

# A review of the Australian healthcare system: A policy perspective

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## Abstract

This article seeks to review the Australian healthcare system and compare it to similar systems in other countries to highlight the main issues and problems. A literature search for articles relating to the Australian and other developed countries' healthcare systems was conducted by using Google and the library of Victoria University, Melbourne. Data from the websites of the Commonwealth of Australia, the Australian Institute of Health and Welfare, the Australian Productivity Commission, the Organisation for Economic Co-operation and Development and the World Bank have also been used. Although care within the Australian healthcare system is among the best in the world, there is a need to change the paradigm currently being used to measure the outcomes and allocate resources. The Australian healthcare system is potentially dealing with two main problems: (a) resource allocation, and (b) performance and patient outcomes improvements. An interdisciplinary research approach in the areas of performance measurement, quality and patient outcomes improvement could be adopted to discover new insights, by using the policy implementation error/efficiency and bureaucratic capacity. Hospital managers, executives and healthcare management practitioners could use an interdisciplinary approach to design new performance measurement models, in which financial performance, quality, healthcare and patient outcomes are blended in, for resource allocation and performance improvement. This article recommends that public policy implementation error and the bureaucratic capacity models be applied to healthcare to optimise the outcomes for the healthcare system in Australia. In addition, it highlights the need for evaluation of the current reimbursement method, freedom of choice to patients and a regular scrutiny of the appropriateness of care.

## Keywords

Australian public hospitals, patient outcomes, quality improvement, public hospital performance, public hospitals, bureaucratic capacity, policy implementation error

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## Introduction

The Australian healthcare system is recognised as one of the best in the Organisation for Economic Co-operation and Development (OECD); however, it has come under intense pressure due to changes in healthcare needs, such as the increase in demand and healthcare costs, inequities, complex health conditions and a push to improve the outcomes. The Australian healthcare system not only faces inefficiencies and workforce shortages, there is an expectation of greater public reporting of the availability of needed services, as well as clinical indicators and patient-reported outcomes, to ensure informed decision-making by patients and their carers.<sup>1</sup> In addition, the healthcare sector in Australia should be

prepared to deal with the changing needs of patients and technological advancements. Policymakers are advised to address care coordination, patients' needs, patients' engagement in healthcare delivery and the redesign of funding mechanisms.<sup>2</sup>

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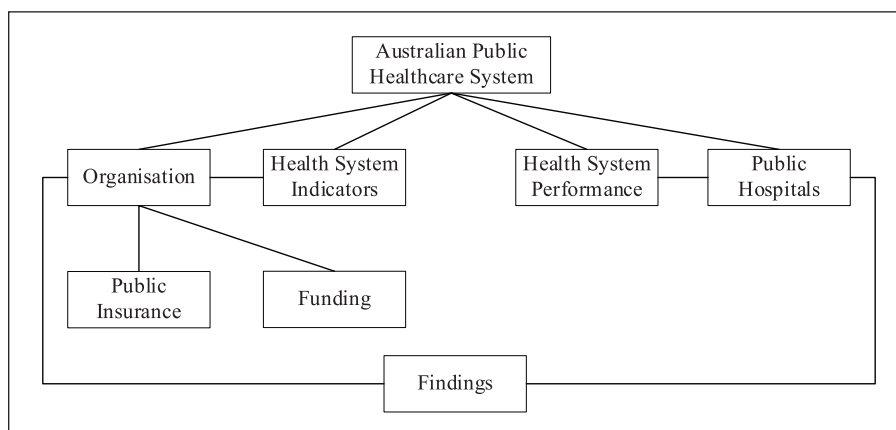
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**Figure 1.** An overview of the study.

Although different reports and data regarding Australia's healthcare sector have been published by the Australian federal, states and territories governments; the Australian Institute of Health and Welfare (AIHW); the Australian Productivity Commission; the OECD; and the World Bank, there is a need for a focused review of the healthcare system in Australia vis-à-vis other healthcare systems in the economically developed nations, to gain insights into the areas (e.g. access, timeliness and costs) where improvements are warranted. To fill the gap, this article reviews the Australian healthcare system and compares it to other advanced countries, as needed, to illuminate the need for improvements. The research question has been framed as follows: *What are the issues and problems being faced by the Australian healthcare system in comparison to other healthcare systems in economically advanced countries?*

The article has been organised as follows. First, the methodology used to gather the literature and datasets has been outlined. Second, it provides a description of the organisation of public healthcare in Australia and presents a comparison of public health expenditure and total health expenditure in similar healthcare systems – those in Australia, Belgium, Canada and France. Third, it presents the information and data related to public health insurance – Medicare – in Australia. Fourth, it highlights the funding mechanism for public hospitals in Australia as per the National Health Reform Agreement (NHRA) 2011. Fifth, it provides an overview of the role of public hospitals in Australia. Sixth, it illuminates the key issues and problems encountered by the Australian healthcare system. Next, it presents a discussion to highlight the need for changes. Finally, it recommends the adoption of the bureaucratic capacity and policy implementation error approach for the evaluation and optimisation of the system.<sup>3,4</sup>

## Methods

### Study design

This article draws knowledge from the elements of the organisation of the public healthcare system in Australia,

health indicators, health system performance and the performance of the public hospitals, as shown in Figure 1.

### Research process

A search of relevant academic books, book chapters, reports and peer-reviewed articles was conducted to gather the information and data in four stages. First, a systematic search was conducted using the electronic databases at the library of Victoria University, Melbourne, Australia. The keywords used to conduct these searches included Australia and healthcare, Australian healthcare, hospital care, hospital funding and Australian healthcare system. Second, a general Google search was conducted by using the above keywords. Third, a focused Google search of the websites of the Commonwealth of Australia, the AIHW, the Australian Productivity Commission, the OECD and the World Bank was conducted to find healthcare data related to Australia and other advanced health systems. Finally, the references related to bureaucratic capacity and policy implementation error were chosen from one of the authors' EndNote reference library.

### Inclusion criteria

Literature, published during the period 2003–2017, that provided data and/or information related to Australian healthcare and other advanced health systems were selected, if found relevant to the research question of this article.

### Data analysis

About top 250 results from the library database and Google searches were selected for further screening for the relevance to the article. The relevant reports and datasets were downloaded from the websites of the Commonwealth of Australia, the AIHW, the Australian Productivity Commission, the OECD and the World Bank. The information and data extracted from the literature and website searches have been

used in this article, as needed. A summary of the information and data selection process is shown in Figure 2.

The extracted information for Australia was analysed in comparison to other countries' health systems, especially Canada and France, as the two countries have quite similar health systems. Furthermore, in a bid to capture important aspects of the healthcare system, that is, its effectiveness, access, safety, efficiency, quality, appropriateness, patient centredness, equity, continuity, timeliness and avoidable hospital use as indicated in Braithwaite et al.,<sup>5</sup> this article has been divided into the following sections – the organisation of public healthcare in Australia, public health insurance in Australia, public hospital funding in Australia and the key issues and problems of the healthcare system and public hospitals in Australia.

