Asia Pacific Journal *of* Health Management

ACHSM

The cover for this issue is a word cloud taken from the invited and submitted Chris Selby Oration presentation from Emeritus Professor Stephen Leeder in 2017 with a clear emphasis on 'procrastination and health'.

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IN THIS ISSUE

The cover for this issue is a word cloud taken from the invited and submitted Chris Selby Oration presentation from Emeritus Professor Stephen Leeder in 2017 with a clear emphasis on 'procrastination and health'. The editorial in this issue examines Leeder's topic and advances reasons why procrastination may have become habitual and how we might get past continuing to admire the problem and to make progress in effective health reform a priority.

The Chris Selby Smith oration is an annual event of the Society of Health Administration Programs in Education (SHAPE) international symposium held in Parramatta NSW this year. Chris Selby Smith was a former President of SHAPE but was also an internationally recognised scholar and researcher in education, health and public policy. He had a distinguished career in academia and in very senior public sector positions in Australia and internationally. We were privileged to have Stephen Leeder as our orator and his presentation resonated with us all at the time. We hope you enjoy reading and reflecting on his messages and key points in the article entitled 'the desirability of zero tolerance for procrastination'.

The next article in this issue is another submitted and accepted article from the SHAPE Symposium. Sancia West from Tasmania was the recipient of the Mary Harris Bursary Award for her presentation 'A recipe for success: localism and bounded rationality in lobbying for radiation therapy services in North West Tasmania'. It goes very much to the development of public policy in the context of political elections in a case study as described in the title of this research article.

Zhanming Liang and colleagues next provide a research article entitled 'Assessing the competence of evidence-informed decision-making amongst health service managers' to help improve decision-making practices in a challenging healthcare environment based on research conducted in two Victorian Hospitals.

The next research article by Wongtongkam and Brewster describes 'The effects of clinical placements on paramedic student learning outcomes' through creating supportive and fostering independence into paramedical professional roles.

A further review article is provided by Suryanto and colleagues into aspect of the Indonesian health workforce.

Our final article in this issue is the contribution by the 2016 Mary Harris Bursary award recipient Fiona Girkin and colleagues. The article, a research note, explores 'public value' as a management tool for measuring outcomes, in Community Support Organisations(CSOs).

In conclusion our ACHM Librarian again provide another welcomed and expert contribution in the form of the Library bulletin

Progressing Health Reform Through Collaboration and Community Engagement

In the recent Chris Selby Smith Oration at the 2017 Shape International Symposium, the orator, Stephen Leeder presented on 'the desirability of zero tolerance for procrastination' [1] and that oration is published in this issue for you to read and reflect on. His words resonated with the audience at the time and raised the question for us as to why health reform and innovation in healthcare are so difficult to achieve. After all, we are continually being asked to adapt reform and address the challenges inherent in the system.

We have immeasurable data and the literature is replete with debate about how we address specific challenges, but we seem to respond with the oft used refrain of 'admiring the problem' but often not taking any positive action to address. We have a highly developed health system that we regard as complex and difficult to change. Alford [2] has for some time reminded us to ask when considering the challenges, whose interests are being served. The structural interests are 'well in play' in health systems and not necessarily serving the interests of communities and, Dwyer [3] was right to question us as to 'what problem are we attempting to resolve'.

Despite good comparative performance generally at the national and aggregated data level the challenges are described as the financial sustainability of the health system with increasing demands on the 'public purse'; [4] inappropriate care and technology use; [5] overuse and underuse in healthcare [6] cost and utilisation of drugs [7] and healthcare variation, generally. [8] We could and should add to this list of challenges, the mostly unseen social gradients of socio-economic determinants of health (SEDoH) rightly identified by Leeder [1] in his drive from the Hills District to Mount Druitt in Sydney in the diminished life expectancy between suburbs along the way. Similarly, variability and poorer life expectancy can be expected on a much longer drive through rural NSW, along the New England Highway to the Queensland border and beyond. Yet these disparities fail to gain much attention from our policy makers and health providers. They are largely unseen but provide a disproportionate cost to our health system and demonstrate a lack of concern over access and equity in our health system.

We live in a federated nation of states and territories established more than a century ago. An arrangement that persists and has not changed much in structure, delivering to us some nine or so Ministers of or for Health, Assistant Ministers and an array of bureaucracies at each level to be concerned with a population of some 24 million. Compare this with other nations that have a national system, one Minister and a handful of agencies that manage services in an innovative context to in excess of a population of 60 million! [9] Rapport and colleagues remind us that our federated approach in Australia has led to 'increased bureaucracy, imposed solutions, many policies and protocols' [10] as also described by Sturmberg. [11] Health policy development in Australia is essentially internalised within the bureaucracies and negotiated through an overarching Australian Health Ministers Advisory Committee (AHMAC) and the Council of Australian Government (COAG). Despite the promised review of the Federation, progress and improvement will most likely be incremental.

Despite the bureaucracies, healthcare is essentially a human service. [12] People, health professionals and communities working in cooperation with each other. In earlier times but less than fifty years ago this connection was much stronger with communities establishing hospitals, aged care facilities. Government interest and the process of slowly taking control [13] only emerged when government recognised the cost and financial implication of the growth in community controlled services. Currently the emphasis of this control has moved the focus from community participation and ownership to the 'business model' of healthcare where the prior connections have become a casualty of the focus on the 'economic bottom line'. This focus on 'bottom line mentality' is said to have done much to 'erode public trust' amongst other things. [13, p.149]

We the citizens and our communities substantially fund the health system; this implies that we have a collective responsibility for the moral stewardship of the resources. [13] The impact of the bottom line, efficiency focus and the bureaucratic domination of health systems have seen community engagement reduced to an 'advisory role'. Part

of the solution of course is for health organisations to have 'a broader focus on corporate citizenship' and a greater focus on a 'triple bottom line of ethics, community and wellbeing as well as the concern for economic profits' or balanced budgets. [13, p.149]

There are compelling reasons for improved community and stakeholder engagement in healthcare systems. It should be a compelling feature of democratic societies where people are meant to 'have a right to a direct and meaningful voice about issues and services that affect them'. [14, p.14] The value of community engagement is evidenced in policies such as localism and in the principle of subsidiarity [15] and essentially suggest that services should be delivered and managed locally to meet local needs and decision-making should be made at the lowest level of government that can effectively be achieved. In addition in health systems now facing an array of non-communicable diseases (NCD) within an ageing society no one 'person, organisation or sector working alone' can solve these challenges. [14, p.15] If communities are not engaged then it is difficult to suggest that others have the capacity to solve those problems on their behalf.

Others suggest that community can be defined as a group of people, geographically defined with shared social identity that may also include entities such as local government, local health and community-based organisations, business and other groups. [16] One of the 'defining characteristics of primary healthcare from that of general care is community engagement.' These authors go on to suggest that 'in the interest of equity, it is imperative that the most vulnerable community members are part of the decision-making process' [17, p.399] and that 'collaborative processes empowers individuals and builds social relationships between people can be health promoting in and of itself – even if it does not solve any community health problems'. [14, p.34] These authors suggest that a highly participative collaborative process suggests a community health governance (CHG) model.

Healthcare 'has an important role in addressing the social determinants of health' even though 'the main determinants of health inequity lie outside the healthcare system.' [18, p. 182] Social capital is an important talisman for addressing the social determinants. The human resource component of social capital must be adequately embedded in communities for them to not only survive but also thrive in healthier contexts. Often the health professionals employed and living within a community provide much of the social capital and its leadership both within the community and within the organisation in which they are employed. Where services are delivered from a distant location and staff visit or 'fly in and out' there is a distinct loss of community social capital.

Values and culture contribute to social capital within communities and organisations and some suggest that we should focus on a culture of health more so than healthcare. [19] Others suggest that we need to build social capital 'to strengthen the ethics and safety of our cultures, teamwork and patient care' and that health systems need to have a 'goal of creating reliable networks' for this purpose. [13, p.136] Strengthening social capital within organisations require groups and networks, trust and solidarity, collective action, cooperation, information, communication, social cohesion and inclusion. [13, p.146] These authors and others suggest that social capital and participatory, collaborative community engagement 'individual empowerment, the bridging of social ties and synergy within organisations and communities' to strengthen and enhance capacity in community problem solving. [14, p.17] These approaches suggest the emergence of action at the local level is preferable rather than top down directive control and is said to require a different kind of leadership and management from that required to deliver health services.

Given our propensity to procrastinate and just admire the problem, where do we go from here? The complexity of the issues and the challenges presented in this editorial do to some extent explain our hesitancy to act. However, the continued practice of the delivery of a standard range of services, often described in terms of a 'hub and spokes' approach, particularly in primary healthcare, is not going to produce improved health outcomes. We need to understand and accept that health needs and priorities vary across communities and geographic regions. Access to services is equally variable as is the availability of a skilled workforce, increasingly so in regional, rural and remote areas.

However, in my view, the important first step is to recognise that we need to change our approach. We need to change our view of communities from that of recipients of services we determine they need to one that gives them an equality of status as a stakeholder and a partner with those charged with funding and/or delivering health services. This then empowers communities to be part of the solution to addressing the challenges they and the data correctly identifies. This inclusive approach might then lead to increased purpose to the social movements inherent in communities that see them fundraising for charitable purposes and actively participating in healthy lifestyle

activities described in the media daily of 'fun runs, group walks, bike riding, community gardens'. This is the social capital that we should build on for planning, improvement and development of healthier communities and relevant services.

Rather than procrastinating it would be good to see some pilot projects advanced that might test out how localised emergent practices can be advanced that also cross organisational boundaries in innovative ways!

DS Briggs
Editor

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The Desirability of Zero Tolerance for Procrastination

Stephen Leeder
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In a recent speech to the European Central Bank, Ben Bernanke, former chairman of the United States Federal Reserve Bank, described how recent political events had cast a bright light 'on disturbing economic and social trends in the US.'

'Unfortunately, policymakers in recent decades have been slow to address or even to recognize these trends, an error of omission that has helped fuel the voters' backlash. If the populist urge we are seeing today has an upside, it is to focus attention on both the moral necessity and practical benefits of helping people cope with the economic disruptions that accompany growth.' [1]

What Bernanke is describing is a mixture of deliberate indifference and procrastination.

I choose the desirability of zero tolerance for procrastination as my topic because I have seen so many opportunities lost in health and medicine because of delays in taking action. Procrastination ranks alongside shortage of cash as an explanation of things not being done. It is, quintessentially, bad management.

Procrastination has been described as the avoidance of doing a task that needs to be accomplished. Instead of discussing an impending financial crisis, the board of a corporation discusses parking arrangements for its members.

The word starts with *pro* meaning forward and ends with *crastinate* that comes from the Latin for 'tomorrow' – pushing things forward from today into tomorrow. The word dates from 1540, coincidentally around the time of the invention of the wristwatch. Any word enduring since the sixteenth century must have preserved its usefulness, otherwise it would have disappeared.

***

This is an adaptation of the Chris Selby Smith Oration 2017. Stephen Leeder is an Emeritus Professor of Public Health and Community Medicine at the University of Sydney. He is currently director, Research and Education Network, Western Sydney Local Health District, and Editor-in-Chief of the *International Journal of Epidemiology*.

Procrastination is the subject of jokes:

- 'One of these days I'm going to get help for my procrastination problem.'
- 'I like work. It fascinates me. I can sit and look at it for hours.'
- 'The worst form of procrastination is reading a procrastination quote, feeling the guilt and not doing anything about it.'
- Or this superb quote from Homer Simpson: 'If something's hard to do, then what's the point?'

That procrastination is, indeed, a problem is reflected in the shelves of self-help books, supportive psychotherapy, invitations to join Procrastinators Anonymous and gurus who will free you of its grip – fee-for-service. You pay today, they free you tomorrow – perhaps. Even saints suffer from procrastination or from a variant. Saint Paul writes, in his letter to Roman Christians, 'the good that I would I do not: but the evil which I would not, that I do.' Paul is identifying a deeper problem than that found in the common-or-garden variety of procrastination, but there are common elements.

Chris Selby Smith was the embodiment of non-procrastination. He had enviable energy and promptly did what obviously needed doing. I knew him slightly between 1980 and 1984, after he became First Assistant Secretary in the Commonwealth Department of Health. He had a reputation that will surprise none of you who knew him – for a rare combination of brilliance, experience, good sense, warmth, humour and energy. My interactions with him over matters of research and research policy were a pleasure.

He would have approved of a recent *BMJ* editorial by John Potter, professor of epidemiology in New Zealand. He wrote about the accumulating evidence that eating red meat is bad for your health.

The research community collectively understands the problem – overconsumption of meat is bad for our health and for the health of our planet; research even provides clear underpinnings for evidence based policy that could limit harm to both, but these underpinnings are not linked to action. As

with many contemporary problems of resource overuse and misdistribution, we need to decide whether to act now to reduce human meat consumption or wait until the decay of sufficient parts of the global system tip us into much poorer planetary, societal, and human health [2]

The editor of the *British Medical Journal*, Fiona Godlee, recognised the problem and suggested one way forward – readers of the journal should change their own behaviours and reduce their consumption of red meat. [3] She based her recommendation on the history of doctors in the United Kingdom reducing their smoking, on the basis of the evidence of its injurious effects, in the mid-1950s. This contributed to the action on tobacco taken eventually in the United Kingdom, the United States, Canada and Australia.

It took a long time! Even now, 2,000,000 Australians smoke. It is unlikely that they do not know the hazards. Many wish to quit. Helpful quit strategies, together with taxation, advertising bans and changing social attitudes have reduced smoking to about 14% of our population. But many put it off.

When I was a respiratory physician, one of my saddest tasks was telling a patient that he (generally) had lung cancer. Procrastination kills.

I do not wish to posit, because procrastination is a health hazard, that the answer lies in rushing into decisions. That is not my intention. Indeed, Amartya Sen, a Nobel Prize-winning economist, who is also a magnificent social philosopher, has observed that one of the biggest traps in developing policy is to skimp on time that should be spent on thought experiments designed to anticipate unintended side effects. We should always ask 'What will spin off from this new policy proposal?' Fools rush in.

I spent 1968 working in a small mission hospital in the western highlands of PNG – at Baiyer River. I was a 'can do' man – and there was a lot to do. After six weeks, the pharmacist, a local man named Trangipu, presented me with a ten-page order for our three-month supply of pharmaceuticals to come by Cessna 180 from Port Moresby. I flicked through the list, removing several items for which I could see no need, including many litres of chloroxylenol. I had no idea what this was – so put the red pen through it. When Trangipu was checking the delivery, he asked, in some distress, where the Dettol was. You guessed it. Dettol is choloroxylenol. I can't remember how he overcame my error, but he was a phlegmatic, practical man used to dealing with stuff-ups.

