Systematic Reviews

PROTOCOL

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Barriers and facilitators to using feedback from clinical quality registries: a scoping review protocol

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Abstract

Background A clinical quality registry (CQR) is a structured database that systematically collects data to monitor clinical quality and improve healthcare outcomes. The aims of CQRs are to improve treatment plans, assist in decision-making, increase healthcare value, enhance care quality, and reduce healthcare costs by providing feedback to healthcare providers. Feedback to clinicians is used as a quality improvement tool. It provides data to clinicians about their performance, which may contribute to improvement in healthcare outcomes. To the best of our knowledge, previous research on CQRs has primarily focused on factors affecting their use and their impact on healthcare outcomes. In this study, a scoping review is conducted to understand the barriers to and facilitators of using feedback systems from clinical quality registries in acute healthcare settings.

Methods For this review, Arksey and O'Malley's framework for scoping reviews will be applied. The following electronic databases (MEDLINE via Ovid, CINAHL, and Scopus) and grey literature (Google Scholar) will be systematically searched for qualitative and mixed-method studies (only including qualitative findings) published after 2000 in the English language. Two reviewers will independently screen the articles and extract the data which, subsequently, will be mapped against the COM-B model.

Discussion This review is conducted with the aim of providing valuable insights into the factors that influence the utilisation of feedback from Clinical Quality Registries by healthcare providers, which, in the context of quality improvement, may have significant implications for clinical research, registry science, health policy, and clinical practice.

Scoping review registration This protocol has been registered prospectively with the Open Science Framework (OSF) (https://osf.io/fhm4n/).

Keywords Clinical quality registry, Feedback system, Barriers and facilitators, Registry science, Implementation science

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Background

A clinical quality registry (CQR) is a structured database that methodically gathers information to enhance healthcare outcomes [1]. CQR is a clinical registry subgroup defined by the Australian Registry of Clinical Registries as 'organisations that systematically monitor the quality (appropriateness and effectiveness) of health care, within specific clinical domains, by routinely collecting, analysing and reporting health-related information' [2].

CQRs offer observational insights into trends in performance, quality indicator benchmarking, changes in practice, and outcomes over time that routine care might not be able to detect [3]. Moreover, CQRs are intended to improve treatment plans, assist in decision-making, increase healthcare value, enhance the quality of care and patient outcomes, and minimise healthcare costs.

The primary objective of CQRs is to deliver feedback, which is a crucial component of healthcare evaluation [4]. In the past two decades, three Cochrane reviews [5–7] have underscored the importance of using feedback as a means of significantly improving healthcare performance. The data provided by CQRs pertains to the appropriateness of healthcare services, as well as their effectiveness, as measured by the extent to which they benefit patients [4]. The feedback provided often consists of risk-adjusted reports that evaluate the effectiveness and appropriateness of care in order to determine the level of compliance with best practice guidelines. A step critical to achieving this objective is to optimise the registry feedback loop (Fig. 1). This loop involves healthcare providers recording data, transferring it to the registry, reporting benchmarks and outliers, improving clinical care, and conveying feedback to healthcare providers [8].

