

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

# Single-Entry Models for Scheduled Health Care Services: Clinical Utility and Guidelines

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**Authors:** Diksha Kumar, Kelly Farrah

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## Research Questions

1. What is the clinical utility of single-entry models for individuals accessing scheduled health care services?
2. What are the evidence-based guidelines regarding the use of single-entry models for individuals accessing scheduled health care services?

## Key Findings

One systematic review and six non-randomized studies were identified regarding the clinical utility of single-entry models for individuals accessing scheduled health care services. No relevant evidence-based guidelines were identified regarding the use of single-entry models for individuals accessing health care services.

## Methods

### Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concept was single-entry models. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and November 30, 2020. Internet links were provided, where available.

### Selection Criteria and Summary Methods

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. The Overall Summary of Findings was based on information available in the abstracts of selected publications. Open access full-text versions of evidence-based guidelines were reviewed when abstracts were not available, and relevant recommendations were summarized.

**Table 1: Selection Criteria**

<b>Population</b>	Individuals accessing scheduled health care services
<b>Intervention</b>	Single-entry model
<b>Comparator</b>	Q1: Alternative patient referral system Q2: Not applicable
<b>Outcomes</b>	Q1: Clinical utility (e.g., access to care, patient wait times, quality of life, time to diagnosis and treatment, disease severity, mortality) Q2: Recommendations regarding best practices (e.g., appropriate patient populations, implementation considerations, appropriate clinical settings)
<b>Study Designs</b>	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines

## Results

One systematic review<sup>1</sup> and six non-randomized studies<sup>2-7</sup> were identified regarding the clinical utility of single-entry models for individuals accessing scheduled health care services. No relevant evidence-based guidelines were identified regarding the use of single-entry models for individuals accessing health care services. No relevant health technology assessments or randomized controlled trials were identified.

Additional references of potential interest that did not meet the inclusion criteria are provided in the appendix.

## Overall Summary of Findings

One systematic review<sup>1</sup> and six non-randomized studies<sup>2-7</sup> were identified regarding the clinical utility of single-entry models for individuals accessing scheduled health care services. Detailed study characteristics are provided in Table 2.

Authors of the identified systematic review<sup>1</sup> found that single-entry models for patients seeking elective surgeries were associated with decreased wait times and waitlists when compared to controls; however, the identified studies were low-quality.

The identified non-randomized studies<sup>2-7</sup> followed a pre-post implementation<sup>2,4,6,7</sup> or retrospective cohort<sup>5</sup> study design and examined a variety of populations, including patients awaiting cancer treatment,<sup>2,5</sup> total joint replacement,<sup>3</sup> mental health services,<sup>4,6</sup> and rheumatology care.<sup>7</sup> Authors of each of the non-randomized studies<sup>2-7</sup> reported reduced wait times following the implementation of centralized intake or single-entry models.

No relevant evidence-based guidelines were found regarding the use of single-entry models for individuals accessing health care services; therefore, no summary can be provided.

**Table 2: Characteristics of Included Literature**

First Author, Year	Study Characteristics	Intervention(s) and Comparator(s)	Relevant Outcome(s)	Conclusion(s)
Systematic Reviews and Meta-Analyses				
Damani, 2017 <sup>1</sup>	<ul style="list-style-type: none"> <li>Systematic literature search regarding effect of SEMs on access to elective surgery</li> <li>11 non-randomized studies identified</li> </ul>	<ul style="list-style-type: none"> <li>SEM for patients awaiting elective surgeries</li> <li>Controls not reported</li> </ul>	<ul style="list-style-type: none"> <li>Wait times</li> <li>Waitlist length</li> </ul>	<ul style="list-style-type: none"> <li>Low-quality studies</li> <li>SEM associated with decreased patient wait times and waiting lists</li> </ul>
Non-Randomized Studies				
Cha, 2020 <sup>2</sup>	<ul style="list-style-type: none"> <li>Patients awaiting breast cancer surgery</li> <li>Pre-post implementation study</li> </ul>	<ul style="list-style-type: none"> <li>Before and after implementation of centralized intake</li> </ul>	<ul style="list-style-type: none"> <li>Wait time from diagnosis to surgery</li> </ul>	<ul style="list-style-type: none"> <li>Centralized referrals reduced wait time from 47 to 41 days</li> </ul>
Damani, 2019 <sup>3</sup>	<ul style="list-style-type: none"> <li>Patients awaiting total joint replacement of hip or knee</li> <li>Pre-post implementation study</li> </ul>	<ul style="list-style-type: none"> <li>Before and after implementation of SEM</li> </ul>	<ul style="list-style-type: none"> <li>Wait times</li> </ul>	<ul style="list-style-type: none"> <li>Mean wait time reduced for total knee replacement</li> </ul>

