. There are enough beds for patients

V6. Nurses/midwives have good professional skills

V7. The doctor made an accurate diagnosis

V8. The administration procedures of the hospital take too much time

V9. The Hospital has up-to-date medical equipment

V10. When you have a health problem, nurse/midwife shows a sincere interest in solving it

V11. Nurses/midwives are always willing to help you

V12. The waiting time for lab examination and/or imaging diagnostic procedures is too long

V13. Nurses/midwives are consistently courteous with you

V14. The clinical departments are clean

V15. It takes too much time for the discharging procedure

V16. Nurses/midwives are too busy to response to your request promptly

V17. It doesn't take too much time for you to be seen by doctor

V18. Doctors are consistently courteous with you

V19. The behavior of hospital staff instills confidence in patients

V20. Nurses aids are consistently courteous with you

V21. The hospital is too crowded

V22. Doctors have good professional skills

V23. The hospitalisation procedures are simple

V24. Doctor gives you individual attention

V25. Nurse/midwife gives you individual attention

V26. The referral procedure is too complicated

Assessing Hospital Performance in Iran Using the Pabon Lasso Model

R Kalhor, A Salehi, A Keshavarz, P Bastani and P Heidari Orojloo

Abstract

Background: Hospitals account for a large share of healthcare system expenditure. Therefore efficient use of resources is a significant goal in all healthcare systems, particularly hospitals. This study was conducted to assess the performance of hospitals affiliated with Qazvin University of Medical Sciences in Iran using the Pabon Lasso Graphical Model during 2008-2010.

Method: This cross-sectional study was implemented in six hospitals affiliated with Qazvin University of Medical Sciences. Related data were collected from Qazvin statistical documents during three different years from 2008 to 2010. The statistical software Excel was used to derive three basic performance indicators, namely Average Length of Stay (ALS), Bed Occupancy Rate (BOR) and Bed Turnover (BTO), which were analysed using the Pabon Lasso model.

Findings: The overall ALS, BOR and BTO rates were 4.1 days, 68.9% and 61.1 respectively. Just two out of the six hospitals were located in the third zone of the Pabon Lasso diagram with high and acceptable efficiency. Two of the hospitals were in the fourth zone, characteristic of a high BOR but a low BTO rate and low productivity. One out of the six hospitals was located in the second zone of the graph indicating the low BOR and a high BTO rate. One of the other hospitals was situated in the second zone of the diagram in the year 2008, and had then fallen to the first zone during the next years with a low BTO rate and low BOR.

Conclusion: Just two out of six hospitals were located in the zone 3 indicating high and acceptable efficiency. This shows that the rest of the hospitals need more improvements in managerial decisions in order to enhance their efficiency and productivity.

Abbreviations: ALS – Average Length of Stay; BOR – Bed Occupancy Rate; BTO – Bed Turnover Rate.

Key words: Pabon Lasso; Average Length of Stay; Bed Occupancy; Bed Turnover; Iran.

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Introduction

There are a wide variety of healthcare systems around the world. Hospitals play an important part in these systems as they have the major and central role in providing healthcare services as well as being the first tier of referrals. [1] Furthermore hospitals are more complex in comparison with production organisations due to their major responsibility of providing both high quality and cost efficient healthcare services. [2]

Literature shows that in less industrialised countries, hospitals account for up to 50% of the total cost of healthcare systems. [3,4] Therefore the efficient use of resources is a common policy in all healthcare systems, particularly hospitals. [5,6] Nowadays, productivity and efficiency are

regarded as a culture and outlook in all healthcare systems and are considered as the sources of progress and economic development. [7] Productivity can be conceived as the quantity of goods and services produced per unit of input at a point in time. Productivity is also defined by the maximum production of products with the minimal use of human and material resources using advanced technology and generally better methods of management. [8]

Improved productivity in healthcare systems is the result of optimal, effective and efficient use of resources, minimising waste and reducing cost. In addition, high productivity in healthcare systems enhances quality, customer satisfaction and desirability in the workplace, which consequently leads to growth and development by the organisation. [9]

