



BMJ Open Impact of remuneration, extrinsic and intrinsic incentives on interprofessional primary care teams: protocol for a rapid scoping review

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ABSTRACT

Introduction Interprofessional teams and funding and payment provider arrangements are key attributes of high-performing primary care. Several Canadian jurisdictions have introduced team-based models with different payment models. Despite these investments, the evidence of impact is mixed. This has raised questions about whether team-based primary care models are being implemented to facilitate team collaboration and effectiveness. Thus, we present a protocol for a rapid scoping review to systematically map, synthesise and summarise the existing literature on the impact of provider remuneration mechanisms and extrinsic and intrinsic incentives in team-based primary care. This review will answer three research questions: (1) What is the impact of provider remuneration models on team, patient, provider and system outcomes in primary care?; (2) What extrinsic and intrinsic incentives have been used in interprofessional primary care teams?; and (3) What is the impact of extrinsic and intrinsic team-based incentives on team, patient, provider and system outcomes?

Methods and analysis We will conduct a rapid scoping review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for scoping reviews guidelines. We will search electronic databases (Medline, Embase, CINAHL, PsycINFO, EconLit) and grey literature sources (Google Scholar, Google). This review will consider all empirical studies and full-text English-language articles published between 2000 and 2022. Reviewers will independently perform the literature search, data extraction and synthesis of included studies. The Mixed Methods Appraisal Tool will be used to appraise the quality of evidence. The literature will be synthesised, summarised and mapped to themes that answer the research question of this review.

Ethics and dissemination Ethics approval is not required. Findings from this study will be written for publication in an open-access peer-review journal and presented at national and international conferences. Knowledge users are part of the research team and will assist with disseminating findings to the public, clinicians, funders and professional associations.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This protocol is strengthened by the feedback provided by a range of primary care stakeholders who will be involved throughout the review.
- ⇒ This protocol was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols.
- ⇒ The results of this study will help inform future payment interventions and identify future research directions.
- ⇒ The limitation of this review is the potential to miss relevant studies due to the exclusion of non-English language studies.
- ⇒ This rapid scoping review will not assess the risk of bias of included studies.

INTRODUCTION

High-performing primary care is widely recognised as the foundation of an effective and efficient healthcare system.¹ Interprofessional teams and funding and payment provider arrangements are key attributes of high-performing primary care systems.¹ Teams are a group of professionals from two or more disciplines that work interdependently to deliver patient care over a reasonable period.²⁻⁴ In Canada, several jurisdictions have introduced team-based models, which vary significantly in terms of their structure, remuneration scheme, the types of primary care providers, governance mechanisms, enrolment of patients, the scope of services, the nature of the population being served and the adoption of a population-based approach to planning and delivering care.¹ Despite these investments, the evidence of their impact is mixed or limited. In Alberta, primary care networks (PCNs) show variable results.⁵ One study suggests PCNs reduce emergency department visits,⁶ while another found PCNs were associated with declines in ongoing care, coordination



of care, comprehensiveness, family-centredness, community orientation and cultural competence.⁷ In Quebec, in family medicine groups (FMGs), the results are mixed for the use of services, equity, access and comprehensiveness.^{8–15} In addition, FMGs have not changed screening rates for chronic conditions¹⁶ and access to after-hours care.⁸ In Ontario, Family Health Teams (FHTs) have been shown to enrol healthier populations.¹⁷ FHTs are associated with more timely access to care and lower use of walk-in clinics but not with the use of after-hours care and emergency departments or hospital admissions and readmissions.^{18–20} Despite the positive impact of primary care teams on patient outcomes, patient satisfaction and care coordination,^{21–25} the findings raise questions about whether team-based primary care models are being implemented in a manner that facilitates success in achieving outcomes of the health system and patient care outcomes.

