Health Policy xxx (2018) xxx–xxx

Contents lists available at ScienceDirect

Health Policy

journal homepage: www.elsevier.com/locate/healthpol

The application of triple aim framework in the context of primary healthcare: A systematic literature review

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ARTICLE INFO

Article history:
Received 16 January 2018
Received in revised form 4 June 2018
Accepted 8 June 2018

Keywords:
Health policy
Health system reforms
Healthcare innovation
Healthcare quality
Redesigning healthcare organisations
Triple aim

ABSTRACT

The Triple Aim framework is an increasingly popular tool for designing and assessing quality improvements in the health care sector. We systematically reviewed the empirical evidence on the application of the Triple Aim framework within primary healthcare settings since its inception almost a decade ago. Results show that primary healthcare providers varied in their interpretation of the Triple Aim framework and generally struggled with a lack of guidance and an absence of composite sets of measures for performance assessment. Greater clarity around application of the Triple Aim framework in primary healthcare is needed, especially around the selection and implementation of purposeful measures from locally available data. This review highlights areas for improvement and makes recommendations intended to guide future applications of the Triple Aim in the context of primary healthcare.

1. Introduction

Modern healthcare organisations are increasingly looking for innovative ways to redesign complex and dated systems in order to achieve effective, efficient and sustainable healthcare delivery [1–3]. There is a pressing need to balance rising costs of medical care with public expectations for delivery of high-quality care. In 2008, the Institute for Healthcare Improvement (IHI) introduced the Triple Aim framework, with the primary goal of "improving the experience of care; improving the health of population; and reducing per capita costs" [4], p. 760. The original intent was to provide a consolidated framework in order to guide systematic improvement initiatives associated with high quality healthcare services. Berwick et al. [4] stressed that a strategic change, focused on all three dimensions simultaneously, at a system level, was needed in order to deliver desired outcomes. The authors believed that gains achieved in one dimension should not be at the expense of another and argued that a balanced and concurrent pursuit of all Triple Aim dimensions would ensure equity and high-quality care delivery [4], p.760.

The importance of the Triple Aim was recognised and adopted as the means of addressing deficits in the healthcare delivery system in the USA [5], by providing a holistic multi-faceted approach. This followed the Affordable Care Act (labelled 'Obamacare') in 2010, and Triple Aim's subsequent adoption as the National Strategy for Quality Improvements in Healthcare [6,7]. Various other developed nations have embraced the principles of the Triple Aim and sought to apply them in healthcare redesign [8].

Since its inception almost a decade ago, the definition of the Triple Aim has remained consistent [9]. Within its individual dimensions, there have been significant refinements to the way in which this framework has been implemented and operationalized globally. In particular, the dimension "health of population" (referred to as population health hereafter) has been increasingly focused on improved health outcomes and equity of care; experience of care concentrated on clinical quality rather than patient satisfaction; and focus on higher efficiency and control of cost [9]. Organisations appear to have consistently modified the Triple Aim framework in order to fit their own strategic objectives and local priorities or fulfil specific quality improvement aims [10]. Further to this, some scholars identified that the original Triple Aim framework did not consider the experience of providers, advocating for inclusion of the critical role played by people tasked with deliv-

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https://doi.org/10.1016/j.healthpol.2018.06.006
0168-8510/

ery of care, and calling for the extension of the framework into a Quadruple Aim [11,12].

Previous attempts to operationalise the Triple Aim framework have proven challenging, despite IHI publishing an authoritative guide on an informed approach to Triple Aim framework implementation and measures selection [13]; and additional scholarly work on framework design and its operationalisation [14,15]. Most commonly, healthcare organisations have struggled with identifying, in practical terms, what initiatives to pursue and measure within the Triple Aim framework, which essential processes and evaluation tools to implement and track over time, which project and programs to invest in, and how to scale the framework to different levels of care provision [16,17].

Healthcare organisations need guidance to successfully structure their practice environments in order to deliver quality patient care [5,9]. However, little is known about the utility and the operationalisation of the Triple Aim framework, in particular the selection of guiding systems and specific measures that organisations used to deliver desired improvement initiatives.