Since inefficiency and a lack of productivity constantly threaten healthcare systems, [10] performance assessment is an effective technique for managing activities. [10] There have been many studies about hospital performance assessment and also analyses of these assessments. [11] Furthermore, there are many performance indicators for measuring hospital efficiency. However it is only when one can use those indicators to achieve the important objectives of policy making, planning and resource management that, firstly, key indicators are chosen and secondly, using techniques such as graphical diagrams, one can easily understand the relationship between the indicators and in case of conflict, identify and remove the cause. [11]

One of the most important and useable models for assessing hospital performance or even assessing different sections within a hospital or healthcare system is the Pabon Lasso graphical model. This graphical model was devised by Pabon Lasso in 1986 to determine the relative performance of hospitals. In this method three indicators are used to evaluate the general performance of hospitals: the Bed Occupation Rate (BOR), Bed Turnover (BTO) and Average Length of Stay (ALS). [12] The BOR is the rate of useable beds in the hospital occupied by the patients. The BTO is the average number of admissions for each bed and the ALS is the number of days from admission to discharge for every inpatient. [13]

The Pabon Lasso Model is a diagram found by two crossing lines of the average BOR and the bed occupation turnover, divided into four zones. The y-axis denotes the BTO and the x-axis denotes the average BOR. [13]

Each hospital, by being placed in one of these zones, can assume special characteristics and by considering those characteristics, one can provide a practical analysis about those hospitals. The management team can provide a relevant, reasonable evaluation of ways to improve performance. This allows decision-making and policy development to be based on scientific evidence. [13]

Pabon Lasso's diagram divides the hospitals into four zones:

1. Hospitals with low BTO and low BOR, which denotes the large number of hospital beds relative to the available demand;

2. Hospitals with a high BTO and a low BOR, which denotes undue and unnecessary hospitalisation; a large number of beds; and/or the use of hospital beds for patients with very simple problems. [12] These hospitals are generally obstetrics and gynecology hospitals. [14]

3. Hospitals with a high BTO and a high BOR. This zone denotes hospitals that have reached an appropriate level of efficiency with a relatively low number of unoccupied beds.

4. Hospitals with low BTO and high BOR. Usually these hospitals have patients with chronic diseases and longer stays in hospital or have an unnecessary long stay. These hospitals are generally hospitals for psychiatric patients and older people. [14-16]

The Pabon Lasso Model could be very important in terms of rapid detection of hospitals with low performance and finding appropriate strategies for correction of their performance. Therefore the purpose of the current study is to assess the performance of Qazvin University of Medical Sciences using the Pabon Lasso Model during the years 2008-2010 to examine the status of hospitals in order to achieve a higher performance. [15,16]

Method

This research is a cross-sectional study, which was conducted during three years from 2008 to 2010. The research population consists of six public hospitals affiliated with Qazvin University of Medical Sciences – Ghods, Shahid Rajaei, Booali Sina, Kowsar, Amir al Momenin and 22 Bahman, all located in Qazvin Province. Five out of six of these hospitals were teaching hospitals. In constructing the Pabon Lasso performance assessment diagram, three indicators of the ALS, BOR and BTO were required. The study data were collected from almanacs of Qazvin Province of the years 2008, 2009 and 2010.

For the analytical procedures, the means of the indicators of BOR and BTO of hospitals for each year were computed and the obtained numbers formed the y-axis and the x-axis of the diagram, respectively. Then, based on the data from each hospital, their places were specified on the diagram.

Table1: The performance of Qazvin University of Medical Sciences Hospitals in the years 2008-2010

	NAME OF HOSPITAL	TYPE OF HOSPITALS	MEAN OF AVAILABLE BED IN 3 YEARS	BED OCCUPANCY RATE (BOR)			AVERAGE LENGTH OF STAY (ALS)			BED TURNOVERS RATE(BTR)		
				2008	2009	2010	2008	2009	2010	2008	2009	2010
1	Ghods	Paediatrics – teaching hospital	128	67	69	72.3	3.8	3.8	3.7	60	62.9	73.8
2	Shahid Rajaei	Emergency centre, and surgical – teaching hospital	155	83	84.1	83.4	4.4	4	3.6	69.6	72.6	87
3	Booali Sina	General- teaching hospital	229	72	69.9	70.3	4.8	4.3	4.5	56.9	53.6	58.2
4	Kowsar	Obstetric and Gynaecology – teaching hospital	142	65	56.6	58.4	2.5	2.3	2.5	96	81.8	88.5
5	Amir-al-Momenin	General – non teaching hospital	56	36	32.2	22.5	2	2.1	1.8	66	54	46.8
6	22 Bahman	Mental hospital – teaching hospital	55	76	72.8	71.8	16	15.2	13.9	33.6	17.5	21.5
	Total			**70**	**69.4**	**67.3**	**4.4**	**4.1**	**4**	**63.7**	**57**	**62.6**

