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**ADMINISTRATIVE INFORMATION****Support** - NA.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202470013**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 July 2024 and was last updated on 05 July 2024.**INTRODUCTION**

**Review question / Objective** This review aims to synthesise existing evidence on health workforce planning models and their applicability to the WHO Eastern Mediterranean Region countries, focusing on aspects such as workforce supply, demand and needs forecasting, training, and retention strategies specifically for the care of older adults to enhance financial sustainability in healthcare systems.

**Rationale** Health workforce planning is ensuring the underlying healthcare system has the right people in the right place with the right skills and at the right time (Dal Poz et al, 2010). Health workforce planning ensures that health systems have the necessary human resources to provide timely care for all people, including older adults. Due to the ongoing demographic transition, countries in the WHO Eastern Middle Eastern Region are facing increasing strain on health resources including a serious shortage of healthcare workers (Halsall & Cook, 2017).

Countries such as Saudi Arabia, Oman, Qatar, UAE and Kuwait are facing an increasing demand for nursing and medical professionals, especially in the areas of need location such as the public sector and rural and remote areas. Due to these workforce shortages, quality care provision to older adults has been an issue of increasing importance in this area (World Health Organization, 2016).

Health workforce modelling is vital for quality health service provision and towards understanding the supply, demand and needs, and crucial towards planning decisions to meet shortages and improve the efficiency and cost-effectiveness of health systems (Balasubramanian et al, 2021). In health workforce models, cost-effectiveness is important to maximising health outcomes by optimising resource allocation. It is especially important in resource-constrained settings to identify those models that can reduce unnecessary expenditures while preserving or improving service quality (Vaughan et al., 2015). An effective healthcare system should promote high-

quality care, control unnecessary utilisation, and integrate and coordinate the workforce to ensure sustainability and efficiency (AlRuthia, Bin Aydan, Alorf, & Asiri, 2020).

A number of studies have proposed innovative solutions and examined the challenges towards addressing health workforce integration and shortages. For example, Balasubramaniam et al (2019), call for increasing interdependence among doctors, nurses, dentists and allied health professionals to improve care delivery and thereby reduce workforce shortages, as well as create new roles and opportunities for workforce collaboration. Interdisciplinary care and teamwork is vital towards improving quality, and also in some way alleviating health workforce shortages (Balasubramanian & Short, 2021). Health workforce, planning and financial experts emphasise the need for government intervention and rational planning to ensure that scarce health resources are reasonably allocated, rather than relying on market mechanisms (Stanton, 2002).

There are also a range of studies that examine the impact of regulatory intervention on patient safety or quality of care. To use of a standards framework in evaluating governance arrangements can improve the comparison of workforce regulation, as well as provide a basis for analysis of workforce distribution and cost-effectiveness to enhance understanding of how effective health systems are regulated (Leslie et al., 2023).

Approximately 60 to 80 per cent of health sector budgets are devoted to the health workforce in the WHO Eastern Mediterranean countries. Using these funds effectively plays a crucial role in maintaining and improving the quality and efficiency of the health workforce (Zurn et al., 2004). Furthermore, healthcare workforce migration significantly impacts health professional distribution. Understanding the needs and better integration of migrant health professionals is vital, as identified in several studies (Balasubramanian et al, 2015). Policy incentives play a crucial role in improving the supply of healthcare professionals locally and managing migration (Dussault & Franceschini, 2006).

**Condition being studied** There are a range of supply, demand and need based factors that influence health workforce planning and should be considered for better health service provision for older adults in the middle eastern region countries. The purpose of this review is to examine various health workforce planning models on the delivery of care for older adults, with specific reference to

the WHO Eastern Mediterranean region countries. Being as part of a larger study, this review will help us determine how we can accommodate more innovative health workforce models for older adults in the region.

## METHODS

**Search strategy** The following databases will be used for the literature search: Medline, Embase, Scopus, CINAHL, JBI, PubMed and Cochrane. As part of the complete search strategy, the main keywords included are: "health workforce planning", "WHO Eastern Mediterranean Region", "older adults" and "healthcare models". Synonyms and alternative words for these key search terms are developed with assistance from the Flinders University Librarian. An example search strategy for Medline via OVID has been designed and tested.

**Participant or population** The population for this study is older adults who are 60 years and above, and require services in relation to home, community or hospital-based settings.

**Intervention** Phenomenon of Interest (I): Studies involving healthcare professionals in the health sector of the WHO Eastern Mediterranean Region, focus on health workforce planning models for older adults. The studies should address supply, demand, forecasting, projections and financial sustainability in healthcare systems.

**Comparator** Context (Co): Healthcare settings within the 21 WHO Eastern Mediterranean Region countries including Afghanistan, Bahrain, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Occupied Palestinian Territory, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen.

**Study designs to be included** Original research articles including quantitative, qualitative and mixed method studies will be included. Reviews, commentaries, editorials and grey literature will be excluded.

**Eligibility criteria** Studies that provide information on health workforce planning models and strategies and interventions relevant to elder care in the WHO Eastern Mediterranean Region healthcare systems will be reviewed in this review. The review process excludes case reports, opinion pieces, and study protocols published in languages other than English.

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**Information sources** Medline, Embase, Scopus, CINAHL and Web of Science.

**Main outcome(s)** A review will examine various health workforce planning models for older adults in the WHO Middle Eastern Region.

**Additional outcome(s)** NA.

**Data management** Endnote will be used to store the data for the review. Covidence systematic review software will be used for screening, full text review and data extraction.

**Quality assessment / Risk of bias analysis** To ensure that systematic reviews screening is reliable, two reviewers will be included in the title abstract screening and full text screening process. Quality assessment will be done based on the JBI criteria for quality assessment.

**Strategy of data synthesis** To guide data synthesis, a table of data extraction will be prepared. Using convergent mixed methods, we will integrate quantitative and qualitative data to answer the review questions.

**Subgroup analysis** NA.

**Sensitivity analysis** NA.

**Country(ies) involved** Australia; Saudi Arabia.

**Keywords** Health workforce; health systems; planning; WHO Eastern Mediterranean Region; older adults; healthcare models, systematic review.

**Dissemination plans** The study is planned for publication in Q1 journals following completion. The findings will also be presented in public health or health service conferences in Australia and Saudi Arabia.

#### **Contributions of each author**

Author 1 - Salim Alshehri - Salim Alshehri is a PhD candidate at Flinders University. This review is part of his PhD work, and he is the lead author. Salim Alshehri wrote the first draft of the proposal, which was revised by all authors. He also drafted the search strategy and protocol in consultation with supervisor.

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Author 2 - Lucy Simmonds - Dr Lucy Simmonds supervised this work of the PhD candidate, Dr Salim Alshehri. She contributed to the design and development of the protocol and revision of the drafts.

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Author 3 - Madhan Balasubramanian - Dr Madhan Balasubramanian supervised this work of the PhD Candidate, Salim Alshehri. He contributed to the design and development of the protocol and revision of the drafts.

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