Multi-Centre Cluster-Randomized Implementation of Canadian Syncope Risk Score based Practice Recommendations for Emergency Department Syncope Management

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BACKGROUND

Syncope accounts for 1-3% of ED visits and ~6% of admissions from the Emergency Department (ED) to hospital. Overall, up to 10% of patients seen in the ED will have serious underlying conditions. Using the results from previous studies, we developed practice recommendations based on the validated Canadian Syncope Risk Score (CSRS) tool and have identified the barriers and facilitators to effectively adapt knowledge into local and have selected implementation strategies accordingly. Variability among Canadian hospitals and the very low yield of investigations and hospitalizations indicate an important opportunity to reduce over-testing, to avoid unnecessary hospitalizations and to shorten the time to ED disposition decisions by applying the evidence-based, rigorously developed CSRS tool. These recommendations could lead to reduction in hospitalization, shorter ED lengths of stay and more standardized disposition decisions.

The lack of effective tools for assessing risk results in many patients being dispositioned before identification of serious underlying conditions that can be fatal, while other patients without risk stay in the ED for a prolonged time or unnecessarily hospitalized. Our practice recommendations, developed using the validated CSRS tool, offers a standardized, efficient, and safe approach to ED syncope management.

OBJECTIVES

The overall objective of this study is to evaluate the effectiveness of the knowledge translation of the CSRS based practice recommendations on health care efficiency and patient safety.

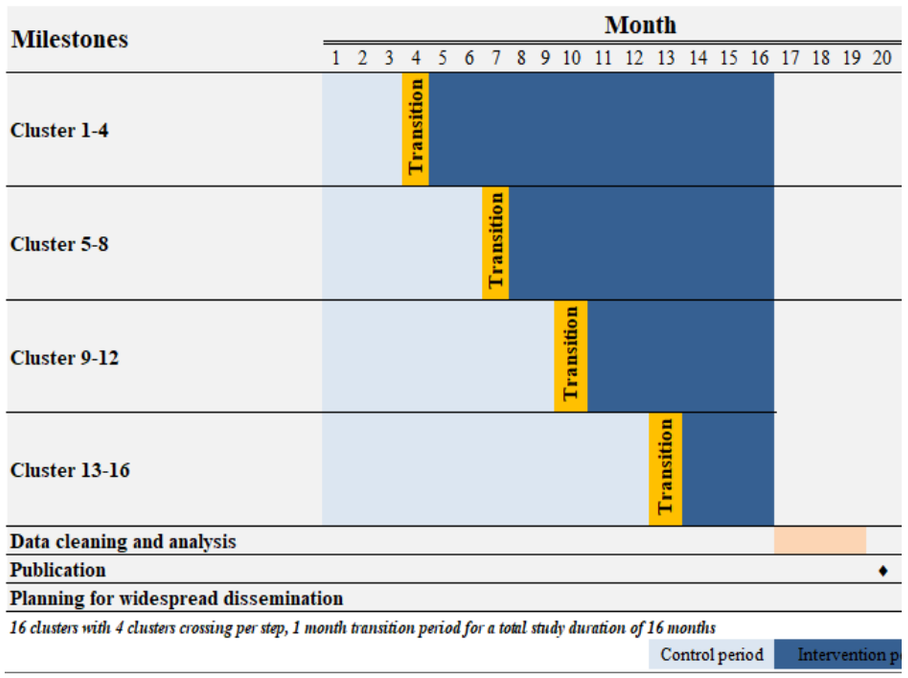
METHODS

- A stepped wedged–cluster randomized trial involving 16-20 ED clusters across Canada for 16 months.
- All clusters start the trial in a control period (usual care) for three months with no intervention being delivered at any site, then sequentially cross over to the intervention period in random sequence, with 4-5 clusters crossing over every third months, until all sites have adopted the intervention. **The intervention is the knowledge translation of the CSRS practice recommendations.**
- The **primary outcome measure** will be the hospital admission; compare the proportion of patients hospitalized during the control and the intervention periods at all the study sites
- The **secondary outcomes measures** are efficacy (ED disposition time, investigations and consultations performed in the ED during the index visit) and safety outcomes (all-cause mortality, return ED visits and hospitalization within 30-days and 1-year of the index visit.).

Canadian Syncope Risk Score

Category	Points
Clinical evaluation	
Predisposition to vasovagal symptoms*	-1
History of heart disease†	1
Any systolic pressure reading <90 or >180 mm Hg‡	2
Investigations	
Elevated troponin level (>99th percentile of normal population)	2
Abnormal QRS axis (<-30 or >100°)	1
QRS duration >130 ms	1
Corrected QT interval >480 ms	2
Diagnosis in emergency department	
Vasovagal syncope	-2
Cardiac syncope	2
Cause unknown	0
Total score (-3 to 11)	_____

Total Score	Estimated risk of serious adverse event§ %	Risk category
-3	0.4	Very Low
-2	0.7	Very Low
-1	1.2	Low
0	1.9	Low
1	3.1	Medium
2	5.1	Medium
3	8.1	Medium
4	12.9	High
5	19.7	High
6	28.9	Very High
7	40.3	Very High
8	52.8	Very High
9	65.0	Very High
10	75.5	Very High
11	83.6	Very High



Results

Our practice recommendations, developed using the validated CSRS tool, offers a standardized, efficient, and safe approach to ED syncope management.

Conclusion

We believe that implementation of the CSRS-based practice recommendations will improve healthcare efficiency and patient safety.

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