### Organisation of public healthcare in Australia

There are three healthcare system models in the world, namely, the welfare state model, the market model and a mix of the welfare state and market models – the hybrid model. In a welfare state model, healthcare is funded by tax dollars, and the government assumes full responsibility for the provision of healthcare services. In a market model, the choice and payment of healthcare services are left to the

individual citizens and private institutions. In a hybrid model, the government provides public insurance for basic coverage, and individuals can buy private insurance for healthcare coverage on the top of any public insurance they have. The Australian healthcare system is a hybrid model under which citizens, permanent residents and refugees can buy private insurance coverage in addition to the public insurance they already have and gain access to both private and public hospitals.<sup>6</sup> The provision of healthcare services by the government requires some gate-keeping – the administration and approval of healthcare services – in some cases. Australia, Belgium, Canada and France have similar healthcare systems because they provide public insurance for the basic coverage, and private insurance can be purchased by individuals on top of the public insurance.<sup>7</sup> Australia had the lowest public health expenditure, as a percentage of the total health expenditure, during the period 2010–2014 of these four countries with similar health systems. Public health expenditure as a percentage of total health expenditure in Australia, Belgium, Canada and France is shown in Figure 3.

### Public health insurance in Australia

The mandatory public insurance scheme in Australia, commonly known as Medicare, provides healthcare coverage to citizens, permanent residents, refugees and citizens of a group of countries that have a reciprocal healthcare coverage agreement with Australia. Medicare is financed from tax dollars, by levying 1.5% of each person's income or 2.5% of the income of individuals and families who have not purchased private insurance and earn over an income threshold. Medicare has two components, payments to public hospitals through the states and territories, and direct payments to doctors and some other health professionals.<sup>6</sup> Medicare is funded through taxation as well as the levy. As per the Australian government's budget outcomes data for the years 2013–2014 to 2015–2016, the Medicare levy was, respectively, 2.94%, 3.85% and 4.07% of the total tax revenue – the corresponding data are shown in Figure 4.

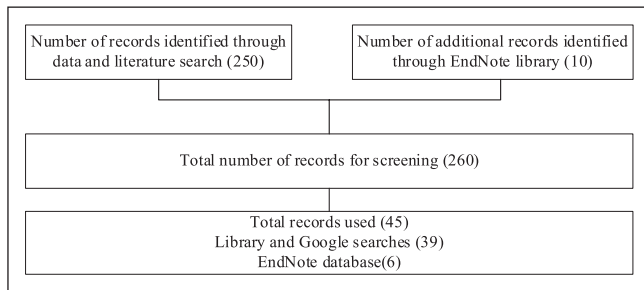


Figure 2. Information and data selection process.

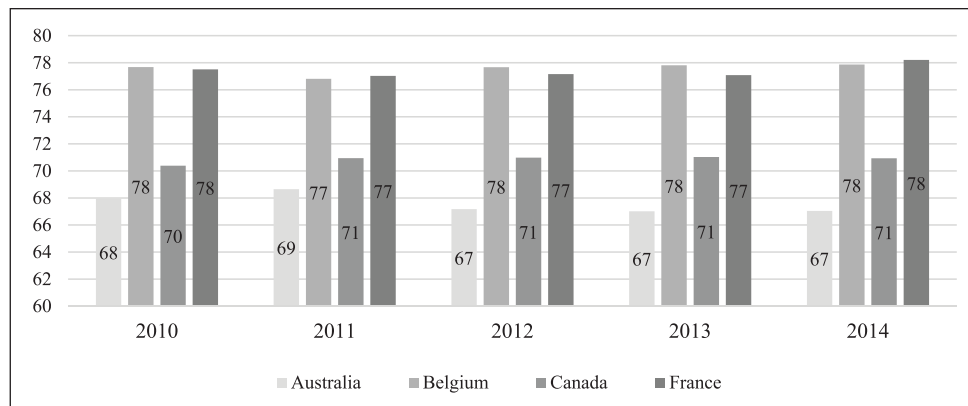
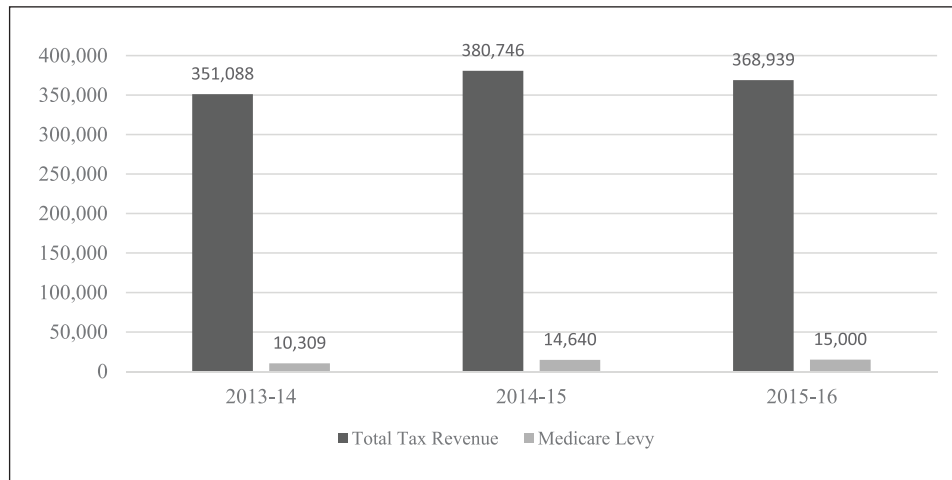


Figure 3. Public health expenditure as a percentage of total health expenditure during the period 2010–2014.<sup>8</sup>



**Figure 4.** Medicare levy and total tax revenue (in millions of AUD\$) during the years 2013–2014 to 2015–2016 compiled from the data as per the Australian government's budget outcomes.<sup>9</sup>

### Public hospital funding in Australia

In August 2011, to bolster the sustainability of the public healthcare system, the Commonwealth and all the states and territories entered into the National Health Reform Agreement regarding the arrangements for the funding and management of public hospitals in Australia. The NHRA stipulates that the signatories are jointly responsible for providing funding to the public hospitals, either as activity-based or block funding.<sup>10</sup> Activity-based funding (ABF) depends on the number and cost of the services provided to patients. Block funding is provided for teaching and research.<sup>11</sup> Some of the features of the NHRA were to (a) build a partnership between the Commonwealth, and all the states and territories; (b) recognise that the responsibility for the management of public hospitals lies with the states and territories; (c) ensure efficient pricing and improved patient access; (d) achieve the sustainability and transparency of public hospitals' funding, along with their accountability and responsiveness to local communities' needs; (e) ensure better performance by public hospitals; and (f) achieve better healthcare outcomes.<sup>10</sup>

