# Interprofessional collaboration and healthcare costs: a brief literature review

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## Abstract

Rising healthcare costs are unsustainable for a publicly funded healthcare system such as Manitoba's, necessitating a search for cost-effective solutions. This article presents a brief literature review on the cost-effectiveness of interprofessional collaboration (IPC), which is one potential solution to rising healthcare costs. The review demonstrates that IPC is a cost-effective method of managing acute and chronic health conditions, and could lead to reduced emergency department visits and shorter hospital stays.

*Keywords: interprofessional collaboration, healthcare costs, joint practice*

## Introduction

In 2017, the Manitoba government asked healthcare authorities to find cost savings, which led to a major revamp of the Manitoba healthcare system, including emergency rooms converted to urgent care; nursing job cutbacks and scheduling changes; funding cuts to some programs; and emergency medical services closure.[1,2,3,4,5,6] During the resulting assessment, interprofessional collaboration (IPC) emerged as a cost-effective, patient-centred solution to rising healthcare costs. This article presents a brief review of the literature on the cost-effectiveness of IPC.

IPC is a "partnership between a team of health providers and a client in a participatory, collaborative and coordinated approach to shared decision-making around health and social issues," involving individuals from at least two different professions.[7] As part of the CanMEDS framework, medical professionals are expected to collaborate with other healthcare team members.[8] Despite this expectation, IPC is not always the norm in current healthcare settings.[9] Studies of Canadian family physicians found that collaboration between physicians and non-physician healthcare providers is not very common.[10,11]

## Literature Review

Relevant studies published within the last 10 years were identified with CINAHL using the subject headings (joint practice OR interprofessional relations) AND (cost benefit analysis OR health care costs OR costs and cost analysis OR cost savings). A study was included in this review if it identified an interprofessional team consisting of at least two different health professions and presented data related to healthcare costs. Studies were excluded if the team members discussed were not members of a healthcare profession, or if the study was comparing different IPC care delivery methods (e.g., in-person versus telephone-based). Thirty-four studies were reviewed and after application of the inclusion and exclusion criteria, nine articles were selected for inclusion.

## Results

### IPC in managing chronic conditions

A review on physician-pharmacist collaboration reported a 43-89% improvement in blood pressure control in individuals that were seen by both a physician and a pharmacist.[12] The same review also reported that physician-pharmacist collaborations reduced the average HbA1c by 1.2% and led to 24% more individuals having an HbA1c <7% compared to physician-only care. Additional studies on physician-pharmacist collaboration have reported a lower provider visit cost per patient and no significant cost differences between the collaborative care model and usual care – even though the IPC model provided greater hypertension and diabetes control.[12,13]

Cancer patients are another group of chronically ill individuals that benefit from IPC. Up to 35% (range: 4 – 35%) of patients with cancer discussed during multidisciplinary team meetings received changes in their diagnostic reports.[14] Furthermore, a review found that compared to a comparison group not discussed in multidisciplinary team meetings, those patients discussed in team meetings were more likely to receive appropri-

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ate staging and adjuvant treatment.[14] Individuals with cancer also benefit from collaboration between breast care nurses and physicians through reduced hospital readmissions, emergency department visits and mental health costs.[15]

IPC has been reported to lead to cost-reductions in managing patients with chronic pancreatitis and chronic kidney disease. In a review of 2-years of healthcare costs in a large medical center, applying an IPC model of healthcare to the treatment of individuals with chronic pancreatitis led to reduced length of hospital stays and an estimated overall savings of $670,750.27 USD (N=311).[16] Savings of $1931 USD annually per patient were reported in patients with chronic kidney disease treated using an IPC model involving nurses, physicians, pharmacists and dieticians.[17] The model led to better renal survival and fewer patients requiring transplant.[17]

### IPC in managing acute conditions and in surgical settings

In a program addressing depression and anxiety secondary to acute cardiac illness, a psychiatry and social work IPC intervention was found to involve higher costs but resulted in more quality-adjusted life-years, depression-free days and fewer emergency department visits.[18]

A 2008 study showed that within a cardiac surgical unit, IPC involving nursing, medicine, pharmacy and physiotherapy reduced cancellations, postoperative clinical incidents, and the length of postoperative stays leading to cost savings worth $508,845 USD (n=260).[19] An economic analysis study found that IPC involving physicians, therapists and social work was more cost-effective compared to traditional perioperative hip surgery management if n>54 patients and resulted in cost savings if greater than 318 patients were treated annually.[20]

The Institute of Healthcare Improvement outlined the Quadruple Aim as a compass to direct the health care system's future. The Quadruple Aim lists improved experience of care, improved population health, improved provider well-being and reduced healthcare costs as potential targets for improving the overall health system.[21,22] The current literature suggests that IPC can be used as a tool to reduce long-term healthcare costs across a variety of healthcare settings, and in the treatment of various chronic and acute health conditions. In this review, most studies indicate a non-statistically significant slightly higher initial cost as the IPC model includes more healthcare professionals providing care to each patient. However, cost reductions to the healthcare system came from reduced emergency department visits, reduced length of hospital stays and better patient management (i.e. better assessment and treatment). These cost reduction measures are especially important for the Manitoba healthcare system as the system is undergoing a transformation resulting in emergency department closures while also experiencing a bed shortage.[23]

While the literature included in this article was reviewed specifically for outcomes related to reduced healthcare costs, the Canadian Interprofessional Health Collaboration also reports that IPC can enhance practice and service delivery, and may also enhance patient care.[24] Locally, the Winnipeg Regional Health Authority endorses collaborative care as it creates better health outcomes, enhances satisfaction with care, improves patient safety, increases providers' health and job satisfaction, and is cost-effective and cost-efficient.[25]

The articles included in this review have several limitations. First, most of the articles are from foreign healthcare systems. The differences between Canadian and foreign health systems limit the generalizability of the findings. Second, the number of articles involved in this brief literature review may not be representative of the entire knowledge base around the topic. Despite these limitations, Canadian healthcare systems are highly likely to benefit from enhanced IPC to promote cost-efficiencies and cost-reductions. As the current Manitoba healthcare system is undergoing transformation, policy makers and health leaders should investigate IPC as an evidence-based tool that offers opportunities for improved cost-effective care to be delivered within the healthcare system.

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