Findings

Table 1 shows the types of hospitals according to their specialisation and their mean of available beds during three years from 2008 to 2010. Hospital performance is also indicated in Table 1. As this table reveals, Shahid Rajaei hospital had the highest BOR and the highest BTO rate. Amir-al-Momenin and 22 Bahman hospitals had the lowest BOR and the lowest BTO rate respectively. Amir-al-Momenin and 22 Bahman hospitals also had the highest and the lowest ALS respectively.

Figure 1 shows the status of hospitals in the year 2008. The localisation of hospitals in the Pabon Lasso diagrams during this year shows that in the first year, hospital one lay on the border of zones 3 and 4. Hospital two with a BOR of 83 and a BTO rate of 69.6 was located in zone 3. Hospitals three and six were located in zone 4 of the diagram. Hospital four was located on the border of zones 2 and 3 and hospital five was located in zone 2.

Figure 1: Pabon Lasso Diagram of Qazvin University of Medical Sciences hospitals in the year 2008
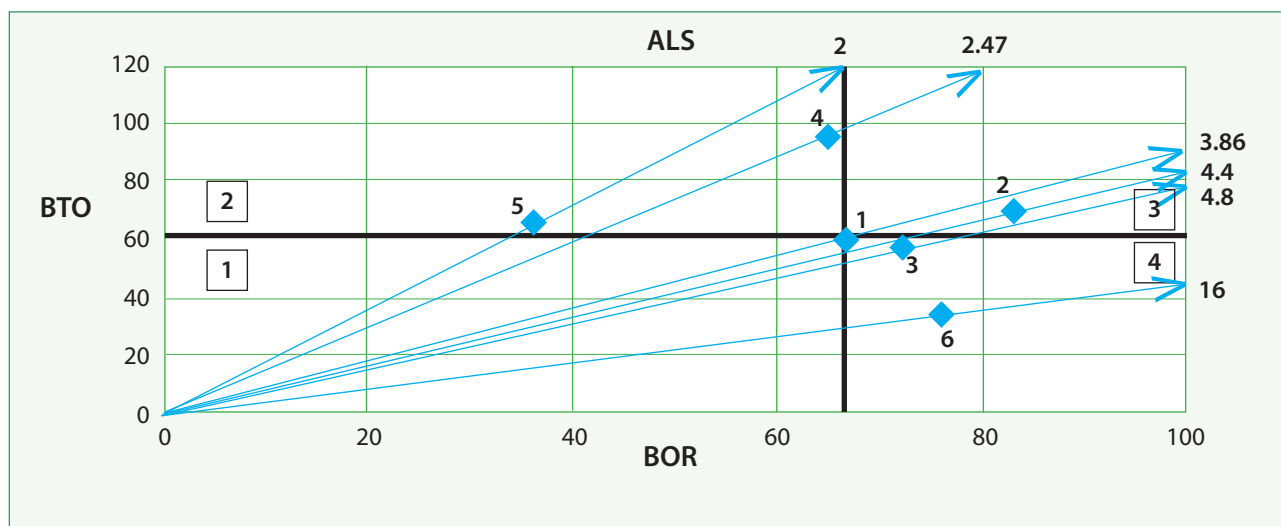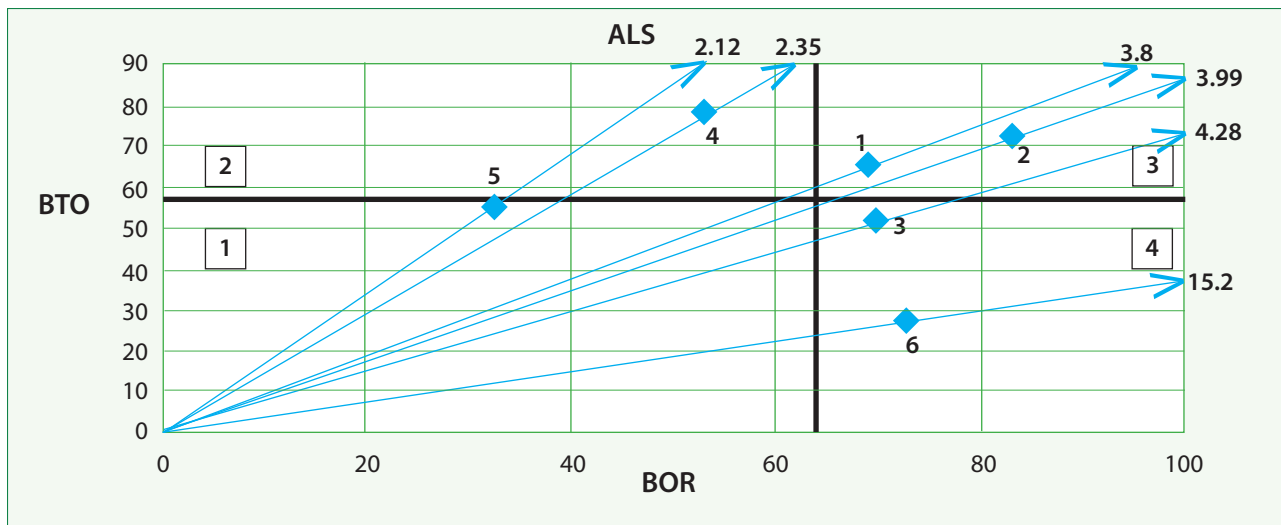
Figure 2: Pabon Lasso diagram of Qazvin University of Medical Sciences Hospitals in the year 2009


