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# Evaluations of health care delivery models in Australia: a scoping review protocol

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## Review questions

1. What primary, comparative evaluations of health care delivery models that require the employment of additional health care providers (either to replace existing providers of another type or to provide new services), have been undertaken in Australia?
2. In which clinical areas have these evaluations been undertaken?
3. Which health care provider categories have been studied in these evaluations?
4. In which healthcare settings have these evaluations been undertaken?
5. Which research methods have been used in these primary, comparative evaluations?

## Introduction

Health expenditure in Australia has long increased at a faster rate than economic growth. Over the last 25 years, government spending on health increased from 15.7% of taxation revenue to 24.1% and health expenditure increased from 6.5% to over 10% of total economic activity.<sup>1</sup> While there exists sensible debate as to whether or not this trend in spending is sustainable<sup>2</sup>, there has been and likely will continue to be a scarcity of resources and an inability to fund all healthcare that is expected to provide some benefit. It is important to assess the value of alternative options for the allocation of scarce healthcare resources across the whole of a health system. Economic evaluation is an important input to a decision-making framework, in which the costs and health benefits of alternative investment options are considered alongside other factors, such as the equitable allocation of resources.

In Australia, there are formal processes for assessing the value of new pharmaceuticals and medical services to inform decisions to list new items on the Pharmaceutical Benefits Schedule (PBS) and Medicare Benefits Schedule (MBS), respectively. Some state health departments have sought to define the way economic information is used by health service planners and decision-makers, for example, in the context of 'model of care' development and 'horizon scanning' as part of a commissioning cycle.<sup>3-5</sup> However, there are no formal processes for making decisions on whether to fund new, evaluated health care delivery models. The imbalance in decision making processes for health technologies and health care delivery models appears to undervalue the available evidence on health care delivery models, leading to the sub-optimal allocation of resources between new health technologies and new health care delivery models within the Australian health system.

Health service evaluations are undertaken across the Australian health system, funded by the National Health and Medical Research Council, governments, local health services and charities.<sup>6</sup> These evaluations provide evidence that should be assessed with a view to informing funding decisions aimed at improving health services.<sup>7</sup> The validity and relevance of such evaluations to local contexts needs to be considered, but that is the role of formal decision-making processes.

The aim of the proposed scoping review is to describe the evidence base of published primary, comparative evaluations of health care delivery models that require the employment of additional health care providers (either to replace existing providers of another type or to provide new services), undertaken in Australia. For example, medication review by pharmacists in emergency departments or patients' homes have the potential to reduce hospitalizations, but require an investment in additional health care providers.<sup>8,9</sup> The identified evaluations will be potential inputs to formal decision making processes for the assessment of new health care delivery models. The review has a particular focus on health care delivery models that could be funded by Primary Health Networks (PHNs) and Local Hospitals Networks (LHNs) in Australia. PHNs fund programs aimed at improving access to coordinated, high-quality primary health care. LHNs fund hospital-based services, including outreach services, such as home-based rehabilitation.

The search strategy can be adapted to inform searches of the international literature for evidence on health care delivery models in specific clinical areas. The review will also identify gaps in the evidence base to inform research funding priorities.

A search was conducted in February 2019 for broad scoping and systematic reviews of health care delivery models in the following databases: JBI Database of Systematic Reviews and Implementation Reports, Cochrane Database of Systematic Reviews, PubMed, Epistemonikos and The Cumulative Index to Nursing and Allied Health Literature (CINAHL). A protocol for a scoping review of systematic reviews of alternative service models for the delivery of healthcare services in high-income countries was identified.<sup>10</sup> The proposed scoping review provides a more specific review of primary comparative studies (not systematic reviews) in Australia. The two reviews are complementary. The broader review could be used to identify broad areas with strong evidence of effects in the international literature, and then identify specific Australian studies within selected broad areas using the review proposed in this protocol.

**Keywords:** health services; health workforce; healthcare delivery models; Australia; decision-making; evaluation

## **Inclusion criteria**

The Population, Concept and Context (PCC) framework has been used to guide this review.<sup>11</sup>

## **Population**

Interventions in all population groups with an existing health condition (disease or risk factor), irrespective of age or sex, will be included. Interventions aimed at primary prevention will be excluded, including health promotion activities such as school-based exercise or nutrition programs, HIV testing

in at-risk populations, screening in healthy populations and immunization campaigns. Such interventions are excluded because the review aims to inform resource allocation decisions made by PHNs and LHNs in Australia and these entities are not responsible for the funding of primary prevention programs.

## **Concept**

For the purposes of this review, an evaluated health care delivery model aims to provide an existing service using an alternative set or mix of health care providers, or to provide a new service or form of treatment. To be included in the review, health care delivery models require the employment of additional health care providers (either to replace existing providers of another type or to provide new services). This includes cases of task-shifting in which activities performed by one section of the workforce (e.g. doctors) are transferred to another (e.g. nurses), which would result in altered staffing structures within a service. An alternative example would be the use of telemedicine to provide services to a rural population with unmet needs. Interventions that aim to improve services with existing staffing structures, through either training or the introduction of protocols, will be excluded.

## **Context**

Included studies must be undertaken solely within Australia. Studies in all settings will be included. These may include but are not limited to primary care, specialist care, emergency departments, inpatient care, community care and aged-care facilities.

## **Types of studies**

Included evaluations must include a comparator, involving the observation of outcomes over a similar period of time for studies in which:

- multiple groups of individuals receiving treatment via two or more alternative health care delivery models for the condition of interest,
- one group receives treatment via a health care delivery model and another group receives no treatment for the condition of interest.