First Author, Year	Study Characteristics	Intervention(s) and Comparator(s)	Relevant Outcome(s)	Conclusion(s)
	<ul style="list-style-type: none"> <li>N = 2397</li> </ul>			
<b>Melathopolous, 2019<sup>4</sup></b>	<ul style="list-style-type: none"> <li>Children and adolescents seeking mental health services</li> <li>Pre-post implementation study</li> </ul>	<ul style="list-style-type: none"> <li>Before and after implementation of centralized intake</li> </ul>	<ul style="list-style-type: none"> <li>Wait times</li> <li>Length of stay</li> </ul>	<ul style="list-style-type: none"> <li>Reduced wait times and length of stay for scheduled services</li> </ul>
<b>Common, 2018<sup>5</sup></b>	<ul style="list-style-type: none"> <li>Patients awaiting lung cancer diagnosis and treatment</li> <li>Retrospective cohort study</li> <li>N = 133</li> </ul>	<ul style="list-style-type: none"> <li>Centralized referral program</li> <li>Traditional referral process</li> </ul>	<ul style="list-style-type: none"> <li>Median wait time from imaging to biopsy</li> <li>Median wait time from imaging to treatment initiation</li> </ul>	<ul style="list-style-type: none"> <li>Statistically significant reduction in wait times for patients referred through centralized program</li> </ul>
<b>Zekhria, 2017<sup>6</sup></b>	<ul style="list-style-type: none"> <li>Referrals to mental health services</li> <li>Pre-post implementation study</li> </ul>	<ul style="list-style-type: none"> <li>Before and after implementation of SEM</li> </ul>	<ul style="list-style-type: none"> <li>Average wait time from referral to first face-to-face assessment</li> </ul>	<ul style="list-style-type: none"> <li>Average wait time reduced by 34%</li> </ul>
<b>Hazlewood, 2016<sup>7</sup></b>	<ul style="list-style-type: none"> <li>Rheumatology referrals</li> <li>Pre-post implementation study</li> </ul>	<ul style="list-style-type: none"> <li>Before and after implementation of central referral process</li> </ul>	<ul style="list-style-type: none"> <li>Wait times</li> </ul>	<ul style="list-style-type: none"> <li>Reduced wait times for moderate and urgent referrals</li> </ul>

SEM = single-entry model

## References Summarized

### Health Technology Assessments

No literature identified.

### Systematic Reviews and Meta-Analyses

1. Damani Z, Conner-Spady B, Nash T, Tom Stelfox H, Noseworthy TW, Marshall DA. What is the influence of single-entry models on access to elective surgical procedures? A systematic review. *BMJ Open*. 2017 Feb 24;7(2):e012225.  
[PubMed: PM28237954](#)

### Randomized Controlled Trials

No literature identified.

### Non-Randomized Studies

2. Cha J, McKeivitt E, Pao JS, Dingee C, Bazzarelli A, Warburton R. Access to surgery following centralization of breast cancer surgical consultations. *Am J Surg*. 2020 May;219(5):831-835.  
[PubMed: PM32033775](#)
3. Damani Z, Bohm E, Quan H, et al. Improving the quality of care with a single-entry model of referral for total joint replacement: a preimplementation/postimplementation evaluation. *BMJ Open*. 2019 Dec 23;9(12):e028373.  
[PubMed: PM31874866](#)