CQRs are essential to providing transformative feedback for healthcare improvement. However, understanding the enablers and barriers that influence their effectiveness remains challenging [9]. To date, studies and reviews provide only a broad view of the enablers and barriers. The literature reveals common barriers and facilitators in using CQR for quality improvement in various contexts. For instance, Rosenkrantz et al. [10] examined data gathered from twenty-two participants and identified key factors affecting the development of a trauma registry. They found that funding, staffing, and stakeholder engagement were key barriers to trauma registry implementation. Similarly, a systematic review by Lazem and Sheikhtaheri [11] examined the adoption of registries and revealed over 90 barriers and 80 facilitators categorised into seven areas: (1) management, (2) data management, (3) collaboration, (4) technology infrastructure, (5) patient involvement, (6) legal factors, and (7) disease-related issues.
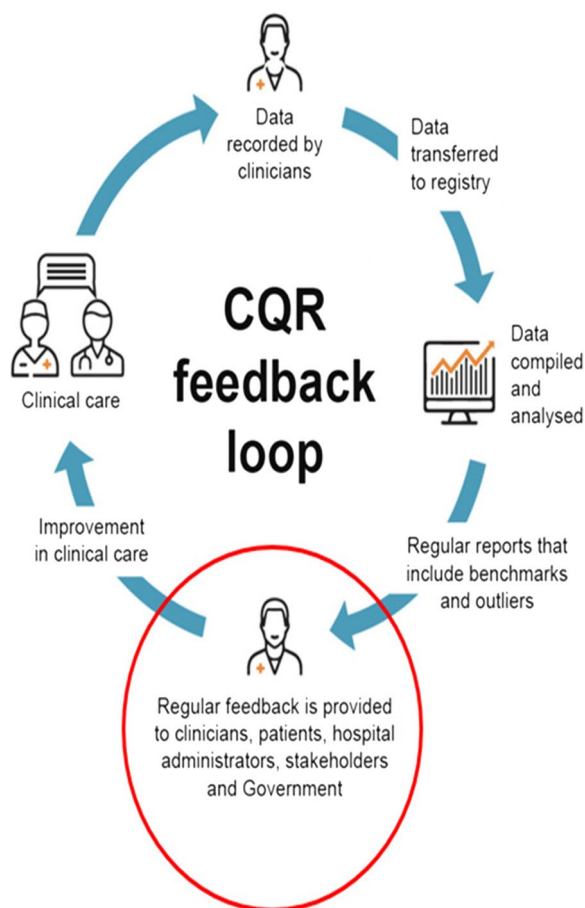

Fig. 1 The cyclical process of a Clinical Quality Registry. Adapted with copyright permission from The Australia New Zealand Trauma Registry adapted from the Australian Commission on Quality and Safety

Because the aim of CQRs is to provide feedback to healthcare providers regarding their practice and care outcomes, it is essential that all the barriers and enablers be considered in order to acquire a more comprehensive understanding of the factors affecting the optimal use of CQRs. Numerous studies have found that when healthcare providers receive feedback, their behaviours are altered, and care outcomes are improved [11–13]. Therefore, understanding and addressing these barriers and facilitators are essential for successfully integrating feedback systems from CQRs into routine healthcare practices.

Implementing changes in clinical practice requires altering the behaviour of clinicians, which is best achieved through a theoretical understanding of behaviour change theory. The Capability, Opportunity, Motivation, Behaviour (COM-B) model provides a framework for understanding and influencing clinicians' behaviours [14, 15]. According to COM-B,

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behaviour is the result of interactions between three components: capability, opportunity, and motivation [14]. Clinicians' capability involves both psychological aspects, such as their knowledge of medical procedures, and physical aspects, such as their skills. Opportunity includes both social influences, such as the norms and expectations within a healthcare setting, and physical resources, such as access to necessary tools and technology. Motivation encompasses automatic processes like emotions and reflective processes, including beliefs and intentions. The application of COM-B in this review facilitates a comprehensive understanding of the factors that influence the utilisation of feedback from a broader perspective, encompassing all relevant aspects. The COM-B framework enables the mapping of review themes and the development of effective strategies to address the barriers and improve the facilitators associated with each component.

Methods
Aim and objectives
The aim of this review is to understand the barriers and enablers experienced by healthcare professionals and organisations in using feedback from CQRs to inform clinical practice and improve patient outcomes.

The objectives of this review are:

1. To systematically identify and review the barriers that impede the utilisation of feedback from CQRs in healthcare settings
2. To analyse and categorise the enablers that facilitate the effective use of feedback from CQRs in improving clinical practice and patient outcomes

3. To apply the COM-B model to classify the barriers and enablers, providing a structured understanding of the factors influencing feedback use

Protocol development
This review will apply Arksey and O'Malley's framework for scoping reviews [16]. This framework contains five steps: (1) research question identification, (2) relevant studies identification, (3) studies selection, (4) data charting, and (5) data collating and summarising [16]. The structure of this review will follow the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (PRISMA-ScR) checklist [17]. This protocol has been registered prospectively with the Open Science Framework (OSF) DOI https://doi.org/10.17605/OSF.IO/FHM4N [18].