Appropriate study designs include randomized controlled trials, observational cohort studies and pre-post studies. Reviews, opinion papers and letters will be excluded.

## **Methods**

A scoping review will be undertaken to provide an overview of the current available evidence on health care delivery models requiring the employment of additional health care providers (either to replace existing providers of another type or to provide new services) in Australia. The aim of mapping available evidence is consistent with the purpose of scoping reviews.<sup>12</sup> The Joanna Briggs Institute of Reviewers' Manual will be used to conduct this study and the PRISMA Extension for Scoping Review checklist will be used to report findings<sup>11,13</sup>.

## **Search strategy**

The review team conducted a number of small searches in PubMed to test the various search terms and combinations of terms.<sup>14</sup> After identification of the most relevant terms, additional text words and index terms of relevant articles were identified and included in the final search strategy. The following databases will be searched for citations published in English: PubMed, EMBASE and the Cumulative Index to Nursing and Allied Health Literature (CINAHL). The search will be limited to articles published since 2008 to ensure relevance to the current Australian health system. No grey literature searches will be undertaken due to limited capacity. The final search strategy for PubMed is presented in Appendix I. Search strategies for the other databases used are available from the corresponding author.

## **Study selection**

Citations will be imported into Endnote V8.2 (Clarivate Analytics, PA, USA) where duplicates will be removed. The remaining citations will be imported into Rayyan.<sup>15</sup> As a large number of citations are expected due to the inclusion of general keywords, the title and abstract review will be undertaken in two steps. Firstly, one reviewer will screen the full set of titles, with a second reviewer screening 10% of titles to ensure agreement between the two reviewers. Secondly, the results will be imported into Covidence<sup>16</sup> where each citation abstract will be independently reviewed by two reviewers using the pre-specified inclusion criteria around the Population, Concept and Context. Disagreements will be resolved through consensus. Thereafter, screening and selection of full-text articles will occur. The first 10% of full-text articles will be reviewed by two reviewers. The remaining full-text articles will be reviewed by a single reviewer. If a reviewer is unable to make a decision, the citation will be discussed with a second reviewer. Reasons for excluding studies at this stage will be recorded and reported in the review.

## **Methodological quality appraisal**

Consistent with scoping review methodology, methodological quality assessment and risk of bias will not be undertaken.<sup>11</sup>

## **Data extraction**

An extraction form will be developed using Microsoft Excel (2013). A draft is presented in the appendix. Data extraction will be done by two reviewers for the first 10% of articles. The remaining data extraction will be done by a single reviewer. Study characteristics will include authorship, year and journal of publication and study location (e.g. state(s) in which study was conducted). Study design will include type of study, clinical areas as defined by the Medical Board of Australia, healthcare setting, intervention, whether the comparator was usual care, workforce category (e.g. category of health care provider) and study sample size. No outcomes will be extracted.

## **Presentation of the results**

The results of the data extraction will be presented in a table. To inform descriptive statistical analyses of the extracted data, the extracted data will be reviewed to inform the aggregation of data categories, for example, clinical area, intervention type and sample size. Descriptive statistics will be undertaken to summarize the characteristics of the studies, presenting percentages and frequencies relating to the year of publication, study type, clinical area, healthcare setting, intervention, comparator usual care (yes/no), workforce category and study sample size. Univariate and multivariate descriptive statistics will be presented, for example, analyzing clinical area, healthcare setting and workforce category by study type and sample size.

A narrative summary of the studies will be prepared focusing on the frequency and study design features of published studies by clinical area, healthcare setting and workforce category. Case study examples of how the results of the review could be used to inform more detailed reviews of studies in specific areas will be presented from a PHN and LHN perspective.

### **Contributors**

All authors read and approved the final protocol prior to its submission.

### **Funding**

Not applicable

### **Conflict of interest**

The authors declare no conflict of interest

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## Appendices

### Appendix 1: PubMed search strategy

1	Patient Care Management	"Patient Care Management"[Mesh] OR patient care management[Title/Abstract ] OR health service*[Title/Abstract] OR delivery of health care[Title/Abstract] OR healthcare delivery[Title/Abstract] OR health care delivery[Title/Abstract] OR model of care[Title/Abstract] OR care pathway*[Title/Abstract] OR service intervention*[Title/Abstract] OR service deliver*[Title/Abstract] OR referral pathway*[Title/Abstract]
2	Evaluation	"Evaluation Studies" [Publication Type] OR "Clinical Trial" [Publication Type] OR "Clinical Study" [Publication Type] OR "Comparative Study"[Publication Type] OR "Controlled Clinical Trial"[Publication Type] OR "Evaluation Studies"[Publication Type] OR "Observational Study"[Publication Type] OR "Pragmatic Clinical Trial"[Publication Type] OR "Randomized Controlled Trial"[Publication Type] OR evaluation*[Title/Abstract] OR trial*[Title/Abstract]
3	Australia	"Australia"[Mesh] OR Australia*[Title/Abstract] OR Australian Capital Territory[Title/Abstract] OR New South Wales [Title/Abstract] OR Northern Territor*[Title/Abstract] OR Queensland[Title/Abstract] OR South Australia[Title/Abstract] OR Tasmania[Title/Abstract] OR Victoria [Title/Abstract] OR Western Australia[Title/Abstract] OR Canberra[Title/Abstract] OR Sydney[Title/Abstract] OR Darwin[Title/Abstract] OR Cairns[Title/Abstract] OR Brisbane[Title/Abstract] OR Adelaide[Title/Abstract] OR Hobart[Title/Abstract] OR Melbourne[Title/Abstract] OR Perth[Title/Abstract]
	1&2&3	Time limit: 10 years