State and territory governments are responsible for (a) healthcare delivery and planning by public hospitals, and their performance; (b) planning for funding, in collaboration with the Commonwealth for teaching, research and training; and (c) statewide public hospital industrial relations.<sup>10</sup> A complete flow chart of the public hospitals' funding is shown in Figure 5. During the meeting of the Council of Australian Governments (COAG), held in February 2018, it was decided that the Commonwealth would provide an additional AUD\$30 billion for the period from 1 July 2020 to 30 June 2025.<sup>12</sup>

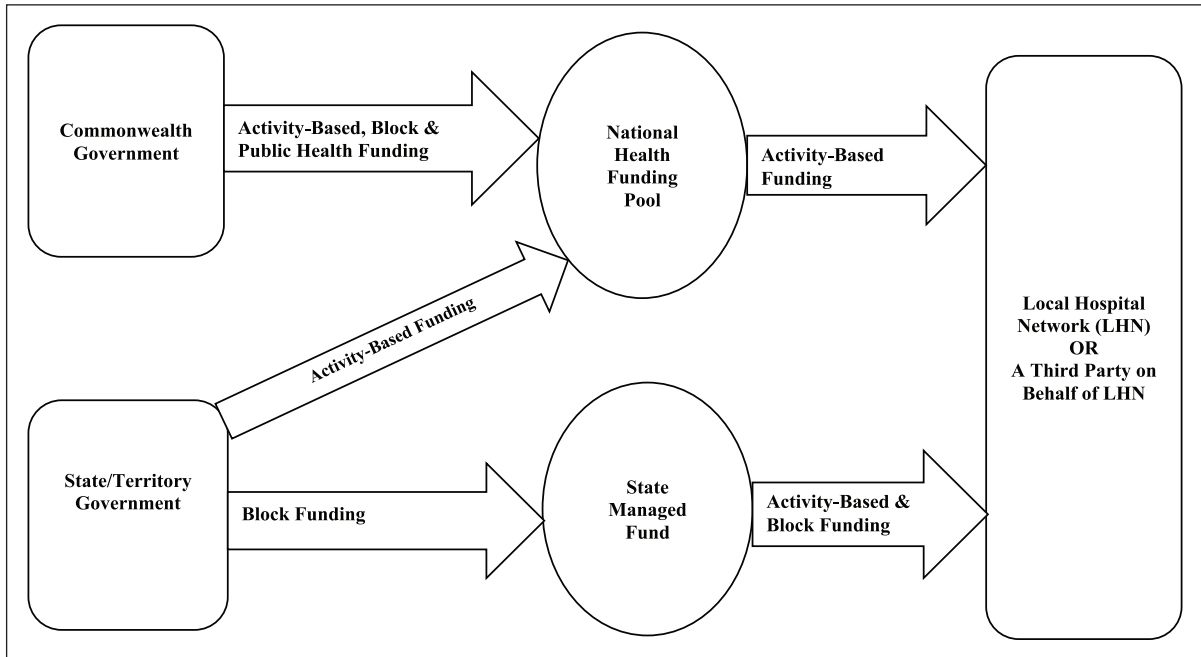
### The role of public hospitals in Australia

As per the 2014–2015 data, there were a total of 1322 hospitals in Australia, out of which 698 were public and 624 were private. As of June 2016, Australia's total population was 24 million. There were 10.2 million hospital admissions during the year 2014–2015, out of which 6 million admissions were in the public hospitals whereas 4.2 million admissions were in private hospitals.<sup>13</sup> In addition to providing healthcare services to inpatients and outpatients, public hospitals in Australia handled emergency care for 7.4 million emergency department presentations during the year 2014–2015. Australia utilises a National Triage Scale/Australian Triage Scale (NTS/ATS) as a standard of healthcare delivery for emergency department patients as shown in Table 1. Depending on the seriousness of a patient's condition, healthcare professionals are required to respond within a certain time (expressed in minutes).

Formulation of health policies governing public hospitals rests with the Commonwealth. State or territory governments are entrusted with the responsibility of implementing health policies while sharing the costs with the Commonwealth. Public hospitals are required to follow the quality and performance mechanisms established by the federal government in consultation with the state and territory governments.

### Australian healthcare system – key issues and problems

In this section, the key issues and problems of the Australian public hospitals are discussed. Australia is a member of the OECD, and it follows the international standards for quality and performance measurement.<sup>5</sup> In its peer group – with other two countries Canada and France – Australia spends



**Figure 5.** A flow chart of public hospital funding in Australia adapted from NHFB.<sup>11</sup>

**Table 1.** Performance measurement criteria of public hospitals in Victoria, adapted from the Commonwealth of Australia, Department of Health.<sup>14</sup>

NTS/ATS category	Treatment acuity (maximum waiting time)	Performance threshold in %
1	Immediate	100
2	10	80
3	30	75
4	60	70
6	120	70

NTS/ATS: National Triage Scale/Australian Triage Scale.

the lowest amount of money on healthcare as a percentage (9.4%) of its gross domestic product (GDP) while its annual growth rate of healthcare spending (2.42%) was the highest during the period 2009–2013. Australia has the highest number of practicing physicians (3.39) per 1000 people; however, the average annual number of physician visits (7.1) is lower than Canada (7.7). In terms of hospital spending, utilisation and capacity, Australia tops the list in its peer group. Australia has the highest number of magnetic resonance imaging (MRI) machines (13.4) per million people but has the lowest MRI exams (27.6) per 1000 people. MRI exams per 1000 people of the OECD28 countries were 51.7.<sup>15</sup>

The data for the OECD countries (Japan, Korea, Norway, Italy, Switzerland, the Netherlands, Sweden, Austria, Belgium, Denmark, France, Portugal, Israel, Poland, Spain, Estonia, Czech Republic, Iceland, Luxembourg, Germany, Finland, the United Kingdom, Chile, Canada, Australia, New Zealand, Mexico and the United States) indicated that 14.5%

of their populations, aged 15 years or older, were obese in 2000, and this increased to 18.4% in 2013. The obesity rate in Australia for the same group of the population increased from 19.8% in 1995 to 28.3% in 2011.<sup>15</sup> Hip replacement surgeries per 100,000 people were 170.6, 161.2, 135.6 and 235.5 for Australia, the average of the OECD33 (Switzerland, Germany, Austria, Belgium, Norway, Finland, Sweden, France, Denmark, the Netherlands, Luxembourg, the United States, Iceland, the United Kingdom, Australia, Czech Republic, Italy, Slovenia, Greece, New Zealand, Hungary, Canada, Ireland, Estonia, Spain, Slovak Republic, Portugal, Poland, Israel, Turkey, Chile, Korea and Mexico), Canada and France, respectively. Knee replacement surgeries per 100,000 people were 180.4, 120.6, 165.8 and 145.4 for Australia, the average of the OECD30 (the United States, Austria, Finland, Germany, Belgium, Australia, Switzerland, Luxembourg, Denmark, Canada, France, the United Kingdom, Sweden, Iceland, the Netherlands, Czech Republic, Korea, Spain, Slovenia, Italy, New Zealand, Norway, Turkey, Portugal, Hungary, Israel, Ireland, Poland, Chile and Mexico), Canada and France, respectively.<sup>15</sup> Selected healthcare system indicators for Australia, Canada and France are shown in Table 2.