This paper presents a systematic literature review on the operationalisation and application of the Triple Aim framework within the context of primary healthcare. The review answers the question: What is the evidence of the application of the Triple Aim within primary healthcare since its introduction in 2008? The aim was to investigate: 1) how was Triple Aim defined and operationalised in primary healthcare as primary improvement initiative and 2) how applicable is the Triple Aim within the primary healthcare system context. Addressing this aim allowed researchers to explore what is currently known about the Triple Aim framework as it has been reported within the primary healthcare context, draw conclusions on its usefulness, and consider what recommendations can be made for the future.

2. Method

The PRISMA statement guided this systematic literature review, by providing an outcome oriented methodological approach that is clear, transparent and reliable; a structured process that could be generalised and replicated in future studies [18].

2.1. Literature Review protocol

The review protocol was developed by the research team including Griffith University and Gold Coast Primary Health Network researchers located in a regional area of the Australian coast. Methods, aims and the scoping criteria were detailed in advance in order to capture the maximum number of published articles. Of particular interest were manuscripts that provided insights on the interpretation of the Triple Aim framework, its concept designs, selection of parameters and formation of the essential criteria for each of the dimensions (e.g. how was population health defined and measured, what types of indicators were selected and why, and which types of data sets were collected).

2.2. Eligibility criteria

2.2.1. Types of studies

Studies detailing implementation of the Triple Aim within the primary healthcare setting and articles discussing conceptualisation and application of the Triple Aim framework were included. No date limit was applied.

2.2.2. Type of interventions

Eligible papers had to describe the practical application of the Triple Aim in the primary healthcare context, including references to specific measures and indicators selected for the Triple Aim dimensions. This distinction was needed because numerous manuscripts made in-text reference to the overarching governance of the Triple Aim in their recommendations for system redesign, but provided little or no information on the actual framework or measures themselves.

The review process undertaken to narrow the search included early screening of the titles, abstracts and key words. In the instances where the use of the Triple Aim could not be determined from the abstract, a brief scan of the manuscript was undertaken to ascertain suitability. Most commonly this was the case with North American papers where the Triple Aim was adopted as part of a national health strategy and referred to often.

2.2.3. Studies published in English

Only work published in the English language was eligible for inclusion. While the review considered the Triple Aim framework application on an international level, there was no capacity to analyse texts in other languages.

2.3. Search strategy

Four electronic databases were searched: Medline (Ovid); Embase; Cinahl; and Healthcare Management Database (Proquest). A team of health sciences librarians were consulted in the search process, identification of suitable key words and the appropriate database selection. Final search terms were approved by the principal investigators. The search ran from 29 May 2017, with last update being completed on 12 June 2017. All identified articles were exported to EndNote for categorisation. To complement the search strategy, the reference lists in the identified papers were reviewed in order to identify other suitable articles.

The initial search was performed in the Medline(Ovid) database using the term 'triple aim' and pairing it with phrases such as 'primary healthcare', 'measures', 'value based' or 'trade-offs' in order to identify potentially suitable studies (See Appendix A for full search items list). Such terms were considered broad, yet sufficient enough to allow for consideration of the Triple Aim Framework's application in the primary care by means of suitable measures. Moreover, all three dimensions of the Triple Aim, namely 'population health', 'experience of care' and 'per capita cost' were also used in the search process to identify articles discussing the frameworks components but not explicitly mentioning Triple Aim. The search was open to terms appearing anywhere in the abstract, title or full text. Embase, Cinahl and Healthcare Management Database (Proquest) databases were searched next in order to yield further papers. All identified papers were exported to EndNote for further consideration.

2.4. Study selection

In order to minimise individual bias, the principal study investigator oversaw the article selection process where article screening was performed by one researcher and nominated articles were subsequently reviewed by two other research members.

Following the title and abstract screening, text manuscripts that met the selection criteria for full assessment were analysed. A brief statement was produced for each paper on the rationale for its inclusion or exclusion (see Appendix B). All papers presenting the Triple Aim implementation and listing the specific framework measures (summarised in Appendix C) were included. Identified measures were categorised according to their alignment with the Triple Aim dimensions, applying a framework proposed by Stiefel and Nolan [13] (see Appendix C). The sample size and scientific quality of the articles was not evaluated, because the primary interest of the review was to explore how the Triple Aim framework was applied, therefore all eligible studies were considered as equally important.

Please cite this article in press as: Obucina M, et al. The application of triple aim framework in the context of primary healthcare: A systematic literature review. Health Policy (2018), https://doi.org/10.1016/j.healthpol.2018.06.006