Months later, when a chicken-pox epidemic was raging, I noticed that the patients no longer had pink patches from the anti-itch calamine lotion. The patches had turned white, stark against the dark skin of the Enga people. Having run out of calamine lotion, Trangipu had substituted the antidiarrheal medicine, Kaomagma, which seemed to be working just as well.

Not all rash and impetuous decision-making has such innocent endings. Take the decision to pay Medicare rebates for psychologists to work in association with general practitioners. When first suggested, I thought that this made great sense. But neither I, nor anyone else, expected the exodus of psychologists from the public hospitals and community health services – especially rural and regional health services – as they migrated to city general practices.

So, in formulating policy, we need to steer between taking way too long and deferring action because, in Homer Simpson's words, 'it's too hard, so what's the point?' and rushing in, because of a sense of time, urgency, omnipotence or in the case of the Dettol, youthful hubris.

It is by no means easy to accurately identify procrastination, because other things can delay action and they are quite possibly culpable. The registration of medical practitioners is a complex task and, at its best, is a sensitive and thoughtful process. But here again procrastination causes problems, as when action is delayed in resolving what to do with an impaired practitioner. After the failure of the agencies of medical and criminal investigation to tackle complaints about sometimes fatal 'Deep Sleep' therapy at Chelmsford Hospital, a series of articles in the early 1980s in the *Sydney Morning Herald* and television coverage on *60 Minutes* exposed the abuses at the hospital, including 24 deaths from the treatment. That forced the authorities to take action.

Let's consider our obligations as managers, clinicians and citizens in handling procrastination in the healthcare system.

First, there is no harm in self-reflection. 'The unexamined life is not worth living' is a dictum attributed to Socrates at his trial for impiety and corrupting youth, for which he was subsequently sentenced to death, as described in Plato's *Apology*. So, to avoid Socrates's fate, we should check ourselves out, or, at the very least, ask colleagues whether they perceive us as unaware procrastinators. They might, if so, suggest how to get help.

Second, it is worth considering procrastination when, after things have gone wrong, we undertake root-cause analyses. It is easy to be transfixed by technical, structural

and personality factors, as I have seen many times in clinical quality reviews. We readily miss the simple realisation that, if action had been taken ten, twenty or even sixty minutes earlier, the patient would not have died. How and why was there this unacceptable delay?

Third, we need to keep in mind Nobelist Daniel Kahneman's explanation of much mistaken behaviour. [4] We tend to substitute simpler questions for the difficult ones we are trying to answer or solve. Such 'fast thinking' satisfies the urgent need for a response, but is usually wrong, leading us down the wrong path.

Fourth, and this, in my view, is most important in eradicating procrastination – we should, as organised groups of professionals, discuss where, in the contemporary healthcare environment, we appear to have paused, when we should, instead, be up and at it. As John Ralston Saul, a Canadian social philosopher, writes, there is nothing that beats the apparently inefficient process of discussion and debate in achieving progress.

To take one powerful example, our lack of engagement with the sectors which determine the health of our populations can be explained partly by ignorance about what should be done and partly because the task is large and outside our professional comfort zone. We procrastinate and find something less critical to occupy us. But consider this – if you reflected on the life expectancy of the locals as you drove from the Hills District in western Sydney to Mt Druitt, you would appreciate that it decreases by one year for every kilometre. This analogy, developed by Michael Marmot, draws our attention to the importance of the social determinants on health. The World Health Organization speaks of four dimensions of these determinants – economic, political, educational, and cultural – each enough to make us anxious. But Marmot has proposed how we health professionals could contribute evidence-based to help. To cite one example, he writes about progress in Brazil. [5]

Brazil has made spectacular progress in recent years in reducing social inequality and, of course, the associated unfair variations in health status. Enlightened leadership by President Lula brought about the Bolsa Familia conditional cash transfer system. Jonathan Tepperman, managing editor of *Foreign Affairs* has praised this arrangement: 'Bolsa Familia' was revolutionary in that it gave the poor cash. [6] That had been a very controversial idea in Brazil and the international development community for many years, because the assumption was that if you gave the poor money, they would squander it on alcohol, cigarettes and cheap baubles.

'Lula who had grown up poor and was very proud of his heritage thought that was ridiculous and was very attracted to the idea that maybe it would work well if you gave money to the poor directly. And in fact, multiple studies have since borne out that such programs do work very well because it turns out the best people to know what the poor need are the poor.' [6]

The lesson to be learned from Lula is 'if you feel like procrastinating, think laterally'. In that way, an array of solutions might emerge as from nowhere, presenting themselves for trial.

I do not wish to ascribe imaginary words or ideas to our late hero. But from what I know of him, directly and through others, Chris Selby Smith was a man of energy and vision. He was active and not a person to sit back. He did not live to grow old. We need to take our lead from him in promptly applying our best energies to the improvement of the health of the nation. There is not a moment to lose.

Competing Interests

The author declares that he has no competing interests.

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A Recipe for Success: localism and bounded rationality in lobbying for radiation therapy services in North West Tasmania

S West, E Shannon, E Crisp and T Barnett

Abstract

Objective: Describes where bounded rationality and localism are evident in the debate over the introduction of radiation therapy services in North West Tasmania and how this affected the delivery of the message from each side.

Design: Semi-structured interviews with stakeholders and patients/family over an eight month period in 2016 are contrasted with viewpoints identified via document analysis.

Setting: North West Tasmania.

Main Outcome Measures: The mechanisms for policy change and the policy beliefs of each side are examined with the intention of understanding how bounded rationality and a sense of localism can combine to effect policy change.

Results: In the instance of radiation therapy services in North West Tasmania, a policy debate was originally waged between medical professionals and policy makers opposed to a local service on one side and a handful of policy actors advocating for a local service on the other. Those in favour of a local radiation therapy service harnessed a sense of localism to project the perception of widespread community support for the proposal and secured funding commitments during the 2010 Federal Election campaign.

Conclusions: There is evidence of bounded rationality from both the stakeholder and patient groups, as well as a strong sentiment of localism expressed by patients and community advocates. Through understanding this particular case, health service managers can determine how to better time and target messages to the general public and to policy makers during periods of proposed changes to health services.

Key words: radiation therapy services; health service management

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Introduction

In essence, 'bounded rationality involves the decision-maker choosing an alternative intended not to maximise his values but to be satisfactory or good enough…(it) enables the administrator faced with a decision to simplify by not examining all possible alternatives'. [1, p.84] The concept of bounded rationality has been used to describe how information is sourced and prioritised in order to allow policy decisions to be made. Individuals are considered to be 'boundedly rational', in that they wish to achieve a particular policy outcome but may be unsure of how to achieve this or how to process all the information relevant to the issue. [2] Originally pioneered by Simon, [3] bounded rationality rests on several principles, which include that people intend to be rational but cognitive and emotional limitations may make them act in non-rational ways, and that limited attention spans can lead people to choose whichever option is 'good

enough' to meet the minimum aspirational level they have attached to the issue.

The debate over the introduction of radiation therapy services into the North West (NW) Tasmanian region is an example of conflicting priorities: a community desire for more local services versus a stakeholder desire for more centralised services. Prior to 2016 the NW of Tasmania did not have a radiation therapy services and patients from this region were referred to Launceston or Hobart. A media-driven representation of a community desire to have a regional radiation therapy service began to find traction during the 2000s. It was not until the Federal Election campaign of 2010 that funding was finally committed, in the highly marginal electorate of Braddon, which allowed the service to be built. [4]

The community desire for a local radiation therapy service could be seen as reflecting a deep sense of localism. Localism can result from a sense of shared identity and encourages members of the community to become involved in decision-making on issues of local significance. [5] Engagement of the local community in decision-making could achieve, or add to, a balance between government and community needs or expectations.

The community desire for a local service was expressed in several ways, largely via media articles, a petition and a public forum held in 2010. This desire was in contrast to repeated statements by the medical community that a local service was not safe, sustainable or warranted [6-8] and by the State Government that the service needed to be fully funded before it could be considered sustainable. [9, 10] It was also in contrast to the perceived need for such a service by the medical community, given the small population size. [6] However, as discussed by Cairney, [11] efforts by any scientific community to challenge a proposed change based on technical or scientific evidence will fail unless two realities are achieved: that policymakers will never think like scientists; and that there is no point in the policy-making process where scientific evidence can be introduced to manifestly impact the result.

Stakeholders, patients and family members were interviewed to determine if examples of bounded rationality and a sense of localism were evident and contrasted these to the viewpoints stated in documents from the period of the policy debate. By aligning major actors with a particular side of the policy debate, this research examined the reasons behind the use of bounded rationality, the interplay between bounded rationality and localism, and how the

medical community and State Government might have used an understanding of bounded rationality to better target their message to the general public.

Methods

To identify and understand instances of bounded rationality and localism, evidence was sourced from both semi-structured interviews and document analysis. Documents were sourced from databases, search engines and manual searches and were limited to the year 2000 onwards in order provide a full decade of debate and consistency to develop prior to the funding commitment made in 2010. Documents included journal articles, government and non-government documents, Hansard, media articles, and media releases and statements made by political candidates, representative bodies and other stakeholders.

Interviews were conducted in 2016 with stakeholders, as well as patients and family members from NW Tasmania. A total of 38 participants were interviewed, comprising 15 stakeholders in 14 interviews, with one interview involving an additional last minute participant, and 16 patients and seven family members across 18 interviews, where some spouses were interviewed together and one family member was interviewed without the patient present. Ethics approval was received from the Human Research Ethics Committee (Tasmania).

Stakeholders were initially identified from the document analysis and invited by letter to participate in an interview. Purposive snowball sampling was then used to identify further possible participants. Stakeholders included health bureaucrats, medical professionals, elected representatives, non-government organisation representatives and committee members. Questions related to the identification of actors and policies that impacted on the design and delivery of cancer services.

An opt-in system was used for recruitment of cancer patients and family, with advertising displayed in the local newspapers, health centres and community centres. Interested parties could then contact to express interest in participating. Participants were restricted to those over the age of 18 who were or had been a diagnosed cancer patient or were the direct family member or carer of a patient. Questions asked during interviews related to the accessibility of the system and suggestions for improving accessibility.

Interview transcripts and documents were read and stakeholders were grouped by profession, with patients forming a separate group. These groups were then analysed

to determine the major beliefs held by each, which were then examined for any perceived instance of boundedly rational behaviour or an expressed sense of localism.

This process involved establishing the scientific evidence presented on the case for radiation therapy services in NW Tasmania and comparing this with the beliefs and actions of policymakers and the local community and the stated rationale for these.

Results

The document analysis and interviews provide preliminary evidence of one coalition only, constituting state health policy actors – including health bureaucrats or representatives of the State Government – and the health profession. This coalition was bound together by three distinct beliefs:

1. **Safety and Sustainability: patient safety is compromised if a service cannot be sustained financially or properly resourced.**

    The cancer instance in Tasmania is increasing because of an ageing population but it hasn't gotten to the level where it would sustain four linear accelerators in the north of the state, it will only sustain just under three. So one of the machines in Launceston will close down and the one in Burnie will open. (Stakeholder 5)

    The viability and safety of an isolated single machine radiation oncology unit in the north-west will become a possibility when the critical mass of high specialised staff is achieved at the Launceston General Hospital's Holman Clinic with its third linear accelerator, if cancer rates grow as projected, and if referrals of people with cancer for radiation oncology reach the nationally recommended rate of 52.3 per cent. [12, p.45-46]

2. **Recruitment and Retention: recruiting and retaining specialist medical staff is an issue for the NW and would impact sustainability.**

    It is expected to be more difficult to recruit to the North West Coast and one of the potential risks with a new North West centre is that specialised staff attracted to this area may come from within the existing staff at the LGH. This may produce a situation where both centres are understaffed. [13, p.2]

    The major difficulty will be the recruitment and retention of the highly specialised staff necessary to implement and maintain the service. Such a service requires radiation oncologists, specialised nurses, radiation therapists, engineers, medical physicists and other technical staff. All of these personnel are in short supply in Australia. [6]

3. **Travel, Transport and Accommodation: providing assistance for patients to travel was a solution to lack of access.**

    I actually don't think that distance in Tasmania is a critical issue… if people have greater awareness and understanding then the very small distances that we need to travel in Tasmania pale into insignificance. (Stakeholder 3B)

    But there are still patients who still need to travel… So if they do have to travel it's about policy decisions making it easier for them to stay overnight and their support person. So it's about equity of access not equality of access. (Stakeholder 6)

These beliefs showed a focus on the machinations of delivering a radiation therapy service and the prioritisation of patient care over geographic accessibility. These beliefs were demonstrated through evidence on the need for a service and the capacity for it to be delivered in terms of human and financial capital, rather than emotive statements.

What the results did not show, however, was any indication of a competing coalition. There were some shared beliefs amongst members of the community around travel being a burden and around the notion of equity. However, there was no group who advocated consistently for a regional service and came together in non-trivial action. There was one person who organised a petition and a forum. There was one journalist who wrote at least 18 articles framing the issue as one of great importance to the NW and involving significant community involvement:

> *The cancer centre fight is an example of how the politics and lobbyists with vested interests can stack the argument. Politicians did not expect everyone in the region almost to a man, woman and child to back up time and again and refuse to budge from a collective demand to have the cancer centre built in Burnie. [14, p.10]*

However, their efforts were made in isolation to each other and with no evidence of community involvement. So how can there be a major change in policy, designed to serve the needs of the community, when no community demand is evident? The results suggest that bounded rationality may have guided policy decision-making in order to facilitate community expectations.

This is highlighted by one member of a non-government organisation involved in cancer services, who stated:

> *'There have been times when politics have overridden really what is in the best interests of the client…elections have forced particular policies to be enacted.' (Stakeholder 2)*

Another, being a senior specialist, stated:

'…money has been inappropriately apportioned to different bits of the state which means that they can't actually provide any proper service anywhere…those sorts of policy decisions are absolutely nonsense.' (Stakeholder 3A)

The results also showed some strong signs of localism amongst the NW community, even if it was not necessarily demonstrated through a formal, active coalition or lobby group.