In Canada, interprofessional team models differ in the types of providers that lead teams (family physicians or nurse practitioners) and the types of remuneration models for physicians (ie, fee for service (FFS), capitation/FFS, salary) and non-physician providers (ie, salary or contract) and rewards (ie, pay for performance incentives)²² In some physician-led models, physicians are paid through FFS remuneration models (paid per service). This creates a disincentive to refer patients to non-physician providers and can reduce team collaboration. Blended capitation payment arrangements for physicians combine capitation (payment per patient per month) or salary with FFS payments and/or pay for performance incentives.²² Although capitation and salary models reduce competition between providers for patients, pay for performance payments to physicians to meet performance targets that may include the contributions of other providers can lower the morale of non-physician providers and team collaboration.²⁶ In nurse practitioner-led clinics, nurse practitioners and interprofessional providers are salaried and consulting physicians are paid through sessional payments.^{2 27} To date, there is limited information on the impact of various provider remuneration payment models on team collaboration and effectiveness.

Extrinsic and intrinsic incentives are mechanisms used by funders and organisations to motivate healthcare professionals to improve their performance.²⁸ Extrinsic incentives include tangible rewards such as pay rise, bonuses, paid leave, annual recreational plans and professional development.²⁸ Extrinsic incentives are within the direct control of the workplace and act to prevent job dissatisfaction.²⁸ Intrinsic incentives come from within the individual and contribute to job satisfaction.²⁹ Examples include autonomy, challenge and responsibility, the opportunity for advancement, perceived significance of the work and personal satisfaction.^{28–31} Several studies have examined the impact of individual and group extrinsic incentives on primary care physicians' behaviour and, thereby, the care system's performance.^{17 32–37} Team-based incentives improved process

outcomes in healthcare organisations.^{38 39} A team-based incentive can link payments to the achievement of team performance goals.^{40 41} A meta-analysis found team incentives increased team performance.⁴² Equitably distributed team rewards resulted in higher performance.⁴² Intrinsic incentives improved coordination, teamwork, health behaviours and outcomes.^{43 44} It has been suggested that a combination of extrinsic and intrinsic incentives can effectively attain desired change in the system and improve the quality of care delivered.⁴⁵

To the best of our knowledge, there is no knowledge synthesis that examines the impact of provider remuneration models on team outcomes in primary care. In addition, the evidence on the impact of extrinsic and intrinsic team-based incentives on outcomes has not been studied in primary care. The lack of knowledge in this area is a significant operational challenge for policymakers and professional associations. As provincial and territorial governments continue implementing team-based models in Canada, it will be critically important to understand how remuneration and extrinsic and intrinsic incentives can maximise team collaboration and effectiveness to achieve the goals of the quadruple aim. Thus, we present a protocol for a rapid scoping review to map and synthesise the current state of team-based primary care literature. Specifically, the upcoming review will:

- ▶ Examine the impact of provider (physician or nurse practitioner-led) remuneration models (salary, FFS, blended models etc) on outcomes.
- ▶ Identify extrinsic and intrinsic team-based incentives in primary care.
- ▶ Examine how extrinsic and intrinsic primary care team-based incentives impact outcomes.

METHODS AND ANALYSIS

Design

We will conduct a rapid scoping review⁴⁶ guided using the Arksey and O'Malley framework⁴⁷ and subsequent guidance from Levac *et al*,⁴⁸ Colquhoun *et al*⁴⁹ and Daudt *et al*⁵⁰ to systematically identify and map key concepts and sources of evidence in the peer-reviewed and indexed literature. There is no established methodology for conducting rapid reviews,⁵¹ however, we follow the advice of Tricco *et al* to conduct a review in a shorter time frame to summarise the evidence.⁵² Guidance from scoping review methodologies will be used to help achieve this aim. Scoping reviews are conducted to explore the breadth or depth of the literature, map and summarise the evidence, inform future research and identify or address knowledge gaps.⁴⁷ As such, the rapid scoping review will follow the five-step scoping review methodological process.⁴⁷ This process (described in detail below) includes (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data and (5) collating, summarising and reporting the results.⁴⁷ Consistent with the rapid review methodology, systematic searches will be conducted with a limited number of databases, and double screening of articles will take place for a

subset of the data.^{46 52} Since there are no reporting guidelines for rapid reviews,⁵¹ the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) will be used to increase the rigour of this review.⁵³ This protocol was informed by the PRISMA-Protocols 2015 checklist (online supplemental material A).⁵⁴

Identifying the research question

In accordance with the guidance for developing scoping review questions, we identified three research questions in consultation with our research team.⁴⁸ The research questions guiding this review are:

1. What is the impact of provider remuneration models on the team, patient, provider and system outcomes in primary care?
2. What extrinsic and intrinsic incentives have been used in interprofessional primary care teams?
3. What is the impact of extrinsic and intrinsic team-based incentives on team, patient, provider and system outcomes?