**Selected health system performance indicators**

With regard to adults’ access to healthcare, 10% of Australians had to wait for 4 months or more for elective surgery whereas only 4% of the patients had to wait for elective surgery in Canada. About 21% of the patients had experienced a care coordination problem in the past 2 years. Similarly, 41% of the patients reported gaps in



**Table 2.** Selected healthcare system indicators for Australia, Canada and France adapted from Mossialos et al.<sup>16</sup> with modifications.

Indicator		Australia	Canada	France
Spending, 2013 (unless otherwise noted)	Percentage of GDP spent on healthcare	9.4% <sup>b</sup>	10.7%	11.6%
	Healthcare spending per capita <sup>a</sup>	US\$4115 <sup>b</sup>	US\$4569	US\$4361
	Average annual growth rate of real healthcare spending per capita, 2009–2013	2.42% <sup>c</sup>	0.22%	1.35%
	Out-of-pocket healthcare spending per capita <sup>a</sup>	US\$771 <sup>b</sup>	US\$623	US\$277
	Hospital spending per capita <sup>a</sup>	US\$1645 <sup>b</sup>	US\$1338	US\$1600
	Spending on pharmaceuticals per capita <sup>a</sup>	US\$590 <sup>b</sup>	US\$761	US\$622
Physicians, 2013 (unless otherwise noted)	Number of practicing physicians per 1000 people	3.39	2.48 <sup>b</sup>	3.10
	Average annual number of physician visits per capita	7.1	7.7 <sup>b</sup>	6.4
Hospital spending, utilisation and capacity, 2013 (unless otherwise noted)	Number of acute care hospital beds per 1000 people	3.36 <sup>b</sup>	1.71 <sup>b</sup>	3.35
	Hospital spending per discharge <sup>a</sup>	US\$9529 <sup>b</sup>	US\$15,916 <sup>b</sup>	US\$9622
	Hospital discharges per 1000 people	173 <sup>b</sup>	83 <sup>b</sup>	166
	Average length of stay for curative care (days)	4.8 <sup>b</sup>	7.6 <sup>b</sup>	5.7 <sup>b</sup>
Medical technology, 2013 (unless otherwise noted)	MRI machines per million people	13.4	8.8	9.4
	MRI exams per 1000 people	27.6	52.8	90.9
IT, 2015	Physicians' use of EMRs – % of primary care physicians <sup>d</sup>	92%	73%	75%
Health risk factors, 2013 (unless otherwise noted)	Percentage of adults who report being daily smokers	12.8%	14.9%	24.1% <sup>b</sup>
	Obesity (BMI > 30) prevalence	28.3% <sup>e</sup>	25.8%	14.5% <sup>b,c</sup>

Source: Adapted with changes from Mossialos et al.<sup>16</sup>; OECD Health Data 2015 (November) unless otherwise noted.

GDP: gross domestic product; MRI: magnetic resonance imaging; BMI: body mass index, OECD: Organisation for Economic Co-operation and Development; IT: Information technology; EMR: Electronic medical records.

<sup>a</sup>Adjusted for differences in the cost of living.

<sup>b</sup>2012.

<sup>c</sup>Self-reported as opposed to measured data.

<sup>d</sup>Commonwealth 2015 Survey of Primary Care Physicians, 2009–2012.

<sup>e</sup>2011.

hospital discharge planning in the past 2 years. In the primary care settings, only 35% of the patients received clinical outcomes data, while only 46% received patient satisfaction and experience data. Forty-eight percent of the public viewed the public health system as adequate, requiring only minor changes, and 43% saw a need for fundamental changes.<sup>16</sup>

Only 7% of patients experienced care coordination problem in France. On the issue of discharge planning, only 28% of patients experienced gaps in the United States. Eighty-eight percent of the patients received and reviewed clinical outcomes data in the Netherlands. The United Kingdom and Sweden ranked top with 88% of patients reporting receiving and reviewing patient satisfaction and experience data.<sup>16</sup> It is noteworthy that the governments in Australia, Canada and France provide healthcare to the public, yet 16%, 13% and 18% of patients experienced access barriers due to costs, respectively. Selected healthcare system performance indicators for Australia, Canada and France are shown in Table 3.

### Available hospital beds

The number of beds available per 1000 people in Australia was 4.04 in 2000 and 3.75 in 2012, respectively. The same numbers for Canada and France were 2.68 and 6.29, respectively, in 2013. The number of curative (acute) care beds was 3.36, 3.35 and 1.73 per 1000 people in 2013, respectively, for Australia, France and Canada. The hospital acute bed occupancy data for Australia are not available; however, the occupancy rate for Canada and France was 89% and 75%, respectively, in 2013.<sup>15</sup>

### Hospital waiting lists

In simple terms, waiting lists represent some patients who must wait – due to capacity limitations – to get treatment as prescribed by a specialist. In a healthcare system funded by a government, waiting lists have several implications: (a) long waiting lists create a policy headache for the politicians due to the unpopularity of these lists, (b) many patients may

**Table 3.** Selected healthcare system performance indicators for Australia, Canada and France adapted from Mossialos et al.<sup>16</sup> with modifications.