Stakeholder 1 was heavily involved in lobbying for radiation therapy services and stated that there was a considerable feeling in the NW that they miss out because they don't have a critical mass. The participant stated that forcing NW residents to travel for radiation treatment was unfair and that a local service needed to be built to deliver equity. *'If people needed to come from Melbourne to Burnie for treatment an hour's flight and back is less than having to go through to Launceston or Hobart. So there is a possibility of expanding the clientele'.* To summarise, their argument was that people from the NW should not be made to travel to Launceston (being as little as 50 minutes away) but that people from Victoria could travel to NW Tasmania to receive treatment and that this was acceptable. This points to the irrationality and contradictory nature of some beliefs, consistent with the notion of boundedly rational decision-making.

Interestingly, not all the patients interviewed showed a strong sense of localism. Indeed, some were quite vocal in their opposition. One patient stated:

'Regional parochialism has, for want of a better word, buggered the hospital system in Tasmania… They've wasted so much money where they could have a damn good helicopter service.' (Patient 12)

Discussion

The health and policy coalition could, in terms of bounded rationality, be seen as the 'scientific community' in this particular health sphere. They were the medical professionals and health bureaucrats who understood intimately the service and its complexities. The Tasmania Government (as a state health policy actor) should therefore have been both a coalition member as well as a policy maker, thereby strengthening the link between the 'scientific community' and the decision-making authority. This was true in essence. However the Federal Government's takeover of the issue in the 2010 Federal Election, by committing Federal funding for a state responsibility, changed the dynamics so that the true policymaking power lay with the most hierarchically superior level of government.

The absence of a second coalition to lobby for policy change leads to the question of whether change was agitated for by something or someone other than a consumer coalition. There is a possible role of the media in framing and promoting the issue of radiation therapy services, giving the impression of widespread community support when little more than general community interest existed. Or it could even be that the media, in a demonstration of bounded rationality, stated that there was a community desire for this radiation therapy service. However, in reality there is little evidence of having been a 'community desire' at all when it came to this issue.

In terms of understanding the actions of policymakers, bounded rationality can be seen. Acting on the desire to be elected or re-elected, the political parties vying for power in the 2010 Federal Election gathered enough information to form the basis of a decision, one that could win public support. This decision was that the community desired a radiation therapy service in the NW and that building a service in that region was the pre-packaged solution. Other alternatives, regardless of how clearly they were articulated or how strongly these were promoted by the 'experts' in the field, could not find traction in the midst of this boundedly rational decision-making.

But would this change have occurred without the intervention of the Federal Government? The evidence here is mixed. On one hand, Braddon was a marginal seat in what was going to be a close election. On the other hand, funding had previously been concentrated on the Launceston service, including a 2007 commitment that led to a third linear accelerator there. Significantly, discussion over the possible funding of radiation therapy services only became noticeable after a petition was presented to State Parliament in 2010 on the eve of a public forum in the lead up to the election. This indicates that the move from no radiation therapy to a radiation therapy service reached a marked increase in momentum during the Federal election campaign of 2010, after no clear timeline from the State Government for achieving this change. Indeed, part of the decision to place a third linear accelerator in Launceston, rather than establishing a service in the NW, had come down to issues of sustainability and recruitment, indicating the State Government concurred with the views of the health community. [13] Therefore, change was clearly instigated at a Federal level.

Understanding the reality of bounded rationality in policymaking allows health professionals and those involved in health policy to be more strategic in what they say and

when they say it. As Cairney [11] states, there is no one point in the policy process at which scientists or experts can step in and have a significant effect on the outcome. The process is more chaotic, more emotive and less logical than that. By understanding the limitations to a policymaker's receptiveness to new information, even in the face of credible new information, health experts can target messages more effectively.

Skinner [15] discusses the idea of being more strategic using the concept of 'defensive localism' to discuss proposed changes to local health networks in Canada. Some of the networks affected, rather than fighting the changes, used the opportunity to secure additional funding in return for their acquiescence. Therefore, if health professionals or managers could frame the issue in terms of what the affected groups might be able to secure or gain if they supported evidence-based changes then these groups might take that opportunity. Likewise, health professionals and management might realise that their organisations are the ones needing to acquiesce and could use this understanding to bargain for a better outcome. The consequence of using this understanding and being more strategic with policy actions may well mean a more safe and sustainable service for patients, even if that patient group is seemingly lobbying for a different outcome.

Conclusion

This paper has examined how political strategy used to win support in a marginal seat during a marginal election reveals the use of boundedly rational decision-making in the establishment of radiation therapy services. The efforts of the scientific community, namely health bureaucrats and health professionals, were to highlight the lack of sustainability and safety in such a service and the ongoing issues of recruiting and retaining specialist oncology and radiation therapy staff. The Tasmanian Government had also refrained from moving forward on establishing a radiation therapy service in the NW for the same reasons. It was not until the commitments made by the Federal Government in 2010 that the Tasmanian Government was left with no choice but to proceed.

Yet, the decision to commit funding does not appear to be based on any evidence presented that there was a need for this service in the NW region. The evidence, indeed, supported the contrary. What was evident was a sense of localism in the region that made the establishment of radiation therapy services a pre-packaged solution aimed at meeting the aspirational objectives of the Federal

Government to be re-elected in 2010. This article provides health service professionals and managers with an opportunity to understand the political, boundedly rational motivations that underpin policy change and the incorporate this understanding into their own policy objectives.

Competing Interests

The authors declare that they have no competing interests.

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Assessing the Competence of Evidence-Informed Decision-Making Amongst Health Service Managers

Z Liang, P Howard and D Wollersheim

Abstract

Objective: Evidence-informed decision-making (EIDM) amongst health service managers has been positively linked to better decision outcome, hence more effective healthcare provision. Efforts to improve EIDM practice are required to meet the current challenging healthcare environment. One key step to improve such practices is skill enhancement. The purpose of the study is the measure the competence of mid-level managers in two Victorian hospitals in applying EIDM in their roles.

Design: The competence of 25 mid-level managers in applying EIDM in their roles was assessed via a 360° process using an online management competency assessment tool (MCAP Tool) and case-study objective assessment tool.

Setting: Mid-level managers working in Victorian hospitals were selected.

Main outcome measures: The competence of mid-level managers in applying the competency of EIDM was assessed. This paper discusses the areas of improvement identified in enhancing the competence of EIDM amongst mid-level managers in the group, organisational and individual levels.

Results: EIDM is an important competency for health service managers. Managers who participated in the assessment are competent in applying EIDM in their roles, but require guidance and improvements. Strengths and weaknesses of managers in applying EIDM in their roles varied between organisations.

Conclusion: This paper suggests that not only improvement of specific aspects of evidenceinformed decision-making amongst health service managers are required, additional more systematic changes at the organisational and individual management level are essential to achieve competent evidence-informed decision-making practices amongst health service managers.

Abbreviations: CCA – Combined Colleagues; CEO – Chief Executive Officer; EIDM – Evidence Informed Decision Making; OA – Objective Assessment; SA – Self Assessment.

Key words: evidence-based management/practice; evidence-informed decision-making; health service managers; management competency.

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Introduction

Healthcare has experienced rapid changes in the past two decades and the reform of the healthcare system has altered the ways how it is managed and functions. Recognising the unreliability of decisions made relying solely on experience and motivated by the practice of evidence-based medicine and evidence-based policy, the concept of evidence-based healthcare management has been promoted to maximise the effectiveness and efficiency of service provision by healthcare organisations. [1,2] The most recent literature suggests that evidence-informed decision-making (EIDM) should be one of the core competencies essential to health service managers for effective management performance.

[3,4] However, recent research suggests that managers may not have absorbed the behaviour into their daily practice, especially the use of scientific evidence to guide decision-making. [5,6]

A survey of 130 senior health service managers in Victoria found that own experience, data internally developed in the organisation and stakeholder preference were the three most used evidence types to guide management decision-making. [6] Similarly, Birdsell et al found that decision makers' preferred source of knowledge was documents produced within the organisation. [7] Evidence should be broadly defined to include both scientific evidence (the researchers' view) and colloquial evidence (the broader view outside the scientific community). [5] The 'underuse' and 'misuse' of proven management strategies limit management effectiveness. [1]

Factors that influence EIDM amongst managers can be categorised into three levels: societal and industry level (beyond the organisation level), organisational level and individual manager level. [8] One of the barriers at the individual manager level is a lack of skills in searching for, interpreting, appraising and applying health management research findings to practice. [8-11] Investment in the training and development of the competence of health services managers is required. [12] However, before the training and development strategies can be formulated, the current competence of health service managers in applying EIDM in their daily management practice and the associated training needs requires a better understanding.

In this context, competency assessments of mid-level managers in two public hospitals in Victoria were conducted in order to understand managerial competence and competency development needs. [4] The assessment included a 360º subjective assessment and a case study-based objective assessment, measuring six core competencies confirmed as essential to effective management performance for mid- to senior-level managers in Victoria. [3,4] One of these six core competencies was EIDM.

The purpose of this paper is to present the results of assessment of EIDM in order to answer the following research questions:

1. Are mid-level health service managers competent in demonstrating the competency of EIDM in their roles?

2. Are there behaviours within the competency of EIDM requiring improvement for midlevel health service managers in both individual and organisational levels?

Methods

Participants

Invitations to participate in the assessments were sent to Level IV managers in two public hospitals in Victoria, Australia (management level is classified according to the supervision structure with Chief Executive Officers (CEO) as the Level I managers of the organisation). [3,4]

Competence assessment

Managers' capability in applying EIDM in their roles was tested by a 360° subjective assessment and a case study-based objective assessment. The 360° subjective assessment included self-assessment (completed by the primary participating mid-level managers), supervisor assessment, peer assessment (managers from the same management level within the same organisation) and report assessment (staff who report directly to the primary participating managers). It took less than 15 minutes to complete each type of the assessment.

In consideration of how evidence-based management was defined in the literature, [11-14] the study defined evidence-informed health services management as the systematic application of the best available evidence to decision-making and a process of gathering, assessing and using evidence rather than a simple act of choosing between alternatives. A systematic literature review and intensive consultation with and contribution from management experts from various health services in Victoria and focus group discussions with mid- and senior-level managers resulted in the finalisation of 12 behavioural items (see Appendix I) that constitute the core competency of EIDM. These items were used to test a manager's required level of competence.

The objective assessment was developed as a series of 15 questions related to a case study developed on the planning and implementation of a clinical governance framework across a range of services of a regional health organisation. The questions addressed 11 of the 12 behavioural items related to EIDM listed above (item No.8 omitted). Fifty minutes were allowed for the completion of the assessment. Ten of the items were tested by two multiplechoice questions and one was tested by a single open-ended question.

Assessments were completed online through a web-based platform developed specifically by the research team for hosting and analysing the assessments. To minimise entry error, the assessment process limited the numerical responses to each question and unanswered questions were labelled as missing. Table 1 details the 7-point Likert scale used for the assessment for the level of competency.

Table 1: Behavioural scale for self-assessment

1	Not competent	Do not understand the requirement and am not capable of applying it in my role
2	Basic or novice	May be capable of demonstrating minor aspects in my role
3	Advanced beginner	May be capable of demonstrating in my role, but not in all required aspects
4	Competent but need guidance occasionally	Can generally demonstrate in my role, but guidance is needed occasionally
5	Competent, no guidance is required	Can generally demonstrate in my role independently, but have not had extensive experience
6	Proficient	Always apply appropriately in my role, have had extensive experience
7	Superior expertise/ skill coach for others	Always apply appropriately in my role, have had extensive experience and can teach this competency to others

Data management and analysis

Raw data from the server hosting the website were downloaded into MS Excel files for consistency checking and then converted to SPSS (version 22) for further analysis. Univariate analyses for both individuals and groups (management and organisational levels) were also downloaded from the server into MS Excel files for interpretation. The analyses provided separate results for the four subjective assessment types (self, supervisor, peer and report) and the objective assessment. To protect the confidentiality of the colleagues who completed the assessments on the primary participant, mean scores were calculated combining the supervisor, peer and report assessments producing a 'combined colleagues' result. The results are presented as mean scores for each behavioural item (12) and the EIDM core competency. Ethical approval was granted by La Trobe University prior to conducting the project.

Results

A total of 25 mid-level managers from two public hospitals participated in the 360º subjective assessments. Seventy-eight of their colleagues also participated in the 360º subjective assessment as assessors. One hospital decided to invite two staff to complete the Report Assessments for each of the primary participating manager. Table 2 details the number of participants in each of the assessments.

Table 2: Participation record for the MCAP assessment

		HOSPITAL
360º Subjective assessment	**Self-assessment**	25
	Supervisor assessment	24
	Peer assessment	23
	Report assessment	31
Objective Assessment		18

Competency scores for the mid-level managers

The vast majority of the managers who completed the 360° subjective assessments did not skip questions giving a near 100% completion rate for the 12 behavioural items included to test the EIDM competency. Table 3 shows the mean competency scores calculated from the self- (SA) and combined colleagues (CCA). A mean score of ! 5.0 in the SA and CC assessments indicates that managers can demonstrate such competency independently. The converse is true if the mean scores are less than 5.0. Mean scores less than 4.0 in the objective assessment (OA) also indicate than participants are less then competent.

Table 3: Competency statistics for evidence-informed decision-making by assessment type

	MEAN	MEDIAN	MINIMUM	MAXIMUM
Self-assessment	5.13*#	5.25	*3.50*	6.17
Combined colleague assessment	5.71*	5.69	*4.14*	6.65
Objective assessment	*3.59#*	*3.68*	*1.77*	5.27

* t = 2.939, 95% CI = 0.961, 0.180, p = 0.005

\# t = 4.814, 95% CI = 0.871, 2.160, p < 0.0005

Table 4 provides details of mean scores calculated from each of the behavioural items from the SA, CCA and OA. Scores for the individual behavioural items from the different assessments vary considerably. Some items received scores <5.0 indicating that occasional support is required for the managers. Behavioural items with scores <4.0 indicate that the managers are not yet able to demonstrate the items consistently. The mean scores from the combined colleagues' assessments were consistently higher than those from the selfassessments. The differences between the means were statistically significant when tested by t-tests for all the behavioural items except for one (item 1). In addition, the mean scores from the objective assessments were consistently lower than the self-assessments. The differences between the means were statistically significant when analysed by t-tests for all the behavioural items except three behaviours (items 2, 3 and 4).

Results for managers from the two hospitals were also calculated. Table 5 details the mean scores calculated from each of the behavioural items from the SA as an example.