Stage 2: Identifying relevant studies

Inclusion and exclusion criteria

Since this study is focused on the evidence of impact, all empirical studies using quantitative, qualitative or mixed methods will be included. Studies will be included based on the inclusion and exclusion criteria (refer to [table 1](#) for details on the PICO and criteria). In line with scoping review recommendations,⁴⁸ we will use an iterative approach to refine the search strategy and inclusion and exclusion criteria as the review progresses and we learn more about the state of the literature.

Context or setting

Studies from primary care settings will be eligible, including community and hospitals. We define primary care ‘as an inclusive term to cover the spectrum of first-contact healthcare models from those whose focus is comprehensive, person-centred care, sustained over time, to those that also incorporate health promotion,

Variable	Description	Inclusion	Exclusion
Population	Primary care team	Primary care teams with two more disciplines in primary care clinic or organisation Teams with out-of-pocket costs by providers or through government funding.	Single or group practice of family physicians/general practitioners In-patient setting (eg, acute care, rehabilitation).
Intervention	Remuneration, extrinsic incentives and intrinsic incentives	Remuneration: salary, FFS, bundled payment/global fee/case rate, P4P and capitation, blended capitation, blended salary Extrinsic incentives: pay rise, bonuses, paid leave, annual recreational plans and professional development Intrinsic Incentives: autonomy, challenge and responsibility, the opportunity for advancement, perceived significance of the work and personal satisfaction	
Outcomes	The outcome of the included articles.	A broad range of indicators: team (team collaboration, team effectiveness), patient outcomes (quality, safety, satisfaction), provider outcomes (satisfaction), system outcomes (cost-effectiveness, productivity and performance; emergency department visits, hospital readmissions; equity, etc).	
Study designs	The study design of included articles.	Empirical studies that use quantitative, qualitative or mixed-methods pilot studies (eg, feasibility or utility studies), action research, case studies, ethnography, evaluation methods, evaluation, research experiments, focus groups, field studies, interviews, mail surveys, mixed-methods research, naturalistic observation, online surveys, participant observation, participatory research, qualitative research, questionnaires research, statistical analysis, statistical studies, telephone surveys.	Studies that focus on theories/methods, opinion letters, commentaries, editorials, protocols, reviews (literature, systematic or scoping review).
Lamguage	The language of included articles.	English language	
Time Period	The publication time of included articles.	Time period 2000–2022	
FFS, fee for service.			

community development and intersectoral action to address the social determinants of health.’ Aggarwal¹ (p7). Primary care teams are defined broadly to include ‘the provision of health services to individuals, families and/or their communities by a most responsible provider (ie, family physician, nurse practitioner) and two or more health disciplines who work interdependently with patients and their caregivers—to the extent preferred by each patient—to accomplish shared goals within and across settings to achieve coordinated, high-quality care’ Babiker *et al*⁵⁵ (p. 10). These teams can be funded through providers’ out-of-pocket costs or government funding.

Intervention

Studies on remuneration mechanisms for physicians and nurse practitioners and extrinsic and intrinsic incentives will be included in this study. Remuneration models (payment models or financial models) are defined as compensation or provider payment structures to support providers for their services.⁵⁶ Extrinsic incentives are defined as being within the direct control of the workplace and acting to prevent job dissatisfaction. We will look for information on tangible rewards such as pay raises, bonuses, paid leave, annual recreational plans and professional development. Intrinsic incentives are defined as non-financial incentives that contribute to job satisfaction.^{28–31} We will look for literature on autonomy, challenge and responsibility, the opportunity for advancement, the perceived significance of the work, and personal satisfaction.

Outcomes

We will include a broad range of team, patient, provider and system outcomes (see [table 1](#)). Since there are many conceptualisations and measures for team collaboration and team effectiveness in the literature,^{57–60} we will include all conceptualisations identified in studies for this review.

Exclusion criteria

Studies of non-primary care team-based models will be excluded. Non-English language studies will be excluded. Reviews, expert opinions, background articles and conference proceedings will also be excluded. We acknowledge the limitation of English-written publications may exclude publications from non-English-speaking countries.