Indicator		Australia	Canada	France
Adults' access to care, 2013	Waited 2 months or more for specialist appointment <sup>a</sup>	18%	29%	18%
	Waited 4 months or more for elective surgery <sup>b</sup>	10%	18%	4%
	Experienced access barrier because of cost in past year <sup>c</sup>	16%	13%	18%
Safety problems among sick adults, 2014 <sup>d,e</sup>	Health professionals did not review their prescriptions in past year	16%	16%	47%
	Experienced a coordination problem in past 2 years <sup>f</sup>	21%	32%	7%
Care coordination and transitions among older adults, 2014 <sup>d</sup>	Experienced gaps in hospital discharge planning in past 2 years <sup>g</sup>	41%	44%	54%
	Had a treatment plan they could carry out in daily life	80%	76%	62%
Chronic care management among older adults, 2014 <sup>d,h</sup>	Between visits, patients have a healthcare professional they can contact to ask questions or to get advice	65%	67%	53%
	Routinely receives and reviews clinical outcomes data	35%	23%	43%
Primary care practices receive performance feedback, 2015	Routinely receives and reviews patient satisfaction and experience data	46%	17%	3%
	Routinely receives data comparing performance to other practices	13%	17%	49%
	Breast cancer 5-year survival rate, 2008–2013 (or nearest period)	88%	n/a	86.2%
Avoidable deaths, 2013	Mortality after admission for acute myocardial infarction per 100 admissions over age 45, 2013 <sup>i</sup>	4.1 <sup>j</sup>	6.7	7.2
	Mortality amenable to healthcare <sup>k</sup> (deaths per 100,000 population)	68 <sup>l</sup>	78 <sup>l</sup>	64 <sup>l</sup>
Prevention, 2013 <sup>m</sup>	Percentage of children with measles immunisation	94%	95%	89%
	Percentage of population over age 65 with influenza immunisation	n/a	64%	52%
Public views of health system, 2013	Works well, minor changes needed	48%	42%	40%
	Fundamental changes needed	43%	50%	49%
	Needs to be completely rebuilt	9%	8%	11%

Source (unless noted otherwise): Adapted with changes from Mossialos et al.<sup>16</sup>; 2013, 2014 and 2015 Commonwealth Fund International Health Policy Surveys.

WHO: World Health Organization; OECD: Organisation for Economic Co-operation and Development.

<sup>a</sup>Base: Saw or needed to see a specialist in past 2 years.

<sup>b</sup>Base: Needed elective surgery in past 2 years.

<sup>c</sup>Did not fill/skipped prescription, did not visit doctor with medical problem and/or did not get recommended care.

<sup>d</sup>Age 65 or older.

<sup>e</sup>Who are taking four or more prescription medications regularly.

<sup>f</sup>Test results/medical records not available at time of appointment and/or doctors ordered medical test that had already been done; received conflicting information from different doctors; and/or specialist lacked medical history or regular doctor was not informed about specialist care.

<sup>g</sup>When discharged from the hospital, you did not receive written information about what to do when you returned home and symptoms to watch for; hospital did not make sure you had arrangements for follow-up care; someone did not discuss with you the purpose of taking each medication; and/or you did not know who to contact if you had a question about your condition or treatment. Base: Hospitalised overnight in the past 2 years.

<sup>h</sup>Who had at least one chronic condition.

<sup>i</sup>In-hospital case-fatality rates within 30 days of admission.

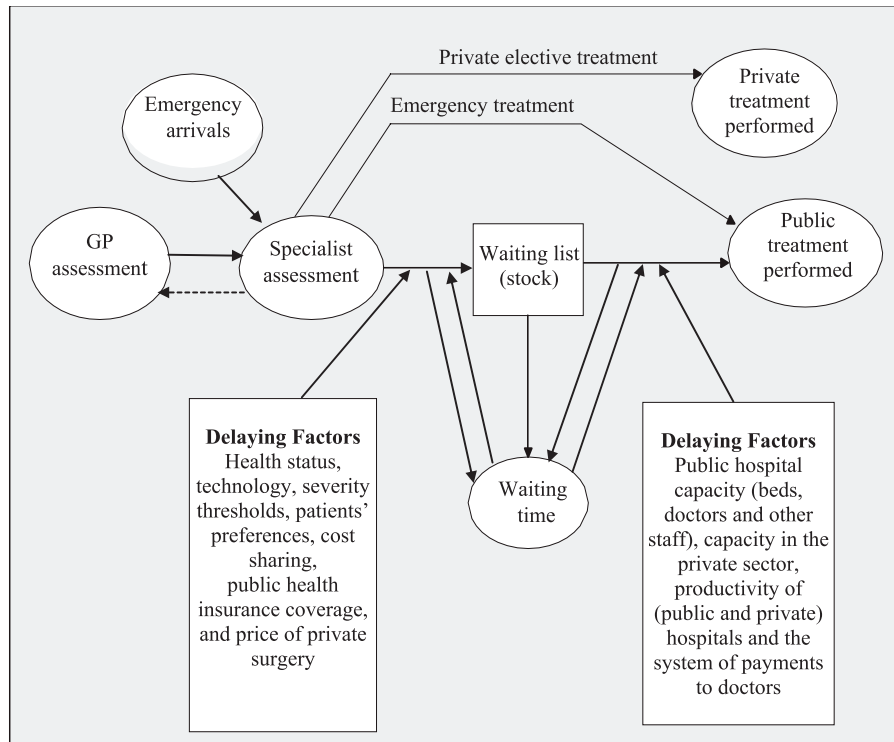
<sup>j</sup>Admissions resulting in transfer are included.

<sup>k</sup>WHO mortality files (number of deaths by age group) and populations (except Human Mortality Database for Canada). List of amenable causes.<sup>17</sup> 2011.

OECD Health Data 2015.

not wait for their turn and seek treatment from private hospitals, (c) waiting lists are costly to administer and (d) waiting lists may point to the underutilisation of available hospital beds.<sup>18</sup> There are two categories of waiting times for publicly funded patients: (a) waiting times from a specialist's assessment for a patient to receive treatment and (b) waiting times of patients being on the list for a procedure.

Waiting times do not include the period from the date of a general practitioner's (GP) referral to the date of a specialist's assessment. Waiting times are measured in three units, namely, the mean days that patients have been waiting for the procedure, the median days separating evenly the higher and lower half of patients who have waited for the longest time and the least number of days and the percentage of all



**Figure 6.** Waiting lists and waiting times flow chart for elective treatment adapted from Siciliani and Hurst<sup>20</sup> with modifications.

patients waiting for more than 3 months.<sup>19</sup> GPs refer patients to specialists who, after making an assessment, decide whether to return a patient to the GP for ongoing treatment or recommend a procedure. If a procedure is recommended for a patient, he or she is added to a waiting list. A range of factors including the severity of the condition and the cost of private treatment add to the waiting lists. Other factors such as the availability of hospital beds, the physicians' payment systems and their productivity shorten the waiting lists. A conceptual design of the process and the factors that shape the waiting lists, as suggested by Siciliani and Hurst,<sup>20</sup> is shown in Figure 6.

In terms of waiting lists in median days, from 2011 to 2014, Canada fared better than Australia in four surgery categories: Cataract surgery, coronary bypass surgery, hip replacement and knee replacement surgeries<sup>19</sup> as shown in Figures 7 and 8.