Strengths and weaknesses of participating managers

In total, 25 hospital managers participated in the 360º assessments. Competence levels identified for individual managers varied. In the 360° subjective assessment, some managers received high mean scores of ≥6.0 from the SA or CCA indicating these managers are not only competent but also have extensive experience in applying EIDM in

Table 4: Mean scores for the 12 behavioural items by assessment type

BEHAVIOURAL ITEMS#	HOSPITAL MID-LEVEL MANAGERS		
	SA	CCA	OA
EIDM* MEAN SCORES	5.13	5.71	*4.42*
Item 1	5.48	5.76	*4.60*
Item 2	*4.96*	5.61	*4.33*
Item 3	5.12	5.63	5.70
Item 4	5.0	5.69	6.10
Item 5	5.16	5.59	*4.33*
Item 6	5.24	5.81	*4.20*
Item 7	*4.88*	5.68	*4.20*
Item 8	*4.88*	5.73	Not tested
Item 9	5.22	5.54	*4.0*
Item 10	5.0	5.65	*3.0*
Item 11	5.20	5.86	*3.67*
Item 12	5.39	5.9	5.57

* Evidence-Informed Decision-Making. Item scores in bold italics indicate low scores.

\# See appendix 1 for a list of item descriptions.

Table 5: Mean scores from self-assessment for managers from two hospitals (H1 and H2)

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5	ITEM 6	ITEM 7	ITEM 8	ITEM 9	ITEM 10	ITEM 11	ITEM 12
H1	5.57	5.57	5.51	5.29	5.71	5.71	5.0	*4.86*	5.43	5.0	5.71	5.71
H2	5.44	*4.72*	*4.89*	*4.89*	*4.94*	5.06	*4.83*	*4.88*	5.12	5.0	5.0	5.25

Table 6: Percentage of managers with low or high mean scores from the selfassessments, combined colleague assessments and objective-assessments, by organisation.

	% OF MANAGERS WITH MEAN SCORES <5.0 FROM SA* & CCA# AND MANAGERS WITH MEAN SCORES <4.0 FROM THE OA^			% OF MANAGERS WITH MEAN SCORE ≥ 6.0 FROM SA* & CCA#, AND % OF MANAGERS WITH MEAN SCORES ≥5.0 FROM THE OA^		
	SA	CCA	OA	SA	CCA	OA
Hospital 1	14%	14%	Not tested	29%	86%	Not tested
Hospital 2	39%	6%	0	17%	39%	12%

* SA = self –assessment; # CCA = Combined colleagues assessment; ^ OA – Objective assessment.

their roles. Conversely, some managers received scores <5.0 placing themselves at the bottom of the management group within the organisation. Scores <5.0 also indicates that the managers require occasional guidance in applying EIDM in their roles. Table 6 details the percentage of managers who received overall competency mean scores <5.0 from either SA or CCA, or who received overall competency mean scores ≥6.0 presented by organisation.

Table 7 details the percentage of behavioural items that have been identified as strengths and weaknesses amongst managers in different organisations. There was large difference between the two hospitals. The participants from Hospital 2 assessed themselves as 50% of items less than 5.0, indicating 'less than competent', compared to 8% from hospital 1.

Table 7: Strengths and weaknesses of managers from self-assessment, by organisation.

	HOSPITAL 1	HOSPITAL 2
% of behavioural items with <5.0 mean score	8%	50%
% of behavioural items with mean score ≥0.5 above the competency mean from self-assessment	42%	0

Discussion

Mean scores greater than five received for the overall competency of EIDM from SA and CCA indicate that mid-level managers working in hospitals should be able to apply the competency of EIDM to their roles competently and independently. Not all behavioural items within the competency of EIDM received the same mean scores from the subjective assessment. Items receiving scores significantly lower or higher than the mean of the competency indicate the weaknesses and strengths of the manager in demonstrating the competency. In the CCA, all

items received very similar scores within the range of 5.54 and 5.9, which did not assist identifying significant strengths and weaknesses as a group. However, for the SA, items 2, 7 and 8 received scores less than five, indicating some managers require occasional guidance in demonstrating these behavioural items. These items can be seen as perceived weaknesses amongst the managers indicating improvements may be required.

As mentioned earlier, the application of EIDM is not a simple act of choosing from alternative evidence but involves a number of steps reflecting a systematic application of the best available evidence to guide decision-making. [11-14] The study further breaks down such practice into 12 steps demonstrated by 12 behaviours, which can be used to test manager's competence. Therefore, the overall competence of EIDM for the whole management group does not rule out that there are areas that managers can further improve in order to enhance their competence in EIDM. It is believed that the higher the management level, the higher the level of competence expected. [15] The enhancement of the EIDM practices may be essential for management career progression, succession planning and developing the overall management workforce in meeting the diverse needs of the future.

Strengths and weaknesses in EIDM for managers from different organisations

The literature supports the concept of core competencies amongst specific professions such as health service managers. [15-17] However, the competency contextual sensitivity concept suggests that the level of competence required to demonstrate the core competencies might vary between sectors and organisations. [18] Therefore, the overall competency of the management group may not reflect actual managerial competence from individual organisations. The current study confirms that managers from two different organisations perceived their competence of different behavioural items differently.

Six out of 12 behavioural items from hospital 2 received mean scores less than five indicating that managers perceived themselves as requiring occasional guidance in demonstrating these behavioural items competently. On the other hand, managers from hospitals 1 gave 42% items of competency scores of at least 0.5 higher than the overall competency mean from the whole group. These items may indicate that managers in hospital 1 have higher confidence in their competence of demonstrating these particular behavioural items, which can be seen as their strengths.

Competency at the individual manager level

In total, 103 health service managers participated in the 360° subjective assessments (at different capacity: primary participants, supervisors, peer and staff). The number of managers perceived as 'requiring guidance in demonstrating the competency of EIDM' and the number of managers perceived as 'highly competent with extensive experience' in the 360° subjective assessment differs by organisation, as evident in Tables 6 and 7, demonstrating that competence levels identified for individual managers varied significantly across organisations. For example, over a third of managers from Hospital 2 perceived themselves as requiring guidance in applying the competency in their roles, whilst only one manager from Hospital 1 indicated likewise. Conversely, more than four fifths of managers from Hospital 1 were perceived as highly competent by their colleagues. This supports the concept that management competency is context sensitive. Thus, the requirements for enhancing the EIDM competence for a management group at the system level and at the individual or organisation level may be different. [8,10]

The study confirms that the requirements for improving managerial competence such as EIDM vary between individual managers. Therefore, in addition to considering strategies at both the system and organisation levels, it is equally important that the needs for the improvement of competence in EIDM amongst individual managers are identified, and that targeted training and development opportunities are provided for the achievement of competency improvement. This supports Liang et al's that factors such as skill requirements are addressed at the individual level in order to improve the overall EIDM competence of the management group. [8,10]

Implications to organisations: addressing the organisational level barriers to EIDM

Despite the speculation in the literature that health service managers may not have the required skills to apply EIDM in their roles, this study strongly suggests that mid-level managers from Victorian hospitals are competent. This again prompts the question of why managers do not apply EIDM in their daily work as discussed in the introduction. Drawing on Liang et al's study, from the eight key barriers to evidence-based management practice identified amongst Victorian mid- to senior-level health service managers, the top ranking factors were: time availability, relevance of management research, and a lack of financial resources to support best practice. [8-10] A lack of critical appraisal skills was ranked eighth on the list. However, the study participants suggested skills that critically appraise evidence as one of the top three factors that could improve and encourage EIDM at the management level. [10] The current study clearly confirmed that, despite the competence demonstrated in the assessment, there are areas in EIDM practice requiring improvement for the whole management group in both hospitals and CHS, for some management groups in individual organisations and for some individual managers. Therefore, a mixture of strategies is required to achieve system level, organisational level and individual management level improvement in the EIDM competence.

Furthermore, at the system and organisational levels, investment in skills enhancement for managers alone may not be adequate in improving and encouraging the EIDM practice. Many other key factors [8] that influence EIDM practice needs to be addressed. Areas include: i) improving the usefulness and relevance of research evidence with actionable recommendations based on contextual consideration; [19,20] ii) strong leadership and incentives provided by the organisation, [13,22,23] and iii) developing strong partnerships between researchers and managers. [19,24,25]

Limitations of the study

This study focused on mid-level HSMs at two local hospitals. Participants were volunteers, thus not randomly selected. The sample size was small, but enough to detect significant differences between the assessment types and between the two hospitals. Lessons learnt from the study need to investigated in more detail in a larger and more diverse population.

Conclusion

Using a 360° subjective assessment and a case study-based objective assessment, the competence of mid-level managers from two Victorian hospitals in demonstrating the competency of EIDM was assessed. The assessment confirmed that the mid-level managers are competent, with areas requiring guidance and improvement in order to enhance their competence. The study also confirmed that

the areas requiring improvement in the EIDM practice varied between organisations and individual managers. The study supports the evidence that improving the competence of individual manager is important to enhancing the EIDM practice. However, such improvement cannot be achieved on a large and wide scale without a combination of efforts at system, healthcare organisation and individual management levels.

As a first step towards improving EIDM practice amongst health service managers, the identification and confirmation of individual managers' competence in applying the competency of EIDM in their roles and areas within the EIDM practice that require improvement are necessary. To improve EIDM in management practice, targeted strategies should be developed for managers from individual organisations and sector-wide. With other key influential factors to EIDM practice being addressed, significant improvement in EIDM amongst the health service management workforce may be achieved – a practice leading to better decision outcomes and ultimate improvement of the effectiveness and efficiency in health service provision.

Acknowledgements

Competing Interests

The authors declare that they have no competing interests.

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Appendix 1: 12 behavioural items for evidence-informed decision-making (selfassessment)

1. Use timely and appropriate questioning/investigation to identify the nature of problem, issue or opportunity.

2. Seek appropriate evidence from multiple organisational sources to guide the identification of solutions.

3. Seek appropriate (qualitative/quantitative) evidence from multiple external sources to guide the identification of solutions.

4. Critically appraise the validity and relevance of evidence.

5. Assesse and prioritise the relevance of the evidence to the question(s).

6. Actively use evidence to question and improve existing practice and process.

7. Apply the best form(s) of evidence to guide management decision-making.

8. Evaluate the process of searching for and applying evidence to management decisionmaking.

9. Anticipate decision implementation problems/impacts and develops and communicate appropriate contingency plans.

10. Set measures and use them to evaluate the outcomes of decisions.

11. Encourage and support colleagues and subordinates to use evidence to guide decisionmaking.

12. Anticipate and prepare for the future by staying abreast of best practice and emerging trends that will have an impact on health outcomes.

Effects of Clinical Placements on Paramedic Students' Learning Outcomes

N Wongtongkam and L Brewster

Abstract

Background: Clinical placements are of major importance in students' learning processes through creating supportive environments and fostering independence into paramedic professional roles. The study aimed to explore whether clinical experiences in out-of-hospital emergency services affected students' learning outcomes and satisfaction.

Methods: A retrospective study was carried out using preceptors' evaluations (n=160) and students' feedback forms (n=21). Descriptive and non-parametric inferential statistics were used to analyse quantitative items, and open-ended questions were analysed using content analysis.

Results: Findings showed that more than 70% of students were satisfied with the quality of preceptors and the fieldwork atmosphere. Preceptors reported that students' clinical skills across all categories improved significantly in the last two weeks of training. Qualitative data indicated that students displayed appropriate behaviour and professional socialisation and were keen to learn, and demonstrated competence in paramedic skills.

Conclusion: A supportive atmosphere and positive student–preceptor relationships are key attributes for clinical placements if students are to accomplish learning outcomes in out-of-hospital environments.

Key words: clinical placements; learning outcomes; New South Wales; paramedic; students.

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Introduction

A preceptor is defined as an experienced clinician who facilitates and fosters clinical learning skills, enhances competencies and builds confidence in students preparing for healthcare professions by direct involvement in the teaching and learning process in clinical settings. [1]

The preceptor role is multifaceted and complex [1] because he or she must align responsibilities for patient care with facilitation of student learning. Preceptors may experience stress and burnout [2] caused through increasing workloads and the need to protect their licence to practise from allegations of malpractice that may result from student errors. [3] Consequently, preceptors may not acknowledge students or involve them in the clinical team. Several studies have emphasised that working in supportive environments and developing good clinical skills and decision-making in patient care are important influences on students' decision to remain in healthcare professions. [4] Preceptor feedback contributes substantially to student achievement and improvement in their critical thinking skills. [5, 6]

Additionally, students who regularly use feedback to improve their work are more likely to succeed as part of a clinical team and attain a level of independence in their clinical skills.

Paramedics work in ambulance services to provide care in critical issues or medical emergencies. An ambulance

emergency call-out is multifaceted and has extraordinary challenges because paramedics manage a wide range of conditions in patients, from lifethreatening issues requiring immediate attention to those where no treatment is needed. Paramedics also encounter people from various age groups, cultures, and social backgrounds [7] and the services delivered to patients are significant for their wellbeing and recovery. [8]

Therefore, it is essential that undergraduate paramedic students gain hands-on skills through clinical placements in ambulance services so they can apply knowledge learned in the classroom to real life situations. It is essential that undergraduate paramedic students have opportunities to practise in clinical settings so they can integrate the clinical knowledge gained at university with emergency practices. The number of clinical placements hours required by universities varies and is inconsistent across programs and Australian states. In the authors' university, students are expected to spend 480 hours on placements with ambulance services and in community settings. [9] Second and third year paramedic students spend nearly 200 hours on placements a year (4–5 week). Clinical environments in ambulance settings are different from those in hospitals because paramedics must perform tasks quickly in difficult conditions and make rapid clinical judgements to save patients' lives at the scene. [5] Hence, the role of healthcare professionals in out-of-hospital settings is somewhat different from that of hospital emergency room staff. Although preceptors have similar roles across healthcare professions, paramedic professionals perform a diverse range of invasive procedures, some of which may be considered risky treatments. [10] Hence, paramedics require different clinical skills to those of nurses. While several studies have explored the relationship between clinical placements and aspects of student learning, most have emerged from nursing perspectives and there are few studies from the paramedic paradigm. [11]

Boyle and colleagues carried out a pilot study of paramedic students' experiences of clinical placements in Victoria and found that nearly 85% of participants mentioned that classroom scenarios helped them to understand real-time patients and approximately 90% gained handson practical experiences while working on the road. However, 69% of them believed they undertook unproductive work and 39% did not have opportunities to be involved in patient assessment or clinical scenarios. [12] A qualitative study with 15 paramedic preceptors indicated there were differences between skills students obtained from classrooms and hands-on skills seen in ambulance services. They also

believed that short placements limited students' learning opportunities, while extended periods of clinical practice with specific instructors for students would produce beneficial clinical experiences. [13] Unfortunately, the study did not measure the competencies and satisfaction students gained from placements. There are limited opportunities for clinical placements in Australia, so one university in Victoria took paramedic students for international clinical placement experiences in Israel.