Step 1: Formulating the research question
The question was formulated according to the population or problem, the phenomena of interest, and the context (PICo) mnemonic (see Table 1). The PICo mnemonic is utilised to develop a well-defined and significant question and can be used to frame and organise the search strategy [19].

Step 2: Identifying relevant studies
The following electronic databases will be searched for relevant studies: MEDLINE via Ovid, CINAHL, and Scopus. Table 2 presents the terms used in the search strategy. The search will be limited to articles published between 2000 and 2024 to find the most up-to-date primary research studies. These databases have been selected because their concepts are relevant to the nursing, health, and medical fields [20]. The references in the

Table 1 PICo mnemonic

Population (P)	Phenomena of interest (I)	Context (Co)
Healthcare providers use clinical quality registry in a healthcare setting	Barriers and facilitators using feedback systems	Clinical quality registries

Abbreviations: *PICo* population phenomena of interest context

Table 2 Search terms and keywords

Concept 1 (registries)	Concept 2 (feedback)	Concept 3 (implementation)	Concept 4 (barriers and facilitators)	Concept 5 (health service)
Clinical audit (MeSH) Benchmark* Clinical registr* "Clinical quality registr"	Report "Audit and feedback" Dashboard	Implement* develop* fulfill* advance* improv* progress* establish* design*	"barrier* and facilitator*" Barrier* Facilitator* Enabler* Challeng* engag* disincent* incent*	Health care Healthcare Hospital Health service* Health facility*

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selected articles will be manually searched to ensure that relevant additional literature is identified. The grey literature (Google Scholar) will also be searched to ensure that all relevant data has been captured (only the first 10 pages will be searched). A health services librarian (RL) assisted in developing the search strategies which incorporated keywords related to the topic of interest. These strategies were based on the specific descriptors used by each database including index terms, Boolean operators, and truncation.

Phase 3: Study selection

Eligibility criteria

After searching the relevant databases, the retrieved articles (including abstracts) will be downloaded to an Endnote library and then imported to Covidence [21] where duplicates were removed, and titles/abstracts and full-text articles will be screened. The articles will be selected according to the following eligibility criteria:

Inclusion:

- Hospital-based clinical quality registries
- Studies that investigated the barriers and enablers of using feedback systems of CQR
- Qualitative studies
- Mixed method studies (only qualitative components will be included)
- English language

Exclusion:

- Other registries such as animal-based registries, primary registries, and device-related registries
- Hospital audits
- Quantitative studies, longitudinal or cohort studies
- Reviews, commentaries, and editorials
- Studies that investigated other CQR outcomes such as the impact on patients' outcomes
- Published prior 2000 to find the most up-to-date and contemporary primary research studies
- Scientific conference abstracts

Two independent reviewers will examine the titles and abstracts (HA, SA, and JM). Full-text articles will be downloaded and reviewed by the same reviewers, independently. Any conflicts will be resolved by a third reviewer (CF). The study selection workflow will be summarised in a PRISMA flowchart (Fig. 2).

Phase 4: Charting data

A data extraction form will be developed in Covidence [21] to chart the data. Charting involves examining, organising, and categorising materials according to their defining characteristics [16]. Table 3 provides the following details: author name and publication year, the aim of the study, country, study design, methodology, number of participants, roles, type of registry, feedback mechanism, frequency of providing feedback, factors affecting use of feedback (barriers, enablers, and strategies to overcome the barriers). Each reviewer will extract the data independently and compared it at the end to resolve discrepancies and reach a consensus on data selection. The data was assessed using the Joanna Briggs Institute (JBI) [22] critical appraisal tool for qualitative studies and the five-step mixed-method appraisal tool for mixed-method studies [23] developed in Covidence [21].