Data sources

We will search for studies using the following electronic databases: Medline, CINAHL, Embase, PsycINFO and EconLit. An information science specialist recommended these databases since they include a range of literature in the context of healthcare. We will also conduct a grey literature search through an internet search of the first 100 pages of Google and Google Scholar.⁶¹ The search will cover all literature from 2000 to 2022. We have limited the search by year to correspond with the period in which initiatives were introduced to implement primary care teams and funding and payment models in Canada and

abroad.^{2 62–65} To ensure that the scoping review captures the breadth of literature, we will conduct a hand search of various reference lists of included studies, drawing on forward and backward citation tracking and electronic ‘cited by’ searches using Google Scholar.

Searches

The comprehensive search strategy will be developed in collaboration with the study’s principal investigator, two information science specialists at the University of Toronto and the research team (refer to online supplemental material B for sample search strategy). Initially, MEDLINE will be searched to pilot the strategy. Once the MEDLINE search is finalised, the search terms will be translated for the other databases. Keywords from the titles, abstracts and index terms used to describe the retrieved papers will be reviewed to help inform the final search. The research team will then meet to discuss any refinements before further searches are conducted.⁴⁸

Study selection

The studies will be deduplicated using reference and review management software (EndNote V.20). The deduplicated studies will be imported to Covidence (a platform used to screen studies).⁶⁶ The review process will consist of two stages. The first stage will involve screening titles and abstracts, and the second phase will involve full-text screening. In phase 1, two reviewers will screen a sample of the first 200 titles and abstracts to assess any inconsistencies with the application of the inclusion and exclusion criteria. Titles and abstracts will be independently screened (ie, categorised into ‘yes’, ‘no’ or ‘maybe’) for eligibility by two reviewers using the inclusion criteria. Team members will discuss any conflicts, improve the criteria (if needed) and proceed to screen once there is 75% or more inter-rater agreement between reviewers. Due to time constraints inherent to rapid reviews, one reviewer will screen all titles and abstracts to identify possibly relevant studies. In phase 2, two reviewers will independently screen all the retrieved full-text articles to assess for relevance. References will be checked to identify relevant articles. Any screening discrepancies will be discussed with the inclusion of another reviewer until a consensus is reached. Authors will be contacted via email if it is unclear whether to include/exclude an article review. We will illustrate our search strategy, using a PRISMA figure.

Data extraction and charting

A data extraction form will be created collectively by the research team. Charting the data will help the research team view the results in the form of a numerical analysis of the studies and assist with the narrative analysis to identify common themes of the charted data.⁴⁷ We will use Microsoft Excel to manage the data extraction. As per the suggestion of review methodologists,^{47 48} the charted data will include details on authorship and publication, study aim and methodology, article type, population, setting,

results and limitations of the articles. We will also record information on the characteristics of primary care teams, remuneration mechanisms and extrinsic and intrinsic incentives. Specific outcomes of interventions will be recorded for various team, patient, care provider and system outcomes. We will also summarise the key findings related to scoping review questions.

Two team members will pilot the data extraction form on a randomly selected sample of ~10% of the included full-text articles. The results will be compared and discussed to refine the data-charting form with the primary investigator.⁴⁸ Any refinements will be made once agreed on by the research team, and the reasons for changes will be recorded. This will ensure that all relevant data is captured consistently among reviewers.⁴⁸ Once consensus has been reached, data extraction will be conducted independently by two team members using the data extraction form.^{47 48} The research team will discuss and resolve disagreements between research assistants and/or the primary investigator by consensus.

Quality assessment

We will conduct a quality assessment of included studies but will not exclude studies based on quality. We will assess the quality of studies using the Mixed Methods Appraisal Tool (MMAT).⁶⁷ This critical appraisal tool evaluates and compares quality across quantitative, qualitative and mixed-methods study designs.⁶⁷ It has been used in other recent scoping reviews incorporating diverse study designs. The MMAT provides the ratings of each criterion rather than calculating a total score.⁶⁷ Two reviewers will conduct an assessment independently and compare the results. Any discrepancies will be reconciled with additional team members.