When the clinical benefits of work experiences in traditional placements and Israeli ambulance services were compared, findings showed that caseloads between the two settings were not significantly different but students gained more experiences from the various shifts worked in Israeli ambulance services. [14]

It appears that most studies of paramedic clinical placements in Australia have been conducted in Victoria. Clinical experiences obtained from ambulance services in other states may be similar, but this study aimed to explore the relationship between paramedic preceptors' views of student competencies and student satisfaction with preceptors in clinical settings in the Ambulance Service of New South Wales, Australia.

Methods

This retrospective study used preceptors' assessments and student feedback forms collected in the Bachelor of Clinical Practice (Paramedic) course. Paramedic preceptors assessed the clinical skills and other competencies demonstrated by undergraduate paramedic students who undertook a four-week clinical placement in ambulance stations around New South Wales in their final year. The 233 students were divided into three groups for placement in February (n=57), August (n=83) or November (n=93). Forms from 73 paramedic preceptors were incomplete, giving a total of 160 responses for analysis. Because this was a retrospective study, informed consent was not sought.

Instruments

Two self-report questionnaires were developed by one of the authors who has worked in ambulance services and educational settings for more than 20 years. Three lecturers from the university assessed the questionnaires for content validity and judged that they were suitable for the paramedic clinical placement paradigm.

Preceptor evaluation of student competency

Preceptors assessed student competency on 15 items divided into six main categories: survey on scene, monitoring and assessment, communication, clinical decision-making,

functioning as a team member, and standard infection control precautions. Preceptors were asked to rate each item on a 4-point nominal scale, E (Exemplary), S (Satisfactory), NI (Needs Improvement), U (Unsatisfactory), and to report students' strengths and areas for improvement in two open-ended questions. Each student was assessed twice during placement, at the end of Week 2 and Week 4, and preceptors reported their assessments directly to a lecturer at the university. Internal consistency (Cronbach's alpha) was 0.921.

Student clinical placement feedback

This was a self-administered 14-item tool for students to provide feedback for each ambulance service in which they undertook clinical placement, in four categories: preceptor's expertise (clinical skills, experiences and role modelling), supportive environment (orientation, staff welcoming, participation encouraged), constructive feedback (verbal and written), and attitude towards returning to placement venue. Each item was assessed on a 6-point Likert scale, Non-Applicable (1), Strongly Disagree (2), Disagree (3), Uncertain (4), Agree (5), and Strongly Agree (6). Two open-ended questions were used to assess what students found most valuable during the clinical placement, and what they liked least in the clinical placement. Students completed the feedback form at the end of the four-week placement and returned it to the university. In total, 21 forms were submitted. Internal consistency of this instrument was 0.849.

Data analysis

Quantitative data. Descriptive statistics were used to analyse frequency counts and percentages. For the student feedback scale, total scores were summed from the 14 items and divided into quartiles. The 1st quartile was defined as 'to some extent satisfied', followed by 'satisfied' (Q2), 'very satisfied' (Q3), and 'extremely satisfied' (Q4). For preceptors' assessments, Wilcoxon's matched pairs signed ranks test was performed to compare the difference in competency for each student between the end of the second and fourth weeks of clinical placement. A p value < .05 was used to indicate statistical significance. All analyses were performed using SPSS version 20.

Content analysis

Qualitative data (open-ended questions). Content analysis was used to analyse the openended questions on preceptor assessments and student feedback forms. This is an appropriate method for handling large amounts of data. [15] The researchers extracted key words and phrases from the open-ended responses, then allocated codes and

developed categories and themes. The emergent codes and themes were discussed until agreement was reached to validate the findings. For instance, themes identified in preceptor evaluations were 'student competencies' and 'skills improvement', and categories included 'appropriate behaviour and professional socialisation', 'competency in clinical skills and keen to learn', 'lacking selfconfidence' 'communication difficulty', and 'shortage of case scenarios'.

Results

Preceptors submitted two complete reports for 160 students (40 in February, 60 in August, and 60 in November). Of these students, 88 (55%) were male and 72 (45%) female. The 73 incomplete assessments were excluded from the study. Most preceptors from 21 ambulance stations were male and their paramedic qualifications ranged from paramedic (P1) to paramedic specialists (Intensive Care Paramedic and Aviation Paramedic).

Preceptor evaluations of student competencies are shown in Table 1. Unsurprisingly, students showed improvement across all items between the assessments in Week 2 and Week 4. The differences were statistically significant. For the item 'conducting a primary survey' the percentage of students rated as 'Needs Improvement' fell significantly from 6.25% at Week 2 to 4.38% at Week 4, a reduction of 29.92%. The improvement was more marked for the item 'establish rapport with patients', from 6.88% at Week 2 to 0.63% at Week 4, a reduction of 90.84%. The number of students rated as 'Needs Improvement' on any item at the end of Week 2 fell significantly by the end of Week 4. Similarly, the preceptor evaluations at 'Exemplary' level substantially increased to nearly 60% at Week 4 for the item 'assess patient to formulate diagnosis', and by approximately 50% for the item 'conduct a secondary survey'. In addition, evaluations at 'Exemplary' level for the items about using communication skills to obtain information and using clinical decision-making to suggest appropriate care increased by almost 40% between the end of Week 2 and the end of Week 4.

Student perceptions are shown in Table 2. The majority of students acknowledged that clinical staff welcomed them and provided a supportive atmosphere, with approximately 72% strongly agreeing. Similarly, more than 71% strongly agreed that their preceptor had appropriate skills and experience and encouraged them to ask questions, helped them to engage in clinical experiences (61.90%), and provided good verbal feedback on their progress (52.38%). More than 50% of students agreed that they received appropriate direction when they first arrived and had

Table 1. Preceptors' perceptions of student competencies during four-week placement

DETAILS	EXEMPLARY		SATISFACTORY		NEEDS IMPROVEMENT		UNSATISFACTORY		P VALUE
	WK1 −2	WK3 −4	WK1 −2	WK3 −4	WK1 −2	WK3 4	WK1 −2	WK3 −4	
Student's capacity to conduct a complete survey, identify and minimise potential on-scene risks, maintain a safe working environment.	26 (16.25%)	32 (20%)	115 (71.88%)	117 (73.13%)	19 (11.88%)	11 (6.88%)	–	–	.03*
Student's ability in conducting a primary survey.	38 (23.75%)	62 (38.75%)	112 (70%)	91 (56.88%)	10 (6.25%)	7 (4.38%)	–	–	.00*
Student's ability to conduct secondary survey, incorporating a systematic physical examination of the whole body.	29 (18.13%)	55 (34.38%)	109 (68.13%)	91 (56.88%)	32 (13.75%)	14 (8.75%)	–	–	.00*
Student's competencies in obtaining a history of the event from the patient, carer and bystanders	39 (24.38%)	64 (40%)	90 (56.25%)	83 (51.88%)	31 (19.38%)	13 (8.13%)	–	–	00*
Student's ability in checking and monitoring a patient's vital signs and repeated vital signs, e.g., SP, Pulse, ECG.	84 (52.50%)	111 (69.38%)	72 (45.0%)	48 (30%)	4 (2.50%)	1 (0.63%)	–	–	00*
Student's competence to undertake a patient assessment to provisionally diagnose the patient's chief complaint.	21 (13.13%)	50 (31.25%)	109 (68.13%)	95 (59.38%)	30 (18.75%)	15 (9.38%)	–	–	00*
Student's ability to apply clinical problem solving processes to both familiar and unfamiliar patient complaints.	22 (13.75%)	34 (21.25%)	102 (63.75%)	109 (68.13%)	36 (22.50%)	17 (10.63%)	–	–	00*
Student's proficiency to implement or suggest appropriate care based on their patient assessment observations within the scope of practice in accordance with ASNSW protocol/pharmacology.	26 (16.25%)	40 (25%)	101 (63.13%)	106 (66.25%)	33 (20.63%)	14 (8.75%)	–	–	00*
Student's ability to convey necessary information, using IMISTAMBO format, to those health workers involved in the ongoing care of their patients.	32 (20%)	52 (32.50%)	94 (58.75%)	96 (60%)	34 (21.25%)	12 (7.50%)	–	–	00*
Student aptitude to applying standard precautions to prevent the spread of infection using PPE, and hand washing.	89 (55.63%)	109 (68.13%)	63 (39.38%)	51 (31.88%)	7 (4.38%)	–	1 (0.63%)	–	00*
The student's ability to perform pre-shift ambulance vehicle roadworthiness check. Ensure that vehicle is properly equipped and supplied after each case. Ensure vehicle is maintained in a clean, aseptic manner.	85 (53.13%)	108 (67.50%)	71 (44.38%)	50 (31.25%)	4 (2.50%)	1 (0.63%)	–	1 (0.63%)	00*
The student's proficiency to communicate clear and direct instructions.	49 (30.63%)	78 (48.75%)	100 (62.50%)	77 (48.13%)	11 (6.88%)	5 (3.13%)	–	–	00*
The student's ability to introduce themselves and ask questions and clarify information from patients.	70 (43.75%)	92 (57.50%)	72 (45%)	64 (40%)	18 (11.25%)	4 (2.50%)	–	–	00*
Establish a rapport with patient by displaying an open, sensitive and confident manner.	84 (52.50%)	110 (68.75%)	65 (40.63%)	49 (30.63%)	11 (6.88%)	1 (0.63%)	–	–	00*
Student's capacity to function as a team member	104 (65%)	125 (78.13%)	51 (31.88%)	33 (20.63%)	5 (3.13%)	1 (0.63%)	–	1 (0.63%)	00*

*p<.05

sufficient orientation to the workplace. Students were less satisfied with communication about rostering, with 9.52% disagreeing and 4.76% strongly disagreeing that this was adequate. Approximately 50% of students were satisfied with the placement, with 9.52% being very satisfied and 19.05% being extremely satisfied.

Qualitative results

Student competency

Appropriate behaviour and professional socialisation

Students who demonstrated appropriate behaviour and professional socialisation to clinical staff helped create a positive atmosphere and harmony within the workplace.

Table 2. Students' Perceptions of Clinical Placement

ITEM	STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE DISAGREE	STRONGLY	N/A
I received appropriate direction when I first arrived to undertake the clinical placement.	9 (42.86%)	11 (52.38%)	1 (4.76%)	–	–	–
My orientation to the workplace was sufficient.	9 (42.86%)	12 (57.14%)	–	–	–	–
Communication regarding the roster I was required to work during the placement was adequate.	8 (38.10%)	7 (33.33%)	3 (14.29%)	2 (9.52%)	1 (4.76%)	–
The majority of the clinical staff and other colleagues I worked with during the placement made me feel welcome.	15 (71.43%)	6 (28.57%)	–	–	–	–
The majority of the clinical staff and other colleagues I worked with during the placement were both approachable and supportive.	15 (71.43%)	6 (28.57%)	–	–	–	–
The majority of the clinical staff and other colleagues I worked with were good paramedic role models	11 (52.38%)	10 (47.62%)	–	–	–	–
My clinical preceptor had the experience necessary to supervise my placement opportunity.	15 (71.43%)	5 (23.81%)	1 (4.76%)	–	–	–
My clinical preceptor had the skill necessary to supervise my placement opportunity.	14 (66.67%)	6 (28.57%)	1 (4.76%)	–	–	–
My clinical preceptor encouraged me to ask questions.	15 (71.43%)	4 (19.05%)	1 (4.76%) 1	1 (4.76%)	–	–
My clinical preceptor or other colleagues helped me to identify and engage in appropriate learning experiences.	13 (61.90%)	6 (28.57%)	2 (9.52%)	–	–	–
I was able to apply what I learnt at university on clinical placement.	8 (38.10%)	12 (57.14%)	1 (4.76%)	–	–	–
Verbal feedback received while I was on placement gave me a good idea on how I was progressing.	11 (52.38%)	6 (28.57%)	3 (14.29%)	1 (4.76%)	–	–
Written feedback from the preceptor received during the placement gave me a good idea on how was progressing.	7 (33.33%)	10 (47.62%)	–	3 (9.52%)	–	2 (9.52%)
I would like to return to this workplace again to complete more clinical training.	12 (57.14%)	4 (19.05%)	3 (14.29%)	2 (9.52%)	–	–
Total Student Perception of clinical placement						
To some extent satisfied	1st quartile	5	23.18%			
Satisfied	2nd quartile	10	47.62%			
Very satisfied	3rd quartile	2	9.52%			
Extremely satisfied	4th quartile	4	19.05%			

Therefore, preceptors were willing to teach clinical skills and answer students' questions when they required clarification.

Preceptor A: Student A is a very happy person and easy to get along with. She engages with staff and patients well. She follows instruction well and is learning quickly. A pleasure to be mentoring. The areas that need improvement are getting better as she gains experience. She is doing well for the time she has spent on road.

Preceptor D: Student D is a polite and courteous student who works well in a team environment. He actively seeks clarification on anything he may not understand. He demonstrates a willingness to learn. He gives a concise and accurate patient handover to other medical staff.

Competency in clinical skills and keen to learn

Paramedic students showed a high level of clinical knowledge and understood how to integrate theoretical knowledge into practice. They were actively involved in assessment and treatment of patients, and were keen to learn in different environments.

Preceptor B: Student B has shown an above average ability to apply clinical knowledge to on road experiences. He is mature for his age and this is apparent when dealing with patients. I believe his life experiences prior to University with safety have placed him well for paramedicine. He is patient, displays empathy, and is keen and quick at adapting to ever-changing environments…

Preceptor C: Within the first two weeks of student C's placement he has immediately applied himself to all tasks asked of him. He has been punctual for every shift and… He has been well presented and courteous to all staff members and allied health professionals. He is extremely keen to actively participate in the assessment and treatment of all patients, regardless of the patient complaint, and he seeks guidance when required…

Required improvements

Lack of self-confidence

Preceptors identified areas where students needed to make improvement. These included development of greater self-confidence and assertive communication skills to enable them to manage challenging situations.

Preceptor B: Student B needs to be more forward/ confident in talking with patients to ensure he has an accurate history of the events leading up to pt/paramedic meeting-I know this will be well addressed in the near future. With more on-road time, I believe he will be a solid clinician and will make a very good paramedic, welcomed on any station within ASNSW.

Preceptor G: On the flip side of above, she will need to learn to be assertive in difficult and confronting situations.

Communication difficulties

Students were sometimes nervous when asking for patient information or investigating the circumstances surrounding a call-out. This was apparent from their low-pitched voices when participating in patient assessments. Paramedics are the first healthcare personnel on the scene in emergencies, so clear communication and assertive behaviour is essential for them to gather crucial information from patients and eyewitnesses before giving treatment.