According to Figure 2, hospitals one and two, with a BOR of 69 and 84.1 and a BTO rate of 62.9 and 72.6 respectively, were located in zone 3 in 2009. However hospitals three and six were still in zone 4, the same as the previous year. Hospital four was located in zone 2 and hospital five with a BOR of 32.2 and a BTO rate of 54 was located in zone 1.

In 2010, hospitals one and two, with a BOR of 72.3 and 83.4 and a BTO rate of 73.8 and 87 respectively, were located in zone 3 of the diagram. Hospitals three and six were located in zone 4. Hospital four was located in zone 2 and hospital five with a BOR of 22.4 and a BTO rate of 46.8 was located in zone 1 of the diagram (Figure 3).

Discussion and conclusion

There are a variety of different indicators for measuring hospital performance. Although these indicators have a significant role in assessing the performance of hospitals and subsequently improving the management of resources, using individual performance indicators may lead to errors in making conclusions about a hospital's whole performance. For example, a high BOR could be due to both a higher average duration of stay, as a result of efficient use of resources for patients who need them, and also due to unnecessary hospitalisation and an inefficient use of resources. [12,14] Therefore the present study has used the

Figure 3 : Pabon Lasso Diagram of Qazvin University of Medical Sciences Hospitals in the year 2010
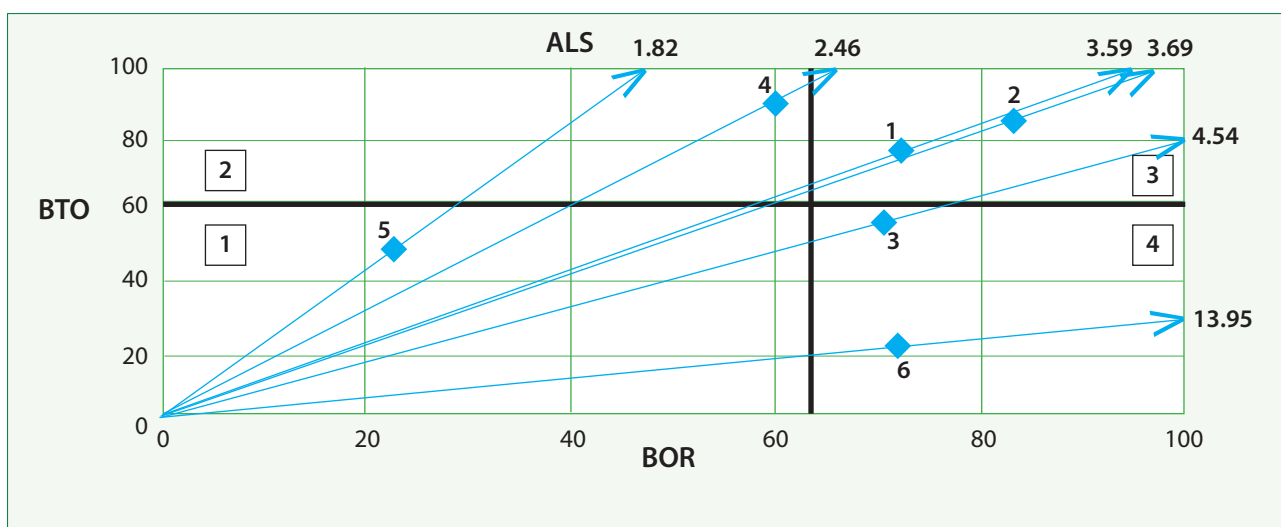
Pabon Lasso diagram. Since this model displays the three indicators of BTO rate, BOR and the ALS in a single diagram, it provides a rapid analysis on the general performance of the hospital and additionally reduces the risk of error that is more likely when indicators are analysed individually.