4. Melathopolous K, Cawthorpe D. Impact of central intake development and system change on per capita child and adolescent mental health discharges from 2002 to 2017: implications for optimizing system design by shaping demand. *Perm J.* 2019;23:18.215.  
[PubMed: PM31702981](#)
5. Common JL, Mariathas HH, Parsons K, et al. Reducing wait time for lung cancer diagnosis and treatment: impact of a multidisciplinary, centralized referral program. *Can Assoc Radiol J.* 2018 Aug;69(3):322-327.  
[PubMed: PM29880435](#)
6. Zekria D, Shah A, Malik Y, et al. Improving access to City and Hackney adult mental health services. *BMJ Open Qual.* 2017;6(2):e000014.  
[PubMed: PM29450262](#)
7. Hazlewood GS, Barr SG, Lopatina E, et al. Improving appropriate access to care with central referral and triage in rheumatology. *Arthritis Care Res (Hoboken).* 2016 Oct;68(10):1547-1553.  
[PubMed: PM26815410](#)

## Guidelines and Recommendations

No literature identified.

## Appendix — Further Information

### Previous CADTH Report

8. Pooled referral systems for the management of surgical patient flow: review of clinical effectiveness, cost-effectiveness, and guidelines. (*CADTH Rapid response report: summary with critical appraisal*). Ottawa (ON): CADTH; 2015 Oct 28: <https://cadth.ca/sites/default/files/pdf/htis/oct-2015/RC0717%20Pooled%20Surgical%20Referral%20Final.pdf>. Accessed 2020 Dec 14.

### Non-Randomized Studies

#### *Mixed Intervention*

9. Aird LN, Hong D, Gmora S, Breau R, Anvari M. The impact of a standardized program on short and long-term outcomes in bariatric surgery. *Surg Endosc*. 2017 Feb;31(2):801-808.  
[PubMed: PM27351660](#)

#### *No Comparator*

10. Hosking J, Gibson C. Impact of the single point of access referral system to reduce waiting times and improve clinical outcomes in an assistive technology service. *J Med Eng Technol*. 2016 Jul;40(5):265-269.  
[PubMed: PM27098983](#)

#### *Alternative Outcome*

11. Barber CE, Patel JN, Woodhouse L, et al. Development of key performance indicators to evaluate centralized intake for patients with osteoarthritis and rheumatoid arthritis. *Arthritis Res Ther*. 2015 Nov 14;17:322.  
[PubMed: PM26568556](#)

### Case Report

12. Wittmeier KD, Restall G, Mulder K, et al. Central intake to improve access to physiotherapy for children with complex needs: a mixed methods case report. *BMC Health Serv Res*. 2016 Aug 31;16(1):455.  
[PubMed: PM27578196](#)

### Policy Paper

13. Lopatina E, Damani Z, Bohm E, et al. Single-entry models (SEMs) for scheduled services: Towards a roadmap for the implementation of recommended practices. *Health Policy*. 2017 Sep;121(9):963-970.  
[PubMed: PM28830624](#)

### Review Article

14. Breton M, Smithman MA, Sasseville M, et al. How the design and implementation of centralized waiting lists influence their use and effect on access to healthcare - A realist review. *Health Policy*. 2020 Aug;124(8):787-795.  
[PubMed: PM32553740](#)

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15. NHS Improvement. Referrals and single points of access; 2019; <https://improvement.nhs.uk/resources/referrals-and-single-points-access/>. Accessed 2020 Dec 14.
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19. Saskatchewan Surgical Initiative. Pooled referrals: implementation guide for specialists. Regina: Government of Saskatchewan, Ministry of Health; 2013 Feb: <http://www.sasksurgery.ca/pdf/pooled-referrals-implentation-guide-feb-2013.pdf>. Accessed 2020 Dec 14.
20. Hollahan D, Christilaw S, Oreschina E. Central intake process report: a streamlined process for diabetes education referrals to improve navigation of the system. Cambridge (ON): Waterloo-Wellington Diabetes Regional Coordination Centre; 2011: <https://www.waterloowellingtondiabetes.ca/userContent/documents/Professional-Reports/Central%20Intake%20Report%20Waterloo%20Wellington%20December%202011%20FINAL.pdf>. Accessed 2020 Dec 14.