Preceptor A: Student A can be shy at times when dealing with patients and families and just needs to find some more confidence and initiative to fulfil some of these requirements. Student does need to be asked if she would like to train in anything or if she has any questions regarding jobs. She could be a bit more forward in wanting to participate in practical training sessions.

Preceptor D: Encouraging student D to be more assertive and direct when trying to obtain a patient history. I have explained to him that he needs to increase the volume of his voice when talking to patients as they have difficulty hearing him.

Limited case scenarios

Students placed in regional areas with limited case scenarios missed the learning opportunities that arise when dealing with a diverse range of cases. Nevertheless, when exposed to a trauma scene, students showed competency for managing situations, including leadership and suggested treatment pathways.

Preceptor E: The only areas of improvement I can see for student are to be exposed to real life scenarios to give her experience and a greater depth of knowledge.

Preceptor F: Unfortunately to this point we have had limited exposure to some skills such as trauma requiring IMISTAMBO and scene reports. There have also been limited opportunities to cannulate and set up fluids. On the occasions that this has occurred she has performed these tasks with little problem…. She has shown constant improvement in her confidence and I am sure by the end of the 4 weeks together her ability to show leadership and control scenes will have reached the level expected of her.

Students' feedback

Effectiveness of preceptors

Students appreciated preceptors who allowed them to have a range of clinical experiences and use their knowledge on

real patients. Students also enjoyed working with preceptors who were easy to relate to and who helped them to keep calm.

> *Student K:* That my preceptor was so approachable and an excellent teacher. Let me get involved in everything and I would highly suggest him to have another student. I also found very valuable that not every call is an emergency and every job is different.

> *Student M:* My preceptors were very easy to work with and they were more than happy to let me use my skills and training on patients. If I had any questions or concerns my preceptors were very approachable and gave vital feedback.

Exposure to real-life experiences and improvement in clinical skills

Students gained greater understanding of how to perform ambulance tasks and work effectively with patients and other healthcare professionals when they were exposed to reallife situations. These enabled them to apply the knowledge acquired at university to practical scenarios.

Student I: I feel that my hand-overs to triage nurses and doctors improved a lot over the 3 weeks and by the third week I was presenting all hand-overs.

> *Student J:* Getting real practical experience!!! My preceptor was very knowledgeable and able to explain the pathophysiology of everything! Learning how ambos work together and where everything is placed in the ambulance was great! Also, skills for questioning difficult patients! And just treating actual people!

Shortage of case experiences

Students were not pleased when their placement venues offered only a limited range of learning experiences in real-life ambulance settings. They believed this restricted their learning experiences and opportunities to put theoretical knowledge into practice in prehospital situations. They felt bored and untested when dealing only with non-emergency calls and light case loads.

> *Student L:* Placement in rural areas didn't provide me with the load or work or experience I was hoping to see.

> *Student I:* Because the area I was in wasn't very busy I feel like I didn't really receive anything too exciting nor challenging. The one call out that I found exciting because I'd learnt so much about it, I was put in the front seat and didn't really even get talked through it.

Discussion

In the study, paramedic students showed satisfactory to exemplary levels of competencies in their clinical skills, and preceptor evaluations of student abilities increased between the first and second assessments for all items. A similar picture was seen in the qualitative data, with preceptors reporting that students were skilled at putting their theoretical knowledge into practice and that they displayed appropriate behaviour and professional socialisation when working with staff and patients. Preceptors were willing to teach students and allow them to undertake clinical experiences in real-life scenarios especially where there were good working relationships between themselves and students. These findings differed from those in a qualitative study by O'Meara and colleagues, who found that preceptors from vocational backgrounds tended to limit students to observation only rather than allowing them hands-on clinical practices, while preceptors who were university-educated paramedics adopted the opposite view. [13] Several studies have pointed out that building a healthy relationship is the key in achieving satisfactory learning experiences in clinical placements. Through this, preceptors can encourage students' exposure to clinical skills, improve their self-confidence and enhance their critical thinking. [16-18] A paramedic clinical placement study in Victoria demonstrated that paramedic students expressed concern about their experiences on clinical placements. The findings showed nearly 60% of students had negative experiences with preceptors, such as 'being ignored' and 'know nothing but not offered any opportunities to practice skills'. [12] A mutual relationship in the preceptorship whereby staff accept students as team members, take care of them, show empathy and act as good role models is the most effective strategy to achieve student learning in clinical practice. [16] In this study, findings from the qualitative data clearly show the benefits for students who experienced a sense of security through building good personal relationships with the preceptor and other staff.

These students showed an increasing trust in their own abilities as they participated in challenging activities, they were not afraid to ask questions and started to work independently.

The findings also demonstrated that students' competencies increased significantly across most skill categories in the final weeks of placement. Consistent, long-term exposure to reallife scenarios helped to boost students' self-confidence, allowing them to take the initiative to perform complicated tasks. Conversely, short periods of placement

limited students' learning opportunities to practise clinical skills while creating difficulties for ambulance settings in organising shifts and seeking mentors. [13] Students who experienced different emergency scenarios and who were able to stay longer on scene gained more experience of clinical procedures and reported high satisfaction levels. Similarly, McCall et al (2009) indicated that students' learning experiences depended on the caseload in the services where they undertook placement. Students gained a wider range of experiences when undertaking placement in metropolitan areas rather than with rural ambulance services. [19] The development of professional competency in pre-hospital settings usually depends upon exposure to a diversity of caseload scenarios and the use of effective clinical decision-making skills acquired during clinical placements. Clinical placements that function well are influential in enhancing learning and generating professional identity for paramedic students. The study showed that the students' level of knowledge before placement was sufficient for them to manage the reallife scenarios they encountered. However, they needed to develop more self-confidence and assertive communication skills so they could adapt quickly to new environments and reduce possible dissatisfaction between students and supervisors. Sustained cooperation between universities and ambulance services is essential to provide a good learning atmosphere for students and reduce frustration among clinical staff.

Limitations of the study

The use of existing data in this retrospective study potentially created bias because it was not possible to confirm or reassess information, while some crucial variables were missing and there were issues with data quality and generalisability. A strength of the study is that it reports new findings about the development of mutual relationships between preceptors and paramedic students and the value of increasing the length of clinical placement periods, both of which could lead to improved quality of clinical placements. These findings have not been identified previously, nor have there been studies conducted in New South Wales, Australia.

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Competing Interests

The authors declare that they have no competing interests.

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Healthcare Workforce in Indonesia

Suryanto, M Boyle and V Plummer

Abstract

Introduction: Imbalanced distribution of healthcare providers between urban and rural areas is one of the difficulties facing health service provision in Indonesia. Several regulations have been made by the government to solve the problem. The objective of this paper is to describe the provision of human resources for healthcare services in Indonesia.

Methodology: A review of medical related electronic databases, CINAHL and Ovid MEDLINE, was undertaken from their commencement date until the end of January 2017. The grey literature from the Indonesian government, the World Health Organisation and the World Bank websites was also searched.

Results: There were 92 articles identified from the CINAHL and 222 articles from the Ovid MEDLINE databases. Five articles were included from the two databases and five documents from grey literature with ten articles to be reviewed.

Discussion: Nurses and midwives account for the largest proportion of healthcare providers in Indonesia. The ratio of healthcare providers in Indonesia is lower than the average of South-East Asian and other lower-middle income countries. More than half of the healthcare providers in Indonesia provide care in community health centres. Several regulations have been proclaimed to improve the imbalanced proportion of healthcare providers across the country.

Conclusion: Indonesia continues to develop strategies towards successful distribution of healthcare providers across the country. A study investigating the impact of the programs reducing the imbalanced distribution of healthcare providers on health outcomes is essential for Indonesia.

Key words: healthcare providers; health workforce; human resources; developing country; Indonesia.

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Introduction

Similar to other lower-middle income countries such as India and Pakistan, there is inequality in numbers and distribution of healthcare providers in Indonesia. [1] This inequality is due to the wide geographic distribution of its various health facilities and the health status of the community throughout the country. [2] With more than 255 million people living in Indonesia, [3] most doctors serve in urban areas and yet only 20% provide services in rural areas, where 70% of Indonesians live. [1] In the late 1960s, in order to minimise the imbalanced distribution between urban and rural areas, there was a government regulation of a deployment policy for all medical school graduates including doctors, midwives, and nurses to become civil servants. As a result it was compulsory to serve at least two years in a remote area, or three years in a rural area, or five years in more urbanised areas. [4] However, due to the fiscal crisis, those policies were discontinued and changed into the Pegawai Tidak Tetap

(PTT) program, or contract staff. It was compulsory for newly graduated doctors to be contracted staff and to provide healthcare in remote areas. [4] However, due to dissatisfaction among medical graduates, which was mainly because only 40% of them were recruited as civil servants, the PTT program was terminated in 2007, [4] but then was reintroduced with a new scheme, which has been in place until the recent years.

The imbalanced proportion of healthcare providers remained until the implementation of Indonesia's health policy, "Healthy Indonesia 2010", which had a positive influence in improving the healthcare provider distribution in Indonesia, especially in remote and rural areas. [4] This health policy increased the community's interest in pursuing a healthcare profession as a career. In 2008, there were about 10,000 midwives and 34,000 nurses graduating every year from 465 and 682 midwifery and nursing schools respectively; whereas, the medical school received 80,000 applications for new students, which only had a 4,700 capacity. [4] This demand was associated with an increasing number of private institutions which was greater compared to state institutions, with most doctors graduating from private education institutions. However, the graduates were mostly considered less-qualified due to lack of government oversight of the private institutions' education process. [4]

The decentralisation implemented by the Indonesian government influenced the distribution of healthcare in the country. Decentralisation allows for a more efficient recruitment system of healthcare providers for rural areas because the recruitment can be based on local needs and priorities. [4] This article describes the provision of human resources for healthcare services in Indonesia focusing on the distribution public and private health workers.

Methodology

Design
A review of medical related electronic databases, Indonesian Government websites and international organisation publications to examine healthcare providers in Indonesia was undertaken.

Process
A search was undertaken using two electronic databases, CINAHL and Ovid MEDLINE from their commencement date until end of January 2017. The search strategy used the following keywords: "healthcare providers", "health workforce", "human resources", and "Indonesia". The search used the keywords individually and in combination. The Indonesian government, the World Health Organisation (WHO), and the World Bank websites were also searched for information about Indonesian healthcare providers. Articles or documents were included if they reported on the human resources associated with the provision of health services in Indonesia including the quantity, the distribution, and the implementation to overcome the distribution problems. Articles were excluded if they were in languages other than English or Bahasa Indonesia and letters to the editor.

Results
There were 92 articles identified from the CINAHL and 222 articles from the Ovid MEDLINE search. Based on the title and abstract, there were 10 articles from the CINAHL and nine articles from Ovid MEDLINE, total of 19 articles that met the inclusion criteria. There were six duplicated articles leaving 13 articles to be further reviewed. Following further review, eight articles were excluded, as they did not contain relevant information about the healthcare resources in Indonesia, leaving five articles for inclusion in the review. There were five documents identified which met the inclusion criteria from the search of the Indonesian government, the WHO, and the World Bank websites. In total, there were ten articles reviewed for this paper (Figure 1 and Table 1).

Discussion

The number of healthcare providers
Despite the inequitable distribution of the health workforce in Indonesia, data from the Indonesian Ministry of Health shows that in 2015 there were 876,984 healthcare providers working in public and private sectors in Indonesia with nurses the majority, 233,910 (34.6%). [3] Healthcare providers in Central Java (76,819), East Java (69,405), and West Java (66,152) provinces accounted for the highest number compared to other provinces. The number of specialist doctors was higher than general physicians; this is because general physicians working independently or in management are not counted in the medical service sector. [3] The details of the healthcare providers can be seen in Table 2.

Compared to other South East Asian countries such as Thailand, a report from the WHO shows that the number of healthcare providers in Indonesia has been higher than in Thailand for both 2009 and 2010. The report shows that in Indonesia there were 34,544 and 33,736 medical practitioners in 2009 and 2010 respectively, [5] while there were 21,569 and 26,244 medical practitioners in Thailand for

Figure 1. Articles and documents retrieved from databases and websites

| CINAHL | Ovid MEDLINE | Indonesian government websites | WHO website | World Bank website |

Searching using keywords

92 articles

222 articles

Matching based on title and abstract

10 articles

9 articles

19 articles

Matching for duplication

6 articles were duplicated leaving 13 for further review

Matching based on inclusion and exclusion criteria

5 articles matched the criteria

2 documents matched the criteria

2 documents matched the criteria

1 document matched the criteria

5 articles matched the criteria

the same period. [6] However, Thailand had a higher medical practitioner to population ratio compared to Indonesia. The report shows that the ratio of medical practitioners to population in Indonesia was 0.15 per 1,000 population in both 2009 and 2010, where it was 0.33 and 0.41 per 1,000 population in Thailand for 2009 and 2010 respectively. Similar trends also occurred for other healthcare professionals. [6]

A study by Kurniati et al [7] shows an increase in health workforce ratio (doctors, nurses and midwives) in Indonesia from 0.95 per 1,000 population in 2006 to 2.63 per 1,000 population in 2014. Despite this development, based on the 2016 World Health Statistics from the WHO, the ratio of skilled health professionals (physicians, nurses and midwives,

dentists, and pharmacists) to the population in Indonesia was lower compared to other South-East Asian countries such as Maldives, Thailand, India, Sri Lanka, and Myanmar but higher than Bhutan, Timor Leste and Bangladesh. [8] In 2006 to 2013, the average ratio of physicians was 2.0 per 10,000 population in Indonesia whereas the average in Southeast Asian countries was 5.9 per 10,000 population and the average among lower-middle income countries was 7.8 per 10,000 population. [9] The ratio of nurses and midwives has had a similar trend, 13.8 per 10,000 population in Indonesia, 15.3 per 10,000 in Southeast Asian countries and 17.8 per 10,000 among lower-middle income countries. [9] However, the nurses and midwives ratio in Indonesia was