### *Selected unplanned hospital readmission rates*

Selected unplanned hospital readmission rates refer to the number of unplanned admissions that occur within 28 days of a patient's discharge after a surgical procedure, due to a post-operative complication, divided by the corresponding total number of separations.<sup>21,22</sup> This rate has assumed significance as insurers in some countries (e.g. the United States) decline to pay the costs incurred by hospitals for

unplanned readmissions within a certain time period. The 'selected unplanned hospital readmission rates' for public hospitals in Australia from 2012–2013 to 2014–2015 are shown in Table 4.

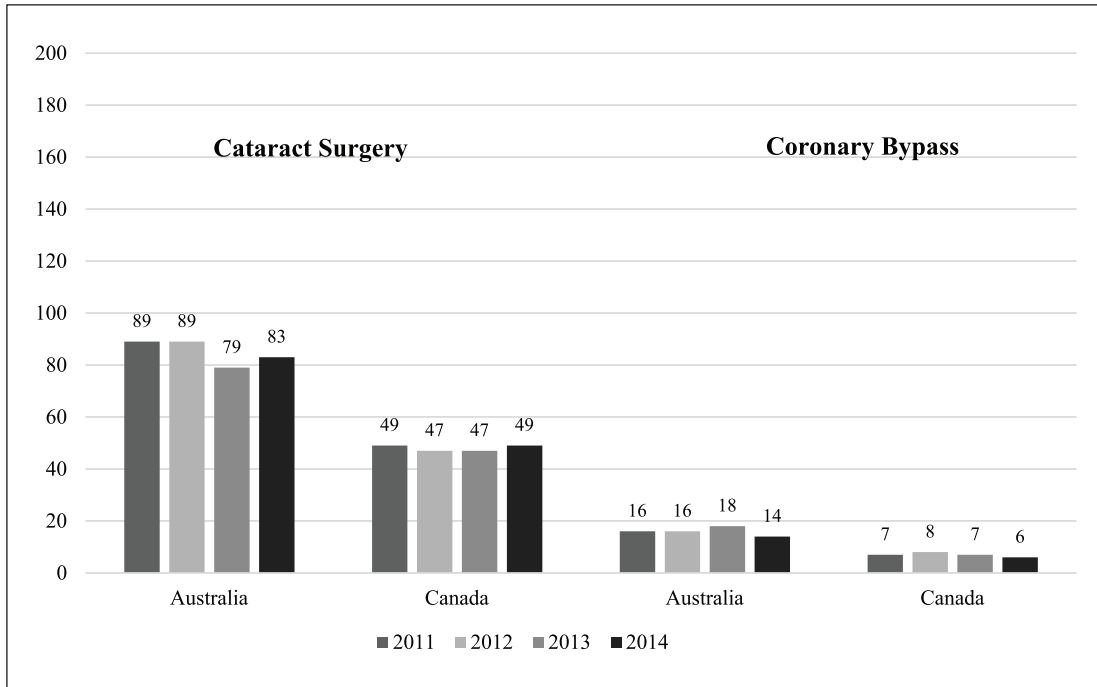
### *Cost of public hospital separations*

The cost of public hospital separations is calculated by the Independent Hospital Pricing Authority (IHPA) established by the Commonwealth in accordance with the provisions of the National Health Reform Act 2011. The average cost per weighted separation is calculated by multiplying the Diagnosis-Related Group (DRG) weights by a state's separation. Separations that do not have a DRG code are excluded from the computation of the average cost per admitted weighted separation.<sup>21</sup> The average cost per admitted acute weighted separation for the public hospitals in Australia for the years 2013–2014 and 2014–2015 is shown in Table 5.

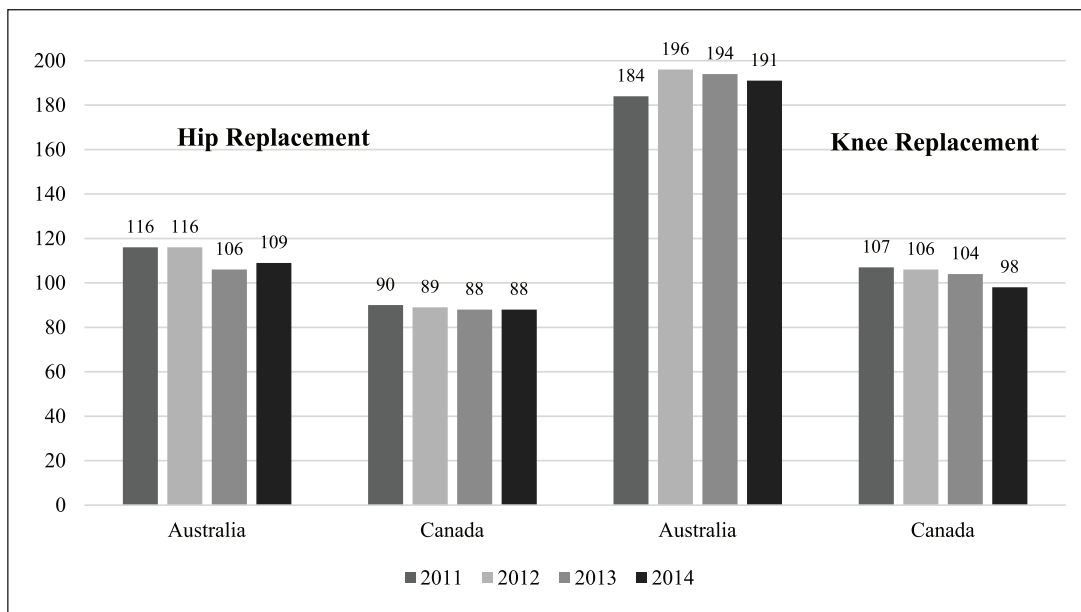
### *Appropriateness of healthcare delivery*

A widely disseminated study, called the CareTrack study, was conducted in Australia by Runciman et al.,<sup>23</sup> to determine the appropriateness of healthcare delivery as a result of patients' encounters with healthcare professionals, including GPs, specialists and physiotherapists. Some of the health





**Figure 7.** Waiting time (in median days) from specialist’s assessment to treatment for cataract and coronary bypass surgeries for Australia and Canada.<sup>19</sup>



**Figure 8.** Waiting time (in median days) from specialist’s assessment to treatment for hip and knee replacement surgeries for Australia and Canada.<sup>19</sup>

conditions chosen for the CareTrack study were taken from a seminal study in the United States by McGlynn et al.<sup>24</sup> The CareTrack study revealed that significant improvements

were needed to deliver appropriate healthcare in Australia. The results of the selected health conditions covered by the CareTrack study are shown in Table 6.

