Single-entry models (SEMs) for scheduled services: Towards a roadmap for the implementation of recommended practices

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ABSTRACT

Background: Long waiting times for elective services continue to be a challenging issue. Single-entry models (SEMs) are used to increase access to and flow through the healthcare system. This paper provides a roadmap for healthcare decision-makers, managers, physicians, and researchers to guide implementation and management of successful and sustainable SEMs.

Methods: The roadmap was informed by an inductive qualitative synthesis of the findings from a deliberative process (a symposium on SEMs, with clinicians, researchers, senior policy-makers, healthcare managers, and patient representatives) and focus groups with the symposium participants.

Results: SEMs are a promising strategy to improve the management of referrals and represent one approach to reduce waiting times. The SEMs roadmap outlines current knowledge about SEMs and critical success factors for SEMs' implementation and management.

Conclusions: This SEM roadmap is intended to help clinicians, decision-makers, managers, and researchers interested in developing new or strengthening existing SEMs. We consider this roadmap to be a living document that will continue to evolve as we learn more about implementing and managing sustainable SEMs.

1. Background

In Canada and other developed countries, the issue of long waiting time has been discussed over decades [1,2]. However, waiting times for many elective (non-emergency) healthcare services, including elective surgery procedures and specialty care, continue to be a challenge [3,4]. For example, in the United Kingdom (UK), Sweden, New Zealand, Norway, and Canada, between 19 and 30% of adults reported two months or longer waiting times for a specialist appointment [5]. In New Zealand, Canada, and Norway 15, 18 and 22% of patients, respectively, reported 4 months or longer waiting times for an elective surgery [6]. The Commonwealth Fund's report card ranks Canada 10th of 11 countries with respect to the overall health system performance, and last with respect to access to care [7]. This is despite diligent efforts and $41B invested by First Ministers in the 2004 Health Accord targeting "meaningful waiting time reductions" for scheduled services in five priority areas (cancer and cardiac care, diagnostic imaging, joint replacement, sight restoration) [8]. In many countries, including Canada, patients needing a specialty consult are typically referred by a primary care physician to a specialist. Depending on the specialty, the volume of

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patients and any given specialist's queue length, a patient's wait for an initial consultation can be weeks, months or years [8]. The current literature on the impact of waiting time on patients' outcomes is mixed and to some extent accepts waiting times as a rationing mechanism [9,10]. However, delays in access have been reported to contribute to a decline in health status, poorer health outcomes and overall burden of illness, through increased anxiety, stress, and pain [10–13].

Several different approaches (e.g., standardized referral processes, waiting time care guarantees (i.e., defined timeframes within which the patient seen, diagnosed and treated), scheduling systems with or without prioritizing patients according to urgency categories, and patient choice systems with patient-initiated visits and follow-ups) have been explored and implemented to reducing waiting times for health services [14]. Single-entry models (SEMs) are one promising approach. The SEM approach is informed by queuing theory and has been successfully implemented in service industries where customers assemble in a single queue (rather than multiple queues) to see the next-available service provider [15]. In healthcare, SEMs are used to increase access to and flow through the system. In SEMs, patients access services through a single point-of-entry and are able to see the next-available provider based on priority and urgency. This improves the distribution and flow of patients throughout the system, as patients seeing the next-available physician (from a pool of participating physicians) do not have to wait for an appointment slot for a specific physician to become available [11]. However, SEMs are rarely discussed in peer-reviewed healthcare and health services research literature and available studies are generally of low rigor [15–17]. More commonly, SEMs are discussed in grey literature or at various meetings of practitioners, researchers and health administrators [18,19]. Based on such grey literature and anecdotal evidence from several provinces and regions [18,19], the Canadian Medical Association (CMA) found SEMs to be an effective strategy in the improvement of referral management [20]. In 2014, as part of its advocacy work to find solutions to challenges with existing referral processes, the CMA adopted a policy stating that streamlined referral processes are "essential for improving access to quality care" [20]. SEMs are included as recommended components of successful referral processes across Canada [19,20].