In the present study, Ghods hospital shows relatively good progress regarding performance. While in the year 2008, this hospital was located on the border of zones 3 and 4, in the years 2009 and 2010, with an appropriate growth, it progressed close to the northeast zone of the diagram (the best zone according to performance assessment), which could show strong hospital management in terms of maintaining a good productivity for the hospital. Therefore according to the result, Ghods and Shahid Rajaei hospitals are both located at the acceptable zone regarding efficiency (zone 3), probably due to appropriate management of services and observing hospital standards. In a study conducted by Bahadori in West Azerbaijan Province, eight hospitals out of the 23 (34.78%) were also located in zone 3. Sajjadi's study conducted in Esfahan Province revealed that 14 out of 31 centres (45%) in 2005, and 13 out of 31 centres (43%) in 2006, were located in zone 3. In the Goshtasbi study (2009), as with the present study, two hospitals out of six were located in zone 3. [12]

Efficiency improvement is considered to be a constant process. Therefore it is essential for healthcare systems to consider system efficiency as a first priority. Although Ghods and Shahid Rajaei hospitals had good progress in comparison with other hospitals in this study, maintaining this condition is important and even in some cases, may be more difficult.

Amir-al-Momenin hospital was located in zone 2 in 2008, while it fell down to zone 1 in the years 2009 and 2010. Being located in that zone shows a low performance and failure to use the available resources appropriately, indicated by both low BOR and low BTO rate. The general solution for such hospitals is not to increase the number of hospital beds, but to use the available resources appropriately. Additionally it is necessary that other intra organisational studies be conducted to detect problems and the weak points of these hospitals. In Bahadori's study, six out of 32 hospitals (26%), in Goshtasebi's study, two out of six hospitals and in Sajjadi's study in 2005, three centres (10%), and in 2006, two centres (6%), were located in zone 1.

Kowsar hospital is located in zone 2, which shows low BOR but high BTO rate, indicating short-term hospitalisation for patients. Potentially, there is the possibility of undue hospitalisation and the presence of unoccupied beds in such hospitals. Hospitals of zone 2 are generally related to obstetrics and gynaecology specialisations. In Bahadori's study, two hospitals out of 23, in Sajjadi's study, 12 centres (39%) in the year 2005 and 14 centres (45%) in the year 2006 were located in this zone. However in Goshtasebi's study none of the hospitals were located in zone 2.

Booali Sina and 22 Bahman hospitals are located in zone 4, which indicate high BOR, low BTO rate, low utilisation of facilities and high costs. This could be characteristic of long-term inpatient centres such as psychiatric medicine and geriatric centres. In the present study 22-Bahman hospital is one of the centres providing mental healthcare, and this partly explains its being located in this zone. However, hospital Booali Sina, as a general hospital is also located in the same zone probably due to its failure to use the facilities available and the hospital's low performance. Therefore it is suggested that with appropriate planning, using modern managerial methods, providing new services and using advanced medical equipment and technologies, their low performance should improve.

This study shows that just two out of six hospitals were located in the zone 3 indicating high and acceptable efficiency. It is recommended that along with improving managerial decisions in those hospitals with low efficiency, other hospital performance assessing methods also be used to achieve a clearer picture of the situation.