**Table 4.** Selected unplanned hospital readmission rates per 1000 separations, by selected surgical procedures, from 2012–2013 to 2014–2015.<sup>21</sup>

	Australia
2012–2013	
Surgical procedure prior to separation	
Knee replacement	22.4
Hip replacement	17.5
Tonsillectomy and adenoidectomy	33.1
Hysterectomy	30.6
Prostatectomy	31.1
Cataract surgery	3.4
Appendectomy	23.1
2013–2014	
Surgical procedure prior to separation	
Knee replacement	23.7
Hip replacement	17.8
Tonsillectomy and adenoidectomy	33.0
Hysterectomy	29.8
Prostatectomy	25.5
Cataract surgery	3.1
Appendectomy	20.3
2014–2015	
Surgical procedure prior to separation	
Knee replacement	22.7
Hip replacement	17.1
Tonsillectomy and adenoidectomy	35.7
Hysterectomy	31.6
Prostatectomy	24.3
Cataract surgery	3.1
Appendectomy	22.0

## Discussion, implications and recommendations

In this section, an endeavour is being made to interpret the information presented in the article and to explain the implications. Limitations and recommendations for future research and potential research methods are also proposed. Information pertaining to the Australian and other nations' healthcare systems already exists in the literature, most prominently regarding the various performance indicators discussed in this article, including the analysis done by the OECD,<sup>7,15,19</sup> the Commonwealth Fund,<sup>16</sup> the World Bank<sup>8</sup> and the AIHW.<sup>13</sup> In addition, the Australian Productivity Commission periodically scrutinises the Australian healthcare system, including the public hospitals, and publishes the reports for the commonwealth, states and territories.<sup>21</sup>

Australia has a parallel private hospital system, and its health policy encourages a robust public hospital system complemented by private hospitals; hence, patients may choose to go to a private or public hospital – however, the unsubsidised part of the private hospital's costs would have to be covered by a private insurance plan.<sup>26</sup> In Canada, healthcare's organisation and delivery are primarily the

**Table 5.** Average cost per admitted acute weighted separation, excluding depreciation.<sup>21</sup>

	Australia (AUD\$)
Separations	
2013–2014	4997
2014–2015	5249
Weighted separations	
2013–2014	4994
2014–2015	5243
Average cost per weighted separation	
2013–2014	4970
2014–2015	5025

responsibility of the provinces and territories. Canada has a mix of public and private hospitals including not-for-profit ownership of the hospitals rests with the regional authorities or hospital boards from the community or the government.<sup>27,28</sup> The French healthcare system is driven by a strictly regulated ideological framework, but once people are inside the framework, they are free to utilise healthcare as much as they want.<sup>29</sup> Although there are for-profit hospitals in France, most hospitals are public or not-for-profit.

In Australia, the cost of seeking healthcare from a private hospital can be a barrier for those who do not have private insurance and are not able to afford the costs from their own funds. Although ABF has been scrutinised by researchers and experts, it is complicated due to the lack of rigorous empirical enquiries. Based on the information available, ABF increases the activity while reducing the length of stay and/or the hospital expenditure's growth rate.<sup>30,31</sup> In Canada, though the Provinces of Ontario, Alberta and British Columbia have considered adopting an activity-based payment mechanism, Canadian hospitals function under annual budgets negotiated with the provincial or territorial ministries of health or the regional health authorities.<sup>16,32,33</sup> While ABF drives activities to meet particular targets, such as emergency room waiting times, block funding promotes cost controls<sup>34</sup> a switch to ABF may affect post-acute care admissions and create uncertainty around its impact on other critical outcomes.<sup>35</sup> Physicians are autonomous in France, and patients choose their physicians and have direct access to specialists; employees and employers pay, for the most part, towards mandatory healthcare coverage for both themselves and their dependents, through premiums which are based on a percentage of their gross wages, which pays for the healthcare services provided by public hospitals, private not-for-profit hospitals, the for-profit and the large ambulatory care sector.<sup>36,37</sup>

Public healthcare is financed by Medicare in Australia. In Canada, the provinces have their own public insurance programmes, and the federal government co-finances the provincial and territorial health programmes if such programmes conform to the following five principles: (a) publicly administered, (b) comprehensive in coverage, (c) universal, (d)

**Table 6.** Numbers of indicators, participants and eligible encounters, and percentage of encounters at which appropriate care was received, by condition, 2009–2010.

Condition	No. of indicators	No. of participants	No. of eligible encounters	No. of encounters with appropriate care (95% CI)
Coronary artery disease	38	131	769	90% (85.4%–93.3%)
Chronic heart failure	42	30	541	76% (65.1%–85.1%)
Osteoporosis	14	60	387	55% (20.8%–86.3%)
Atrial fibrillation	18	59	242	55% (46.9%–62.8%)
Cerebrovascular accident	35	19	290	53% (38.2%–67.7%)
Osteoarthritis	21	188	3517	43% (35.8%–50.5%)
Preventive care	13	665	2366	42% (31.4%–53.6%)
Surgical site infection	5	348	721	38% (27.9%–48.6%)
Chronic heart failure	42	30	541	76% (65.1%–85.1%)

Source: Adapted with modifications from Runciman et al.<sup>23</sup>  
CI: confidence interval.

**Table 7.** A Comparison of the Australian, Canadian and French Health Systems.

Criteria	Australia	Canada	France
Responsibility to provide healthcare	Federal, state and territory governments	Provinces and territories	Universal coverage
Hospital type	Both public and private	A mix of public and private hospitals, including not-for-profit	Mostly public and not-for-profit
Financing	Both governments and private insurance providers	Provinces and territories with co-financing by the federal government if set criteria are met, and private health insurance	Employer and employee payroll taxes, other taxes and levies
Reimbursement mechanism	Activity-based for public hospitals, and co-payments, deductibles, exclusions and restrictions	Hospitals' annual budgets are negotiated with the provincial and territory governments, and private health insurance	A Diagnosis-Related Group (DRG) system for the hospitals, and reimbursements to patients minus the co-payments
Barriers	Cost is a barrier to use private hospitals	Cost is a barrier to use the services not covered	Patients are free to choose primary care physicians and specialists

portable across provinces and (e) accessible.<sup>16</sup> In France, statutory health insurance is funded by employer and employee payroll taxes; a national earmarked income tax; taxes levied on tobacco and alcohol; voluntary health insurance companies; state subsidies; and transfers from other branches of the social security system.<sup>16,38</sup> It has been suggested that an independent authority be created to coordinate hospital and ambulatory care, as the government currently controls those functions.<sup>39</sup> A summary of the key characteristics of the Australian, Canadian and French healthcare systems is shown in Table 7.

This review contributes to the knowledge in several ways: (a) it brings together the different perspectives from other reviews and critically illuminates the problems that are specific to the Australian public healthcare system vis-à-vis other healthcare systems; (b) it takes into consideration the issue of the appropriateness of care, as highlighted by the CareTrack study<sup>23</sup>; (c) it illuminates the need for a rethink of

the paradigm that is currently used to evaluate the Australian and other healthcare systems; and (d) the data, information and critical evaluation presented in this article set the stage for both qualitative and quantitative research.