Phase 5: Collating, summarising, and mapping the evidence

The extracted data will be mapped deductively against a previously selected conceptual framework [15], and a coding framework will be created. Researchers will hold a consensus meeting to discuss the coding and resolve disagreements. The analysed data will be presented in a table and a diagrammatic form that is aligned with the objectives of this scoping review. Specifically, a sunburst visualisation will be utilised to represent the hierarchical structure of factors identified in the studies. The sunburst chart will illustrate the distribution of barriers and enablers across the three main COM-B components (Capability, Opportunity, and Motivation) and their subcategories. Each layer of the sunburst chart will represent a different level of the evidence hierarchy: the innermost layer will show the three COM-B components (Capability, Opportunity, and Motivation). The second layer will detail the subcategories within each COM-B component (e.g. physical capability, social opportunity, reflective motivation). The outermost layer will display the specific barriers and enablers identified in the studies, linked to their respective COM-B categories.

This visualisation will provide an intuitive overview of the evidence, allowing for the identification of areas with a high concentration of evidence and gaps in the literature.

Assessment of methodological quality

The data will be assessed using the Joanna Briggs Institute (JBI) [20] critical appraisal tool for qualitative studies and the five-step mixed-method appraisal tool for mixed-method studies [21] developed in Covidence [19]. Researchers decided to do a quality assessment for the papers included to improve the quality of the results and avoid any bias. Researchers will contact study authors to obtain any missing or extra data for clarification. Any disagreements among the reviewers will be resolved through discussion or with the assistance of a third reviewer. The
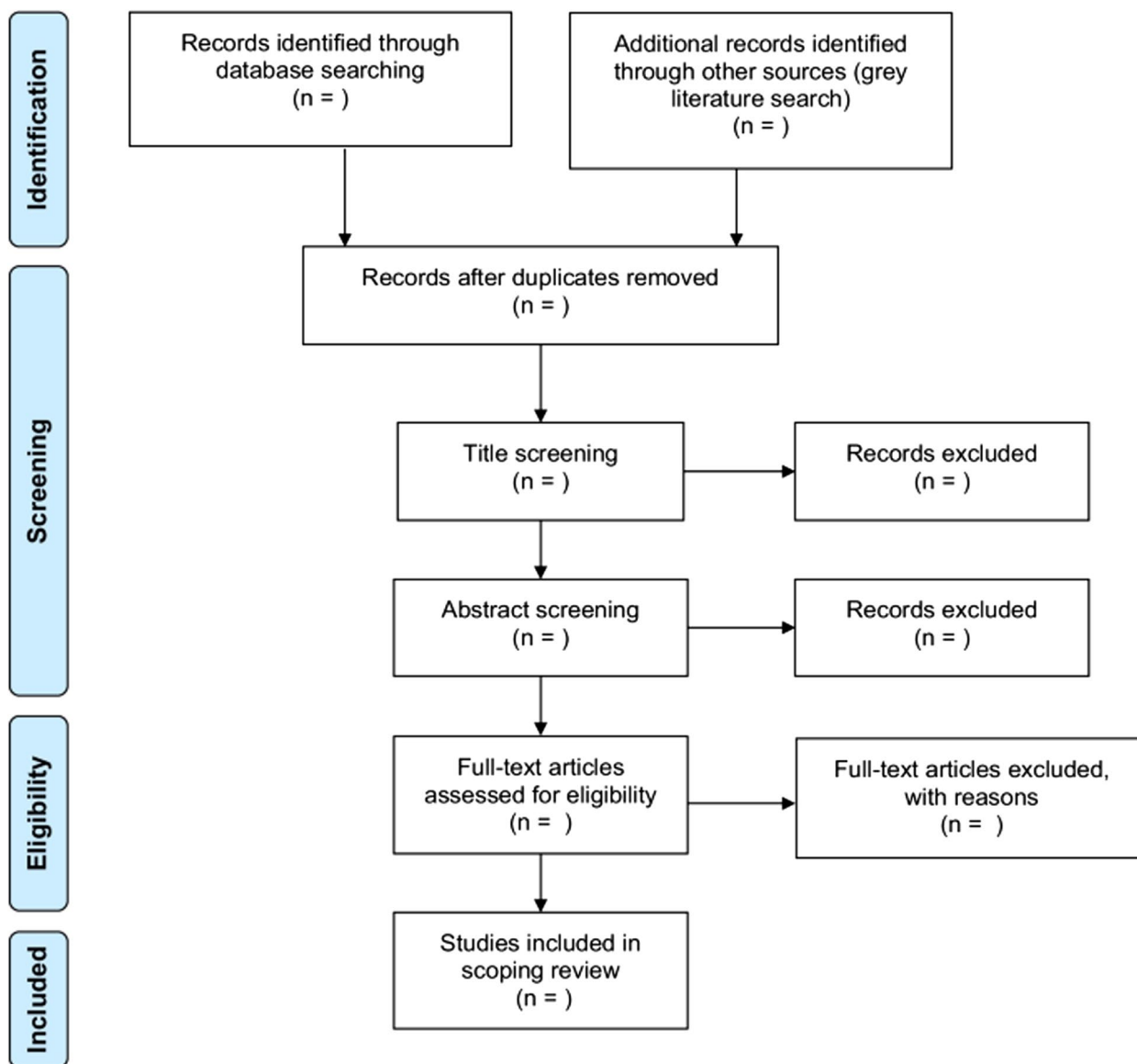
Fig. 2 PRISMA flowchart for study selection