Acknowledgements

Competing interests

Limitation

The sample may not have been representative of the other hospitals, and should be extrapolated to the other hospitals with caution.

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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.ncbi.nih.gov/entrez/query.fcgi. 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.

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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.

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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://www.bma.org.uk/ap.nsf/content/LIBReferenceStyles#Vancouver

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/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]

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.achse.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@achse.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. Hayles, J. Citing references: medicine and dentistry, 2003;3-4. Available: <http://www.library.qmul.ac.uk/leaflets/june/citmed.doc> (Accessed 28/02/06)

2. Doherty M, Smith R. The case for structuring the discussion of scientific papers. BMJ. 1999;318:1224-1225.

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4. International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. ICMJE. 2006. Available: <http://www.icmje.org/> (Accessed 28/02/06).

Other references consulted in preparing these Guidelines Evans MG. Information for contributors. Acad Manage J. Available: <http://aom.pace.edu/amjnew/contributor_information.html> (Accessed 28/02/06)

Health Administration Press. Journal of Health care Management submission guidelines. Available: <http://www.ache.org/pubs/submisjo.cfm> (Accessed 28/02/06)

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: <http://www.mja.com.au/public/information.instruc.html> (Accessed 28/02/06)

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

ANZAM

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an Invitation to save the date
ANZAM Health Management and Organization – Special Interest Group Workshop
9 July 2014, 9:30 – 16:00 North Sydney Harbourview Hotel
(precedes the Shape Symposium 10 -11 July – www.shape.org.au)

Health LEADS Australia: Identifying capabilities, exploring connections and formulating actions

Our purpose

This workshop is the third in a series that provides a forum for researchers and practitioners to come together to explore collaborative research opportunities arising from Health Workforce Australia's recently released National Leadership Framework – Health LEADS Australia. It follows two successful engagements between these groups at the SHAPE Symposium in Brisbane in July 2013 and the ANZAM National Conference in Hobart in December 2013. The intention is to continue to explore the important questions that the roll out of Health LEADS Australia needs to address to inform, guide and evaluate its implementation. Now that we have begun to identify potential projects and collaborations, we need to turn our attention to what interests and capabilities we bring to this work. It continues to be about how we might do this together.

Outcomes we are looking for – a shared understanding of:

- The work participants are engaged with in the health leadership field
- Leadership research and practice interests and capabilities represented in the group – what we have to work with
- Knowledge, skills and attributes we hold in common and that are different
- What collaborative projects might be feasible and the potential for innovative approaches – how we might connect with each other and about what
- Means by which we can develop active the engagement of practitioners and researchers
- Decisions about what next in terms of a collaborative research plan.

What we will do

The workshop will be interactive and engage participants in information sharing about our research and practice interests and capabilities – what we bring to the table. We will engage in dialogue about how to harness these capabilities to develop meaningful research activity that enquires into the implementation and evaluation of the framework to support the enhancement of health leadership.

The workshop will be very much a working session framed by information about the leadership research and practice interests of participants related to the leadership development questions the framework raises.

It will include**:**

- The major themes and areas of research that emerged from the collaborative conversations so far
- Interesting and creative contributions to convey what we are interested in and the research and practice capabilities we have to offer
- Working groups to explore how to harness these interests and capabilities so we can leverage these resources to undertake collaborative practice based research
- The establishment of an action agenda and further opportunities to continue the conversation

Who should attend

Researchers and practitioners who are interested in the shape and capability of the Australian health workforce, in particular its leadership and management. More specifically, we would love to have those who are interested in contributing to the development, implementation and evaluation of the Health LEADS framework and who are keen to work collaboratively on this task. This could include health leaders and managers of all sorts, researchers, policy makers, consultants and educators.

Where, when and how much

WHEN: Wednesday 9 July, 0930 till 1630

WHERE: North Sydney Harbourview Hotel
17 Blue Street, North Sydney

COST:
- ANZAM members: $66 (inc GST)**
- Non-members who would like to join ANZAM (until December 2014): $165.00 (inc GST)
- Non- members: $176.00 (inc GST)

*** You are a member of ANZAM if you attended the 2013 Conference in Hobart (annual membership is included) or if you became a financial member this year.*

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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