Table 1. Articles and documents retrieved for review

AUTHOR(S)	TITLE	INFORMATION AVAILABLE IN THE ARTICLE
Meliala, Hort, & Trisnantoro, 2013	Addressing the unequal geographic distribution of specialist doctors in Indonesia: The role of the private sector and effectiveness of current regulations	- Numbers and distribution of specialist doctors - Identification of regulations - Source of income - Work practices
Kurniati, Rosskam, Afzal, Suryowinoto, & Mukti, 2015	Strengthening Indonesia's health workforce through partnerships	- Human resources for health planning through the multi-stakeholder coordination approach - Support to multi-sectorial human resources for health coordination - Multi-sectorial human resources for health coordination towards achieving Universal Health Coverage - Challenges of multi-sectorial coordination
Heywood & Harahap, 2009	Human resources for health at the district level in Indonesia: the smoke and mirrors of decentralization	- Density of health care providers - Employment status - Primary place of work for those in the public sector
Efendi, 2012	Health worker recruitment and deployment in remote areas of Indonesia	Policies to support the recruitment and deployment health workers in rural and remote areas
Diana, Hollingworth, & Marks, 2015	Effects of decentralization and health system reform on health workforce and quality-of-care in Indonesia, 1993-2007	- Type and distribution of the workforce - Quality of care in both public and private healthcare facilities - The impact of decentralization
Kementerian Kesehatan Republik Indonesia, 2013	Profil Kesehatan Indonesia 2012	- The quantity and ratio of health workers - PTT health workers - Special assignment health workers - Health worker registration
Kementerian Kesehatan Republik Indonesia, 2016	Profil Kesehatan Indonesia 2015	- The quantity of health workers - Ratio of health workers - Health workers registration - The efficiency of health workers
World Health Organisation, 2014	Human Resources for Health Country Profile: Indonesia	- Health workforce situation - Human resources for health production - Human resources for health utilization - Governance for human resources for health
World Health Organisation, 2014	World Health Statistics 2014	Density of health workforce
Rokx et al., 2010	New Insight into the Provision of Health Services in Indonesia: A Health Workforce Study	- Indonesia's health system and policies affecting the health workforce - The supply and distribution of health practitioners and health facilities - Effects of changes in the supply of health workers on the use of health services - The quality of public health facilities and practitioners - Discussion and policy suggestions

Table 2. Healthcare Providers in Indonesia

HEALTHCARE PROVIDERS	QUANTITY	RATIO*
Specialist doctors	47,849	18.7
General physicians	41,026	16.1
Specialist dentists	1,054	0.4
Dentists	11,686	4.6
Nurses	233,910	87.6
Midwives	111,736	51.6
Pharmacists	30,329	11.9

*per 100,000

higher compared to Timor Leste, Bangladesh and Myanmar, but lower compared to Sri Lanka and Thailand, which can be seen in Table 3.

Despite the differences between healthcare providers to population ratio, the number of medical-related schools (medical, nursing, and midwifery) in Indonesia was higher (1,199) than other Southeast Asian countries including Brunei (3), Singapore (5), Malaysia (120), Philippines (824), Vietnam (28), Laos (7), Cambodia (14) and Myanmar (47). [10] Thus, there are more medical-related students graduating in Indonesia, but, with a population of more than 255 million and a population growth rate of 1.49% per annum, Indonesia continues to face a crisis with adequate health workers. [7] However, Indonesia and the Philippines are the two countries exporting many doctors and nurses compared

to other Southeast Asian countries. [10] This situation may exacerbate the health worker crisis in Indonesia both in hospitals and *puskesmas*.

The *puskesmas* and hospital are the two major types of health facilities in Indonesia. The *puskesmas* is a community health centre, which is established at the sub-district level and organised by the district government. [11] There were 9,754 *puskesmas* and 2,488 hospitals in Indonesia in 2015 with 258,568 healthcare providers in the *puskesmas* and 493,856 healthcare providers in the hospitals. [3] The details of the distribution of the healthcare providers in the hospitals and *puskesmas* can be seen in Table 4.

As Table 4 demonstrates, the number of midwives and nurses were almost equal in the *puskesmas*. Both professions account for the largest number of healthcare professionals in the *puskesmas*. However, the number of nurses was highest among healthcare providers in hospitals in Indonesia and the number of midwives was one-fifth of the number of nurses. While the number of specialist doctors was not available for the puskesmas, these professionals accounted for the second largest number of healthcare providers in hospitals.

Distribution of healthcare providers in Indonesia

Based on a study by Meliala and colleagues, [1] the distribution of specialist doctors was unequal across Indonesia, with most specialists concentrated on Java and Bali Islands where most were situated in urban areas. Even though the data was collected at eight out of 33 provinces in Indonesia; Papua, North Sulawesi, West Nusa Tenggara,

Table 3. Comparison of Healthcare Provider Ratio between Indonesia and other Countries

CATEGORY	PHYSICIANS*	NURSES AND DENTIST*	PHARMACIST*	MIDWIVES*
Indonesia	2.0	13.8	1.0	1.0
Bangladesh	3.6	2.2	0.3	0.6
Myanmar	6.1	10	0.7	-
Sri Lanka	6.8	16.4	0.8	0.4
Thailand	3.9	20.8	2.6	1.3
Timor Leste	0.7	11.1	0.4	1.1
South-East Asian countries (average)	5.9	15.3	1.0	3.8
Lower-middle income countries (average)	7.8	17.8	1.2	4.2
Global (average)	14.1	29.2	2.7	4.3

*(per 10,000 population)

Yogyakarta, Central Java, DKI Jakarta, Bengkulu, and North Sumatera, the results could be considered representative of Indonesia as the samples were varied and from less-developed to developed provinces. The study showed that provinces of Java Island had higher health provider ratios compared to provinces in eastern Indonesia. [1] Similarly, unequal distribution of healthcare providers also occurred in Cambodia up to 2010, especially for medical doctors and midwives. [12] More than half the medical doctors (54%) worked in the capital city of Cambodia where only 9.3% of the population lives. [12]

The imbalanced distribution of the Indonesian healthcare workforce was not only for specialist doctors, but also for other healthcare providers such as nurses, midwives, nutritionists, and sanitarians. [13] Most of the health workers were not willing to serve in rural areas due to communication problems, inadequate basic and social facilities, decreased remuneration and no further reward, security issues due to living in a rural area, and career uncertainty. [13] However, the decentralisation implemented in Indonesia allowed local governments to manage their human resources including healthcare providers which tended to reduce the gap between urban and rural areas in Indonesia. [14] Furthermore, dual sector practice among specialist doctors is common in Indonesia with specialist doctors working in both public and private sectors, even though they are government employees. [1] The dual sector practice may increase access to health services, including in rural areas due to the availability of additional health professionals. [4] Several regulations had been implemented to manage dual sector practice among doctors including tighter contract arrangements, raising public sector salaries, and regulation within professional organisation. [1]

Cambodia also had a similar situation where staff shortages in rural areas arose due to inadequate salaries, lack of security, medical and drugs supplies, and inadequate government management. [12] This staff shortage in rural areas had several impacts on healthcare services in Cambodia. Due to the belief that the government had a low quality health service, people in Cambodia tend to go to private health facilities when seeking help. [12] Almost half of the people (48.2%) sought treatment from the private sector, 21.6% from the public sector and 20.8% from the non-medical sector. [15] This included the high use of informal health services where some of the personnel were untrained, such as traditional healers. [12] However, the health worker shortage is also one of the problems faced by a more developed country like Singapore. Even though the average of nurse to patient ratio in Singapore was better (1:200) [16] than Cambodia (1:4,875), [12] there was an imbalance between graduate nurses and the demand for nurses in Singapore; therefore, Singapore recruited nurses from other countries such as China, England, India, Malaysia, Myanmar and Philippines. [16]

There have been several programs implemented by the Ministry of Health of Indonesia in order to minimise the imbalanced distribution including compulsory service regulation, the PTT program, and special assignment for strategic health workers including nurses, sanitarians and nutritionists, [13] as well as providing additional incentives for healthcare providers who are willing to serve in rural areas. [1] The additional incentives were provided by the Ministry of Health (central government) or from local government where healthcare providers are given an allowance from the Ministry of Health of up to USD$750 per month for specialist doctors and USD$500 per month for general practitioners.

Table 3. Healthcare Providers in Puskesmas and Hospitals in Indonesia

CATEGORY	PUSKESMAS		HOSPITALS	
	QUANTITY	RATIO*	QUANTITY	RATIO**
Midwives	79,314	8.1	30,561	12.3
Nurses	73,311	7.5	147,264	59.2
General Physicians	16,656	1.7	23,130	9.3
Dentists	6,537	0.7	4,831	1.9
Specialist doctors	N/A	N/A	47,605	19.1

*(per *puskesmas*) **(per hospital)

The additional incentives from local government are varied and range between USD$500 to USD$2,500 per month. [1] In comparison, in Thailand, an incentive program was given to the doctors serving in rural areas along with an annual award from a renowned organisation or foundation for healthcare providers working in rural areas to reinforce their commitment. [17] Additionally, personal career advancement has been in place since 2007 for those working in rural areas where they can be promoted to achieve level 9 in their professional career position, which previously was only up to a level 8. [17] Level 11 is the highest-ranking position in the professional career in Thailand with a level 9 position equivalent to a deputy director general. [17]

The compulsory deployment service in Indonesia was instigated from 1961 to 2003. During this time all graduates, including health institution graduates, had to serve at least five years after completing their study with the timing and location dictated by the Ministry of Health. [13] However, this regulation ceased in 2003 and all graduates have the same right to choose their job without any discrimination. [18] As a result, a disproportionate number of healthcare providers elect to serve in urban areas compared to rural areas. [13] Thailand had a similar program of mandatory service in rural areas for new medical and nursing graduates, which has been in place since 1974 where it is compulsory for new graduates to work in rural areas for three years. [17]

The PTT or hiring contracted staff was another effort of the government to minimise the unequal distribution of the health work force in Indonesia. This program was launched in 1991, based on the President Decree No. 37 of 1991, which states that doctors, dentists, and midwives have an obligation to work as contract staff for a minimum of three months and up to three years after graduation. [13] Since the contracted staff can choose the area where they want to serve, in 2006 the Ministry of Health determined that contracted staff would work at remote or very remote areas for minimum of six months and up to two years. [13] Starting from 2007, the mandatory program of PTT was changed to a voluntary program, however, the PTT program was still favored by healthcare graduates. [13] By the end of 2012, there were 45,777 PTT staff across Indonesia [19] and these numbers remained the same in 2015, 44,449 PTT staff consisting of 29 specialist doctors, 1,659 general practitioners, 803 dentists, and 41,958 midwives. [3]

Another program implemented by the Ministry of Health to reduce the distribution gap in healthcare providers' locations in Indonesia is the special assignment. This program was started in 2009 with the objective of increasing access and quality of health services in disadvantaged areas, border areas and small islands, areas with health difficulties, and small hospitals. [19] The number of healthcare providers who participated in the program during 2012 was 658 general practitioner residents, 1,009 nurses, 228 dieticians, 196 sanitarians, 114 health analysts, 17 midwives, 52 pharmacists, 21 dental nurses and one psychiatrist, radiologist, and medical recorder. [19] The Indonesian Ministry of Health implemented a team-based special assignment in May 2015, called *Nusantara Sehat* program, where healthcare providers were dispatched to targeted areas. [3]

As part of the government program to increase the health status of all Indonesians, a program called *Jaminan Kesehatan Nasional* (JKN) was implemented with the launch of the universal health insurance, the *Badan Penyelenggara Jaminan Sosial* (BPJS) in January 2014. [20] The BPJS aimed to ensure health maintenance and protection for all Indonesians. However, the implementation of the BPJS was not linked to the distribution of health workers. Almost four years after the implementation, the distribution of health workers remains concentrated on Java Island. [21] Indonesians who have been unable to access health facilities or health workers within their areas have been offered compensation by BPJS through fund reimbursement, deploying healthcare providers, or providing a special health facility. [22]

Thailand implemented the Collaborative Project to Increase the Production of Rural Doctors (CPIRD) and the One District, One Doctor (ODOD) program. [17] The CPRID is the recruitment of twelfth-grade students passing the examination to pursue a medical degree and who are required to reside within a given province after graduation. Graduates from the ODOD are also required to be resident in a given district. The CPRID was in place from 1995 to 2015 while the ODOD was in place from 2005 to 2015. [17] There was a three year mandatory time to serve in a district hospital for CPRID and a twelve year compulsory time to serve in their home town for the ODOD; otherwise, there was a USD$13,000 penalty for CPRID and USD$65,000 for ODOD if they failed to meet the terms. [17] Both programs were successful in providing medical doctors in rural areas of Thailand. This is because 92% of 5,926 doctors involved in the CPIRD and ODOD program remained working in the assigned areas. [23] In addition, both programs had positive impact on the graduates as more than 95% of graduates

involved in the programs passed the comprehensive and the national license examination and they had better clinical competencies than graduates with a normal track. [23]

Imbalanced distribution of health workers is an international issue. The WHO has issued a global strategy on human resources for health to ensure the equitable access to health workers within strengthened health systems. [24] One of the objectives of the global strategy is to align investment in human resources for health to address shortages and improve distribution of health workers. For Indonesia, as the fourth largest country by population in the world, regulation to manage workforce maldistribution may be more appropriate. Graduates of health professions may be in over-supply on Java Island, but not in other rural areas of Indonesia. For example, there were 22,263 graduate nurses in 2014 but only 13,528 (39%) had been employed. [25] East Java province has the highest numbers of nursing schools, 55 Diploma of Nursing and 53 Bachelor of Nursing schools, producing around 12,000 nurses every year, with only 10% employed. [26] On the other hand, the 2015 annual report of the Indonesian Ministry of Health shows that the ratio of nurses to population was 87.65 per 100,000 population which was below the target, 180 per 100,000 population. [3] This demonstrates a need for regulation of graduates' education so that all health professional graduates, mainly from Java Island, can be well distributed to all areas of Indonesia.

The WHO global strategy on human resources for health emphasises the strengthening of integrated aspects of health workers including planning, financing, education, regulation, and management. [24] The 2015 annual report of the Ministry of Health of Indonesia shows that the regulations in distributing health workers in Indonesia include PTT, special assignment, both residents and internship programs, and team-based assignment. [3] The report shows that during 2015, there were 44,449 health workers, mostly midwives, involved in the PTT program; 748 health workers engaged with resident special assignment; 8,312 health workers involved in the internship special assignment program; and 695 health providers for the *Nusantara Sehat* program. [3] The *Nusantara Sehat* program is still being implemented in 2017 by dispatching 1,422 health workers to the 28 provinces and 91 districts of targeted areas. [21] Evaluation and re-planning of the programs based on WHO global strategy on human resources is important to overcome the unequal distribution of human resources on health in Indonesia.

This study was potentially limited by a paucity of evidence covering health workers in Indonesia within the online medical related databases. Grey literature such as that found on Indonesian, WHO, and World Bank websites has been utilised to enhance the analysis of the paper.