Nonetheless, SEMs are not currently commonplace in Canada nor are they standard policy or practice [16,21–24]. So far, it is not clear how SEMs should be implemented and managed. We aimed to build upon the extant knowledge on SEMs and to develop a roadmap for recommended practices for SEMs for elective healthcare services. This SEM roadmap is intended to help clinicians, decision-makers, managers and researchers interested in developing new or strengthening existing SEMs by providing recommendations for design, implementation, and management of successful and sustainable SEMs.

2. Methods

The development of the roadmap was informed by an inductive qualitative synthesis of the findings of a deliberative process and qualitative focus groups conducted during the Canadian Symposium on Single-entry Models: Towards an Evidence-informed Roadmap for Implementation of Best Practices (Ottawa, Ontario, April 15, 2015). The symposium brought together 49 relevant stakeholders from across Canada, including 7 clinicians, 11 researchers, 13 policy-makers, 15 healthcare managers, and 4 patient representatives.

The first part of the symposium was organized as a deliberative process aiming to discuss and critically examine SEMs. A "deliberative process" is a method of policy- and decision-making that allows

relevant stakeholders/actors to receive and exchange information on the issue of interest and to arrive at an agreement and conclusions to support their decision-making [25]. Given that policy and decision-making is not a rational, linear process, but rather is a collaborative endeavor embedded in context and is best informed by multiple kinds of knowledge, deliberative processes and policy dialogues have been recognized in the literature as an important contribution to evidence-informed policy making [26,27].

Our deliberative process included three steps. First, participants were presented with a review of international experiences in waiting time management with a subsequent comparison of SEMs relative to other strategies that have been used internationally to tackle excessive waiting times. Second, four national exemplars of successful SEMs were presented to the audience: the Winnipeg Central Intake Service for total joint replacement (WCIS) [28]; the Edmonton Musculoskeletal Centre (EMC) [29]; the Cardiac Care Network of Ontario (CCNO) [30]; the Central Intake and Assessment for Rheumatology (CIAR) in Newfoundland and Labrador [31]. These exemplars were chosen to represent provinces across Canada (Alberta, Manitoba, Newfoundland and Labrador, Ontario) and different clinical areas (surgical and chronic disease management) based on their successful experience in implementation (i.e., self- and peer-reported SEM's ability to meet goals of its implementation, including reduced waiting times and improved access to care) and managing SEMs (i.e., self- and peer-reported long-term sustainability). Presenters from each of the exemplars shared their experience and insight related to 1) key success factors to establish and manage a sustainable SEM; 2) challenges in the implementation and management of a SEM; 3) results of SEMs implementation. Third, participants were given time to reflect on the issue of waiting time and SEMs as a proposed solution, implementation and management considerations, the implications for the healthcare system, and potential solutions to address challenges in the implementation and management of SEMs. All presentations and discussions during the symposium were audio-recorded and carefully documented by assigned note-takers.

During the second part of the symposium, participants and presenters joined the qualitative focus groups to gather participants' input on key elements to be included in the roadmap. Focus groups followed a semi-structured interview guide, which was developed by the research team members with extensive experience in qualitative research (BCS, GM, and EL) and was approved by the Conjoint Health Research Ethics Board at the University of Calgary. A total of 35 symposium participants (3 patient representatives, 4 clinicians, 5 researchers, 11 healthcare managers, and, 12 policy-makers) took part in focus groups. We had 5 groups with between 6 and 8 participants and a facilitator and a note-taker in each group, with representation from different stakeholders and geographic regions. At the beginning, participants were asked to talk for a minute about themselves, their work and previous knowledge and experience with SEMs. Afterward, participants were asked the following questions: 1) What are your thoughts on single-entry models? 2) What benefits do you think single-entry models offer? 3) What do you anticipate as challenges/unintended consequences associated with the introduction of single-entry models? 4) What would you advise those who want to establish a SEM? And what are the critical success factors for implementation and management of SEMs? Discussion on each question continued until data saturation was reached. In the end, note-takers read their notes to the group and summarized the discussion in order to obtain feedback from participants. Focus groups were audio-recorded and transcribed verbatim.

Ultimately, data from the deliberative process were qualitatively synthesized through tabulation and discussions between the research team to identify key themes. Transcripts from the focus groups were checked for consistency against notes taken during