critical appraisal findings will be presented as an additional file. All studies, regardless of their methodological quality, will undergo data extraction and synthesis whenever feasible [20].

Discussion

The proposed scoping review will have implications for clinical research, registry science, health policy, and clinical practice. Firstly, the review's findings may provide valuable insights to enhance the use of feedback from CQRs in clinical practice. As Workman [24] highlights, feedback to healthcare providers is critical to modifying clinical behaviours, thereby directly impacting healthcare outcomes. This review will extend beyond theoretical implications by offering stakeholders practical insights into refining the operational aspects of CQR feedback systems. By understanding the barriers and facilitators associated with using CQR feedback, stakeholders are better positioned to implement effective strategies such as comprehensive training programs for healthcare providers or quality improvement activities (such as PDSA cycles). These programs would impart the necessary skills and knowledge required for the effective utilisation of CQR feedback and support the allocation of resources to enhance facilitators.

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Table 3 Data charting

Author and year
Aim
Countries
Study design
Methodology
Number of participants
Role
Registry type
Feedback mechanism
Core components
Frequency of providing feedback
Factors

The dissemination and operationalisation of these findings will involve various end-users of clinical quality registries, including registry custodians, clinicians, policymakers and health executives. To ensure widespread reach and impact, the review will be disseminated to all custodians of Australian Clinical Quality Registries, as listed on the Australian Commission on Quality and Safety website, presented at relevant conferences and published findings in peer-reviewed journals. This multifaceted dissemination strategy is designed to share the outcomes, encourage regular discussions, and improve the accessibility and practical application of CQRs in the healthcare sector.

In this review, a comprehensive examination will be undertaken of the factors that either hinder or facilitate the use of feedback systems from CQRs. It will adhere to the Arksey and O'Malley's framework for scoping reviews ensuring rigour in collecting, analysing, and presenting data. The adoption of the COM-B adds depth to the analysis. COM-B is a well-recognised framework in behavioural change science, and its use ensures that multiple levels of context are considered when influencing the implementation of interventions. By focusing on qualitative studies, this review aims to accurately capture the experiences and perspectives of healthcare providers. This approach offers in-depth insights into the facilitators and barriers to using feedback from CQRs. Moreover, this review will consider peer-reviewed articles and grey literature to capture available evidence on the topic comprehensively. However, audits will be excluded. This review only includes articles published in English, which may introduce a language bias by excluding relevant studies published in other languages. As with most literature reviews, there is a potential for publication bias. Studies with significant or positive findings are more likely to be published, potentially skewing the results.

Conclusions

The aim of this scoping review is to address the knowledge gap regarding the use of feedback from CQRs in acute healthcare settings. By systematically mapping the barriers and facilitators through a comprehensive review of qualitative and mixed-method studies, we anticipate that this study will provide actionable insights that can significantly improve the effectiveness of CQRs. Moreover, the findings may inform future research, policy-making, and clinical practices, ultimately contributing to improved healthcare outcomes.

Declarations

Ethics approval and consent to participate
Ethics approval is not required for this study.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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