Conclusion

Indonesia continues to develop strategies towards a successful distribution of healthcare providers. The ratio of healthcare providers to the population in Indonesia is lower compared to the average of South East Asian countries (the same as the average for dentists) and lower-middle income countries. Several programs have been established including a compulsory service for medical graduates to staff remote areas. The PTT program, contracted program, and special assignment are other programs designed to staff health facilities in rural and remotes area of Indonesia. A study investigating the impact of the programs reducing the imbalanced distribution of healthcare providers on health outcomes is essential for Indonesia. Also, an evaluation of the number and location of education institutions for health professions is needed which may also require a national regulation regarding the distribution of the graduates.

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Competing interests

The authors declare they have no competing interests.

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Beyond the Numbers: on the road to achieving public value in community support organisations

F Girkin, E Shannon, C Zimitat and K Elliot

Abstract

Objective: To explore public value as a management tool for measuring outcomes, in Community Support Organisations (CSOs) and determine if further research is warranted.

Design: A literature review on public value and outcome measurement in the community service sector was conducted to evaluate how public value best fits with CSOs.

Setting: Public value has not previously been applied to measuring outcomes in CSOs and could provide beneficial information to assist in obtaining government funding as fiscal resources decline.

Main outcome measures: The following question was considered; Can a public value framework be used as a management tool by CSOs to measure the value of their service? A flow chart applying a public value framework to outcome measurement of CSOs was developed.

Results: Key elements identified were indicators, measures and outcomes. Stakeholders included; government, community sector, CSOs and consumer.

A public value framework has the potential to be used for measuring outcomes in the community sector however realworld application is still required.

Conclusion: This study provided preliminary application for a larger study and has provided evidence of a public value framework having the potential to be applied as an outcome measurement tool for CSOs.

Abbreviations: CSO – Community Support Organisation

Key words: public value; community service; third sector; outcome measurement; community sector; outcomes; value.

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Introduction

Governments are responsible for producing public value through the services they provide and financially resource, such as non-government Community Service Organisations (CSOs) who generate value and social impact. [1] When public sector (government) services are outsourced to the private sector (non-government), government has not only outsourced the service but the delivery of public value. Public value can be defined as the value provided to society through the delivery of services [2] and can be generated by both private and public service delivery. [3] An understanding of public value, the common good for all citizens, [2] could assist CSOs by providing information on how services deliver value through service outcomes. This article examines literature on public value and outcome measurement to evaluate the viability of a Public Value Framework as a management tool for CSOs to better understand the value of delivered services.

Mark Moore [4] first applied public value to public sector management to assist in creating value and trust within government by placing greater consideration on creatively and filling service gaps within current resources. CSOs funded by the government, are in a better position to deliver public value with more choice and flexible in meeting consumer needs and less constrained by political climates and broader citizen responsibilities. [5]

The key to measuring outcomes is understanding what and how, to measure what is being achieved. For example, if you wish to understand 'value for money' consider the financial investment compared to the client outcomes. If you wish to understand a services value from a client's prospective you would gather client feedback. Value can be measured from multiple perspectives, which Porter [6] highlighted as the most effective way to measure success. Outcomes can be evaluated at each level of service engagement and public value can be achieved by a combination of input from government, nongovernment and consumers.

Identifying key stakeholders and mapping outcomes are important components of understanding service value. [7] It is also important to clarify and define what you are hoping to measure and what would indicate the public value outcomes you have identified. [8] These indicators can then be used as a platform for understanding what to measure once the outcomes are defined. Outcomes occur as a result of services delivered and are essentially what can be achieved. [9] CSOs seek to provide services which improve emotional well-being and quality of life, such as; family violence services, neighbourhood houses, and family support.

Method

Literature was searched using related key words including; value, outcome measures and public value. Secondary words searched within key terms included healthcare, community organisations, outcome measures, well-being and value-based healthcare. These were searched in the following search agents; Informit, ProQuest, University of Tasmania library metasearch and Google. The literature was used to identify key elements for establishing a Public Value Framework.

Results

A comparison between public and private was articulated in Table 1 below as these terms are significant components of the framework and a comparison between how public and private service delivery contributes to public value.

In evaluating the literature, the following four elements were identified as required when establishing public value:

i.   **Indicators** – Factors that demonstrate public value: economic value, client satisfaction, importance and benefit, quality and effectiveness and community functioning.

ii. **Measures** – Measurement questions used to evaluate public value at four levels of inquiry: government – Did the service funding provide value for money? Community Sector – Are we making a difference? CSO - Did we deliver an ethical service with integrity? Consumer – Did the service I received improve my well-being?

iii. **Outcomes** – Achievements as a direct result of the service delivery.

iv. **Trust** – A key component which must be present for public value to be accomplished.

Table 1: Public and private difference and contributions to public value

	PUBLIC (GOVERNMENT)	PRIVATE (NON-GOVERNMENT)
FUNDING	Tax payer funded	Government funded
INFLUENCE	Political	Organisation
CONSTRAINTS	Public opinion and lack of funds	Funding requirements and political priorities
FLEXIBILITY	Limited by political constraints	Adaptable to service & individual needs
PUBLIC VALUE PROVIDED VIA	Essential government services	Government funded services

Discussion

The results provided insight into the key components of a Public Value Framework, however to understand how these components work together a flowchart of how the community services sector interacts was drafted (Figure 1) to inform the public value creation flowchart (Figure 2).

Figure 1: Community sector system: demonstration of how government and the community sector engage to provide support programs
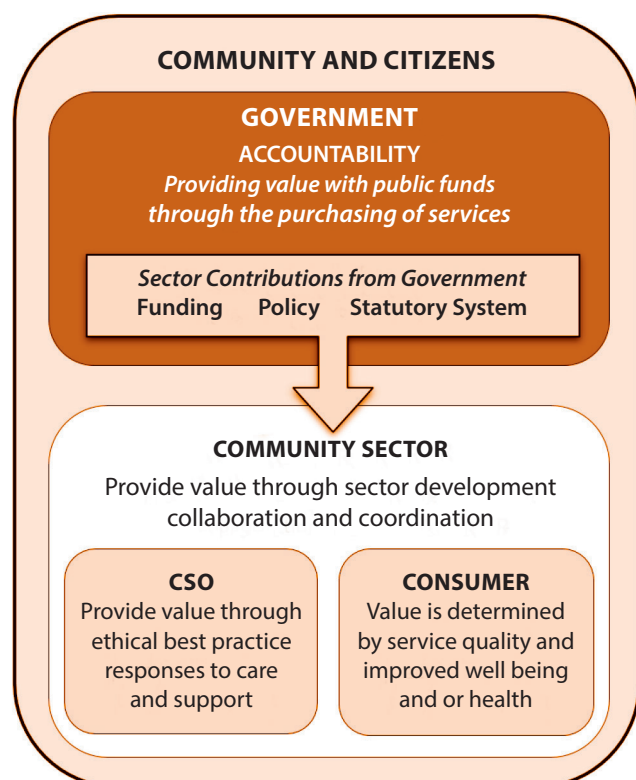

Figure 1 demonstrates the interactions between the key stakeholders and is considered in the context of how these would be applied to a small family violence service funded by the government to provide counselling to victims and survivors of violence. The government funder looking at value for money would need to compare the service with comparative family violence services of similar size, programs and funding type. The community sector level provides a more difficult challenge given that measuring a change in community functioning is often difficult and therefore this may include looking at community data that measures levels of family violence and whether this has been reduced. However, more work needs to be done to connect this back to the service and may involve looking at a variety of supports and community attitudes which may have contributed to the individual's outcome. The quality of the service delivered could be measured by looking at

complaints and compliments, surveying or interviewing referring services as well as consumers. Consumers could also be interviewed about their experiences, which would provide data from a service user prospective.

A public value framework could be a useful tool for measuring the value of CSOs and the development of a flowchart (Figure 2) to show the path to public value was beneficial in providing a picture of how service outcomes can be mapped further than individual outcomes. There would be benefit in furthering the flowchart to show exactly how public value is provided at a community level (i.e. reduced family violence). Moreover, feedback can provide service and individual level improvement data whereas public value is the next step. So, the question that must be asked is; what is the flow on effect of the service provided? How is this then related back to public value? For example: an individual attends a family violence counselling service and the individual is satisfied with the service they received. When we look at public value we want to know what happened as a result of the service received beyond the individual. For example, the person had better health outcomes, improved family functioning and improved employability. Figure II highlights how outcomes lead to public value however another layer to this figure that lists outcomes beyond the service, as highlighted in the example (i.e. improved family functioning), would better capture the public value impact.

Strengths

A public value approach to the impact of CSOs could provide vital data for funding bodies to see the benefits their resources provide that may not have necessarily have been evident when looking at a service in isolation. The application of a public value framework to outcome measurement in the Community Sector provides a new level of understanding of the benefits, or lack thereof, that these services can provide to citizens. Moreover, given the many factors which contribute to an individual's well-being, this innovative approach could provide new information to assist in resource allocation by government decision makers.

Weaknesses

The flowchart (Figure 2) provides an overview of the process of collecting positive outcomes, nevertheless it appears to be lacking the element of identifying public value after outcomes are determined. This would include the use of external data such as demographic, health data and theories which identify the gaps and poor outcomes if a service was not in place. This process would mean combining CSOs data with much broader social data that could be open to interpretation by the CSO to improve their outcome results.

Figure 2: Public Value Framework: Creating public value through CSOs
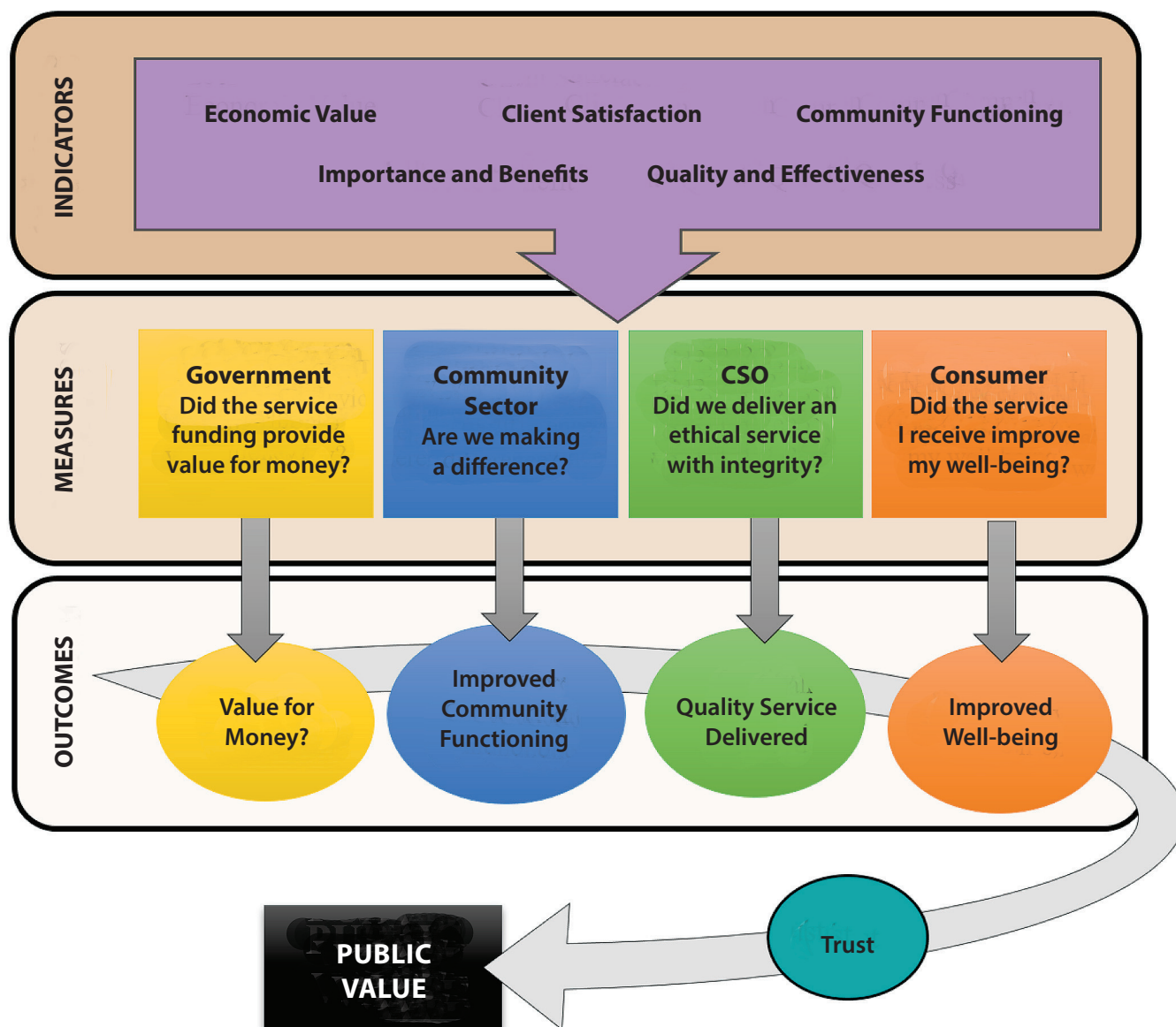
Hence if this approach was applied, the use of a subjective third party with no conflict of interest in the funding or the service may be useful to maintain transparency.

Conclusion

A public value framework has the potential to be used as a tool for measuring CSO outcomes and undertaking a larger study to test this approach against real CSO case studies would be beneficial. This project has highlighted that understanding the public value impact of CSOs could be a useful way to better understand the true impact government funded services provide to the community. This understanding could assist in how financial resources are directed toward improving community well-being where the most value is created. *'We live in a world where*

accountability has become an institution and where what gets measured gets valued ....' [10] and this has become especially true for the Community Sector. Therefore, understanding the true value provided by a service to the community, can ensure citizens receive the quality support they need.

Competing interests

The authors declare they have no competing interests.

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BOOK RECOMMENDED

Health Systems Improvement Across the Globe: Success Stories from 60 Countries
Braithwaite J, Mannion R, Matsuyama Y, Shekelle P, Whittaker S, Al-Adawi S, editors
Abingdon: Taylor & Francis; 2017.
ISBN: 9781472482044

This book encompasses a global perspective on healthcare while shifting the focus from reform to showcasing success stories of healthcare systems worldwide. It provides explanations of why various facets of healthcare systems work well in different contexts and offers the reader alternative models for consideration. The book features contributions from 60 countries, going much further than the common practice of focusing on affluent Western nations, to provide a comprehensive exploration of the success of healthcare systems globally.

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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.

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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.

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

About the Australasian College of Health Service Management

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

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

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