In terms of the policy implications of this article, we know that the public hospitals are for everyone, irrespective of their state of health or capacity to pay; no patient can be turned away or no patient refused healthcare services. Health policymakers ought to be mindful that the condition of someone's health cannot be accurately predicted, and healthcare is a necessity. Having said that, this article provides some valuable insights into the public hospitals in Australia, not clearly highlighted in the existing literature, as noted below:

1. Australia's public health outlay, as a percentage of its total health expenditure, is lower in comparison to that of Canada and France. Policymakers have some flexibility to boost public health spending

by redesigning the current incentives to healthcare providers to improve performance and perhaps improve efficiency at the same time. For example, Australia has the highest number of MRI machines per one million people in its peer group; however, the number of MRI exams per 1000 people is significantly lower than the OECD28 (a group of OECD countries). It appears to be a resource allocation problem.

2. Australia uses ABF, and thus, there is scope for switching to a bundled payment system in which efficiency, quality and patient outcomes are rewarded. Bundled payment models reduce costs without hampering the quality of care.<sup>25</sup> In a bundled payment mechanism, the payment for services is not only fixed but also subject to quality and patient outcomes. In addition, there is an opportunity to fully shift to a patient-centred business model by making the patients' satisfaction a factor in the payment mechanism. The French health system appears to be ideal regarding patients' freedom to choose healthcare providers.
3. The NTS/ATS maximum waiting time has already been established, the performance indicator threshold ought to be raised to 100% for all categories and then actual performance be measured against the 100% target. This is a health policy implementation issue.
4. Knee and hip replacement surgeries per 100,000 people are higher in Australia in comparison to the OECD30 (a group of OECD countries), Canada and France. As Australia continues to grapple with the worsening problem of the waiting lists,<sup>40</sup> there is a need to focus on efficiencies in this area by reducing the average length of stay and readmission rates. There are two main issues related to the waiting lists for elective surgeries: (a) the time lost between a GP's recommendation and a specialist's assessment is important, and (b) waiting lists may be an indication of inadequate resource allocations or underutilisation of the available resources.
5. Gaps in discharge planning, lack of access to clinical outcomes and patient experience data create an information asymmetry between the healthcare providers and patients, that should be reduced. The CareTrack study suggests that the appropriateness of care is a problem. This issue needs a continuing research effort. It is worthwhile mentioning that the structural changes alone are unlikely to achieve any health policy goals without the requisite cultural changes.<sup>41</sup>

Public hospitals in Australia face problems like other developed countries, for example, limited resources, a growing demand and pressure to improve the quality and patients' outcomes. Resource allocations and performance improvements are two main issues that policymakers, researchers and healthcare practitioners ought to deal with.

Based on the issues illuminated in this article, the following recommendations are made with regard to the direction of future research. First, a bundled payment mechanism may be used to reduce the costs and improve the quality and patients' outcomes. Bundled payments can also be used to reduce unplanned readmissions. Second, Australia also has private hospitals, the prospects for the pooling of resources and the management of a joint waiting list could be explored. Such a proposal may trigger a public policy debate and raise some legislative issues. Third, the appropriateness of care should be incorporated in the outcomes' measurements of hospitals. Finally, patient education and discharge planning strategies should be a part of the performance measurement mechanism.

Since public hospitals are owned and operated by government(s), it is proposed that political science and public administration knowledge streams be relied upon for research enquiries into the public hospitals' functioning. In this article, important aspects of Australia's public hospital system have been illuminated. As the state or territory governments are responsible for the oversight and performance of public hospitals, the key players' roles can be identified as follows. First, the Commonwealth Minister of Health is the person responsible for the implementation of the health policy. The COAG serves as the connecting loop between the Commonwealth Minister and the State Premiers and Cabinets.<sup>42</sup> Second, due to the government's funding of public hospitals, taxpayers are key players too, as they and their loved ones are served as patients. Third, public hospitals themselves are key players in the delivery of healthcare services to their patients. Finally, within each public hospital, physicians and nurses play a key role in the delivery of these healthcare services. Thus, the issues or problems encountered by public hospitals may be addressed by the underpinning of knowledge related to the delegation of authority to bureaucrats by politicians, policy implementation error and bureaucratic capacity.<sup>3,4,43,44</sup>

Politicians are the principals, and bureaucrats are their agents. Principals cannot do the task of policy formulation and implementation themselves; they have to rely on the expertise of the bureaucrats. The following steps can be taken to further the research leading to the evaluation of Australia's public healthcare system.

First, the implementation error should be computed for key policy outcomes. The differences between policy targets and policy outcomes are defined as the policy implementation error. A new concept of public policy implementation efficiency is being introduced in this article. If policy outcomes are higher than policy targets, they could be defined as being in a state of public policy implementation efficiency. For example, the policy implementation error and policy implementation efficiency may be computed for the length of stay for all surgical procedures, waiting times for all elective surgery procedures and emergency department waiting times by NTS category type. Policy implementation errors may also be computed for all the possible policy targets that

are measurable in quantitative terms. Public policy implementation efficiencies can be used to offset policy implementation errors by reallocating the resources. Second, after the policy implementation error is computed, further investigation could be done to assess the bureaucratic capacity. Khan<sup>45</sup> used a regression model in regard to good governance by using the World Bank governance indicators to assess bureaucratic capacity. Then, after the two computations have been completed, corrective measures may be taken in the problem areas.

There are five limitations of the review conducted in this article. First, it relies on the available secondary data. The increased transparency and timely release of data by the Commonwealth, state and territory governments may address this limitation. Second, though this review provides an adequate conceptual foundation for both qualitative and quantitative research, it does not build testable propositions. Third, this review does not include any theoretical underpinnings. Fourth, this article does not address the issues, problems and performance of private hospitals. Finally, variations in the performance of public hospitals in the different states and territories have not been considered.

## Conclusion

In this article, an analysis of the organisation of public healthcare, government-provided health insurance, the role of public hospitals and the issues and problems being encountered by the Australian healthcare system have been encapsulated. It is an attempt to conduct a review of the Australian healthcare system in a comprehensive way and highlight potential avenues for qualitative and quantitative research enquiries. This article makes the following contributions to the body of knowledge. First, the information presented could be used to investigate the organisation design of public hospitals in Australia. Second, policymakers and healthcare administrators who have access to the hospitals' outcomes data could use policy implementation and bureaucratic capacity to improve the resource allocations and performance of public hospitals. Finally, private and non-profit hospitals could use policy implementation and bureaucratic capacity to assess the effectiveness of their strategy implementation efforts. It is hoped that this article will trigger a debate for better policy-making and implementation, as public hospitals must meet the expectations of both governments and the people.

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