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Effects of Hospital Planning on Quality, Costs, Efficiency, and Access in OECD Countries: A Protocol for a Systematic Review

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Data extraction.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 November 2025 and was last updated on 12 November 2025.

INTRODUCTION

Review question / Objective The planned systematic review aims to comprehensively synthesize the available evidence on the effects of hospital (capacity) planning across OECD countries on four outcome dimensions: quality of care, healthcare costs, efficiency of service delivery, and access to care. The review specifically examines two aspects: the introduction of hospital planning systems and changes to existing hospital planning regulations or approaches. The focus is on acute somatic services performed in an inpatient setting. Services performed in an outpatient setting or characterized as rehabilitation or psychiatry are not included in the review. The latter are only considered if planned together with acute somatic care. By systematically evaluating the literature, the review seeks to provide policymakers and health system stakeholders with robust evidence to inform future hospital planning decisions and reform strategies.

Rationale Health systems across OECD countries face increasing pressure from aging populations, rising prevalence of chronic diseases and concurrent multimorbidity, healthcare expenditure increases that surpass economic growth, and workforce shortages (OECD, 2019; WHO, 2022). Hospital planning serves as a tool to organize and oversee inpatient services and their distribution among hospitals, encompassing hospital capacities and service profiles (Paris et al., 2010). Hospital planning reforms can vary from minor adjustments to major reorganizations of the hospital sector.

Although hospital planning has been implemented in various countries for decades, evidence on its effectiveness remains limited, often controversial, and highly dependent on specific country or health system contexts. Existing studies show heterogeneous results, which complicates generalisation and makes it difficult to draw robust conclusions about whether planning achieves its intended goals of improving quality, controlling costs, enhancing efficiency, or ensuring access

(Tchouakét et al., 2012). Current literature consists primarily of theoretical discussions (Burdett et al., 2018) or isolated single-country evaluations, without systematic empirical analysis across different contexts (Christiansen, 2012).
The planned review aims to address this gap by systematically collecting and synthesizing available evidence, with particular attention to the contextual factors – such as health system characteristics, country settings, and outcomes – that may shape the effects of planning reforms. Identifying these contextual determinants represents an additional objective of the review. Focusing on OECD countries ensures comparability given their similar economic development levels, established healthcare infrastructures, and reliable data systems, while capturing diverse approaches to hospital planning across different health system types (Joumard et al., 2010).

Condition being studied The planned review examines hospital planning reforms as a health system intervention across OECD countries. Hospital planning refers to regulatory frameworks that govern the organization and distribution of inpatient services.

METHODS

Search strategy The literature search is conducted independently by two researchers (CS and DB). Discrepancies will be resolved through discussion and, if needed, involvement of a third researcher (MB). Electronic databases will include PubMed and Web of Science.
The search strategy employs a comprehensive approach combining four conceptual domains using Boolean operators. The first domain captures the hospital setting using terms including hospital and inpatient. The second domain identifies hospital planning through an extensive list of terms encompassing hospital planning. The third domain ensures capture of relevant healthcare outcomes across all four primary outcome categories: quality, cost, efficiency and access. The fourth domain restricts results to OECD countries through a comprehensive list of all 38 member nations and their demonyms, supplemented with regional terms for Europe to capture multi-country studies. Temporal limits restrict results to publications from 2000 onward, reflecting the modern era of hospital planning reform implementation.

Participant or population This review focuses on OECD member countries and their health systems as the unit of analysis. Studies examining hospital planning impacts at national, regional, or local levels within OECD countries are included.

Intervention The review investigates hospital planning as a regulatory intervention, specifically focusing on two scenarios: first, the introduction of hospital planning, and second, modifications to existing hospital planning systems. Studies focusing on at least one of these scenarios are considered.

Comparator Comparators include periods before the introduction of hospital planning reforms or the same systems before and after planning changes.

Study designs to be included Our literature review is not bound to a specific research design, we will include studies with research designs that are used to investigate the above intervention types (i.e. experimental, quasi-experimental, observational and modelling studies) and exclude qualitative studies such as protocols, case reports, systematic reviews and meta-analyses. Conference abstracts will be included only if they provide sufficient methodological and outcome information. Editorials, commentaries, and studies lacking measurable outcomes will be excluded.

Eligibility criteria Studies must report empirical data on at least one of the primary outcome domains – quality, costs, efficiency and access – across the OECD countries and be published in English or German within the past twenty-five years.

Information sources Systematic searches will be conducted in major electronic databases, namely PubMed and Web of Science.

Main outcome(s) Quality outcomes are identified through terms including mortality, readmission and its variants, patient safety, patient-reported outcomes and their abbreviations, and quality-adjusted life years. Economic efficiency includes cost and hospital cost efficiency. Efficiency measures are captured through length of stay, productivity, efficiency, and economies of scale and scope. Access outcomes are identified through travel times and waiting.

Data management Ther researchers will use the data management platform Rayyan in the first review phase for screening articles based on titles, abstracts, and criteria. Data extraction for analysis and synthesis will be done using an Excel.

Quality assessment / Risk of bias analysis Observational studies will be evaluated with the

ROBINSI instrument. The two reviewers will independently undertake risk of bias assessments, with disagreements resolved through consensus or adjudication by a third reviewer.

Strategy of data synthesis Given the anticipated heterogeneity of study designs and outcome measures, a narrative synthesis framework will be applied. Findings will be structured by outcome domain, with tabulated summaries of key study attributes and effect estimates.

Subgroup analysis Subgroup analyses will explore variations in intervention effects by countries, type of hospital planning reform, and setting (regional or national).

Sensitivity analysis In the case of high heterogeneity, a sensitivity analysis is performed to understand whether the pooled effect size is strongly influenced by an individual study. For this, the pooled effect size is recalculated by excluding one study at a time.

Language restriction Only English and German.

Country(ies) involved Researchers are based in Switzerland .Schweiz.

Keywords Hospital Planning, Hospital Capacity Planning, Health Care Reforms, Centralization, Quality of Care, Costs of Care, Efficiency in Health Service Delivery.

Contributions of each author

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