Summarising and reporting

We will present a descriptive summary of each of the included studies to describe the characteristics of the study (see online supplemental file C for an example of the data extraction form). We will synthesise the quantitative and qualitative data for each research question using a convergent synthesis design where both types of data are analysed concurrently.^{68 69} Depending on the data charted from these studies, we will consider whether quantitative and qualitative data are analysed using the same methods (data-based convergent design) or separately using different methods (results-based convergent design). Qualitative and quantitative data will be summarised using narrative analysis⁷⁰ and will be integrated to present answers to the research questions. Results will be reported based on PRISMA-ScR guidance.⁵³

The charted data⁴⁷ will be synthesised and condensed into summary tables based on key themes. A key theme will refer to 'reporting patterns (themes) within data'. Braun and Clarke⁷¹ (p.79) When a discrepancy in key themes or data points is observed, consensus between all research team members will be obtained. This narrative analysis will involve the research team reviewing the data charted

and discussing thoughts over a series of team meetings. These meetings will include documenting ideas about the data chart, verbal discussion of preliminary key themes across the studies and categorisation of themes into main categories and subcategories that answer each of our research questions. All emerging themes, which could not be classified according to one of the questions, will also be reported to expand the breadth of the analysis. This synthesis approach is supported by the Cochrane Qualitative and Implementation Methods Group recommendations, which suggest descriptive themes to inform policy.⁷²

PATIENT AND PUBLIC INVOLVEMENT

No patients or public members were involved in this protocol development. Knowledge users are members of the research team. An integrated knowledge translation approach will be used to engage the knowledge users from the Association of FHTs, Ontario College of Family Physicians and Ontario Medical Association Section of General Practitioners throughout the rapid scoping review.

DISCUSSION

We present a protocol for a rapid scoping review designed systematically to identify the breadth of literature on provider remuneration mechanisms, extrinsic and intrinsic incentives in team-based primary care and their impact. It is anticipated that findings will identify remuneration mechanisms, extrinsic and intrinsic financial incentives and their impact on outcomes for team-based primary care and highlight key areas for future research. Together, the findings from this study will support the advancement of effective team-based primary care models.

While a rapid review methodology is used, we rely heavily on scoping review methodology. This was deemed appropriate as scoping is used to understand complex phenomena of interest, such as remuneration models and incentives to: (1) map the literature in an area of interest, (2) summarise and disseminate research findings and (3) identify gaps in research such that a systematic review and/or future research capacity can be established.⁴⁷ A rapid review methodology will allow us to inform policy and practice quickly by sharing findings with knowledge users, leading to tangible actions of primary care reform.⁵²

There has been growing recognition in Canada for implementing team-based primary care models to improve attachment, access and meet the needs of populations with health and social problems.^{1 71-77} However, implementing effective team-based approaches requires exploring the role of incentives and payment models on team collaboration and effectiveness. The results of this study will help inform the design of potential payment interventions, highlight gaps in the literature and identify future research directions.

LIMITATIONS

Our review is limited by its rapid review methodology, which is less rigorous than a systematic review and means searching a limited number of databases. We have only included empirical studies published in peer-reviewed journals in English. Thus, we do not include studies published in other languages and those contained in potentially relevant grey literature. As team-based primary care interventions can be inconsistently described, we may be limited by the inclusion/exclusion criteria and search terms. Despite these limitations, this review will provide an overview of the literature per scoping review guidelines.

CONCLUSION

Given the calls for implementing team-based primary care models in Canada, this rapid scoping review will provide policy-makers and knowledge users with important information on the role of remuneration mechanisms and extrinsic and intrinsic incentives for enabling effective implementation of team-based primary care. The findings of this review could guide the implementation of effective team-based primary care interventions to achieve the goals of the quadruple aim.

ETHICS AND DISSEMINATION

Ethics approval is not required as this study is a review of the literature. Findings from this study will be written for publication in an open-access peer-review journal and presented at national and international conferences. Knowledge users are part of the research team and will assist with disseminating findings to the public, clinicians, funders and professional associations.

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Contributors MA is the principal investigator who conceived the original study and obtained funding. MA led the development of the protocol, and all other authors (BH, KMK, KM, LG, KM, DB and KS) read, revised and approved the final version of the manuscript.

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