INESSS
LE SAVOIR PREND FORME

JULY 2023

Rapid assessment zones in emergency departments: organizational characteristics and their impact

English summary

Une production de l'Institut national d'excellence en santé et en services sociaux (INESSS)

Québec

SUMMARY

Rapid assessment zones in emergency departments: organizational characteristics and their impact

Introduction

Emergency department (ED) overcrowding has been a longstanding challenge for the Quebec health care system. Issues have been reported as far back as the 1970s, and hospital policies have, for the past several years, been geared towards improving patient flow in and out of health care institutions [CSBE, 2014].

In 2014, a report by the Commissaire à la santé et au bien-être (CSBE) noted an increased complexity and acuity of patients who presented to the emergency department between 2003-2004 and 2012-2013, potentially contributing to longer average lengths of stay [CSBE, 2014]. Then, in 2016, a second CSBE report indicated that nearly half of emergency room visits (45,5%) exceeded the maximum wait time standards set by the Ministry of Health and Social Services (Ministère de la Santé et des Services sociaux (MSSS)) [CSBE, 2016a]. In fact, almost half the population of Quebec had to wait more than five hours to be seen by a provider in the emergency room, in comparison with less than 5% of the population in other countries (e.g. Netherlands, Switzerland, United Kingdom) [CSBE, 2016b]. While there are undoubtedly some differences in the organization and management of those healthcare systems, these divergent trends in performance are highlighted in the Commissioner's report.

Five years later, in 2021, emergency room overcrowding was perceived by Quebecers as the most worrying issue among the many challenges facing our healthcare system [De Marcellis-Warin et Peignier, 2021]. Furthermore, overcrowding in emergency departments leads to numerous consequences, such as lower quality of care, longer wait times and a greater likelihood of medical errors [Sartini *et al.*, 2022].

Of the organizational shortcomings linked to ED overcrowding, the 2016 CSBE report had, among other things, underscored the lack of proactive management of care progression and patient flows, the lack of willingness to prioritize emergency services, inadequate distribution of responsibilities between doctors and nurses, and insufficient performance measurement and evaluation. Despite the many efforts deployed to address these deficiencies since the CSBE reports were published, ED overcrowding remains a significant problem.

As part of its commitment to improving the performance of the healthcare system, the Ministry of Health and Social Services has therefore looked into rapid assessment zones (RAZs), a care delivery model which rearranges patient flow pathways within the emergency department. In essence, this approach proposes that a specific area be established, separate and distinct from other pre-existing areas in the emergency department, to be dedicated to the management and care of a predetermined target patient population [MSSS, 2021].

Within the Quebec network, several hospitals have already set up a RAZ in their emergency unit. Ministerial guidelines published in 2021 also provide a frame of reference for the organization and operation of such a zone. However, implemented RAZs remain highly heterogeneous from one facility to another.

With the aim of improving the coherence and fluidity of care in the network, the MSSS has mandated the INESSS to produce a review of the current state of knowledge regarding:

- the inclusion and exclusion criteria to be recommended within a RAZ (i.e., users' age, history, or health conditions);
- RAZ organizational and operational modalities to be considered in various contexts;
- the impact of RAZs on:
  - the safety of patients installed in these zones;
  - the health and well-being of users; and
  - the efficiency of the care offered.

Methodology

A rapid review of the scientific and grey literature investigating the evaluation dimensions named above was conducted for all publications produced since the year 2015.

Results

Twenty-six studies were selected: eight from the grey literature, as well as six reviews and twelve original studies from the scientific literature.

Organizational and operational models

Regarding RAZ nomenclature:

- According to the data collected, there is considerable heterogeneity among the terms used to designate RAZs.
- The most common term was "rapid assessment zone", followed by "split flow"[1], and "fast track".
- Several studies also used an umbrella term (i.e. streaming interventions), which describes all RAZ models that divide patients into homogeneous groups based on common conditions.

[1] "Split flow" refers to a model in which patients are divided into different paths (i.e., flows) of care and treatment.

International distinctions are also noteworthy:

- In the UK, "rapid assessment and treatment" is a model analogous to the RAZ, however it is not an area physically designated within the emergency unit. Instead, it is a process which involves a specific medical team. This approach removes triage from the emergency department pathway.
- France has a particular RAZ model (i.e. the immediate care medical center), which is not physically integrated into the emergency departments.

A heterogeneous set of organizational and operational modalities has also been noted in the literature. A variety of algorithms for clinical pathways in emergency departments have been identified, and these are presented in the report. However, the following common features can be highlighted:

In terms of inclusion and exclusion criteria:

- RAZ models target low acuity presentations without emergencies or urgent conditions.
- Acuity level was the most frequently used inclusion criterion. It was mainly determined with triage tools such as the Canadian Triage and Acuity Scale (CTAS) or the Emergency Severity Index (ESI).

In terms of organizational and operational procedures:

- All models aim to redirect patients to an alternative flow, where they can be cared for and treated seated or on an outpatient basis, to relieve bottlenecks across the traditional care pathway through the emergency department.
- Patients arriving at the emergency department are assigned to different pathways according to their condition (e.g., assessed according to the acuity level).
- Most models have a triage process that deviates from the traditional triage model, aiming to shorten the time required for recording medical history information and for the initial clinical assessment typically led by a nurse.
- Four alternative triage processes were identified:
  - the abbreviated assessment led by a nurse;
  - the triage by a doctor;
  - the simultaneous recording of patient information and triage; and
  - a hybrid form of triage performed simultaneously by a doctor and a nurse.
- A nurse-led abbreviated triage seems to be the most common strategy.
- Within the RAZ, care delivery processes all included patient diagnosis and treatment.

- The Rapid Assessment Zone could also be used as a flexible care zone, in which the eligibility criteria for the RAZ are extended under certain conditions (e.g., in the event of overcrowding in the main area).
- On average, RAZs (and similar models) are open 12 hours a day, with a range spanning from 8 to 15 hours.
- The few available studies that estimate the ratio of RAZ beds per 100 annual visits to the emergency department reveal ratios ranging from 0.003 to 1.2 beds per 100 visits.

In terms of implementation strategies:

- Two implementation approaches were identified: the reallocation of a pre-existing area or the physical expansion of the emergency unit. Generally, the models resulting from a reallocation were also accompanied by a reallocation of personnel. These implementation approaches therefore required no additional human resources.
- The provision of resources dedicated exclusively to the RAZ (e.g., a minimum of one nurse and one doctor assigned to it) is deemed essential to its successful implementation.

Promising impact

Most currently available data report positive results regarding various performance and safety indicators:

- A reduction in the rate of patients who leave without seeing a medical provider (-10.6% to -0.8%) (moderate to high quality);
- A reduction in the length of stay (-42% to -4%) (moderate quality);
- A reduction in wait times (-63% to -9%) (moderate to high quality).

In addition, the following influencing factors were identified:

- In terms of the impact of RAZs on length of stay, the most significant improvements were seen when the RAZ had a "split flow" format and was combined with doctor-led triage. The addition of a doctor-led triage to the “split flow” model led to a 28.5 minutes reduction in length of stay, compared with a 16.3 minutes reduction when these organizational modalities were not implemented.
- Models which redirect patient flows according to the acuity of their condition, their main reason for consultation or their ambulatory capacity were able to achieve significant reductions in average length of stay, ranging from 9 minutes to 60 minutes (-41.6% to -4.0%).
- The effects observed on length of stay and wai times are more pronounced for patients presenting as lower acuity (i.e. acuity levels 4 to 5).

Shortcomings in the literature

Further research is needed to shed light on the following topics:

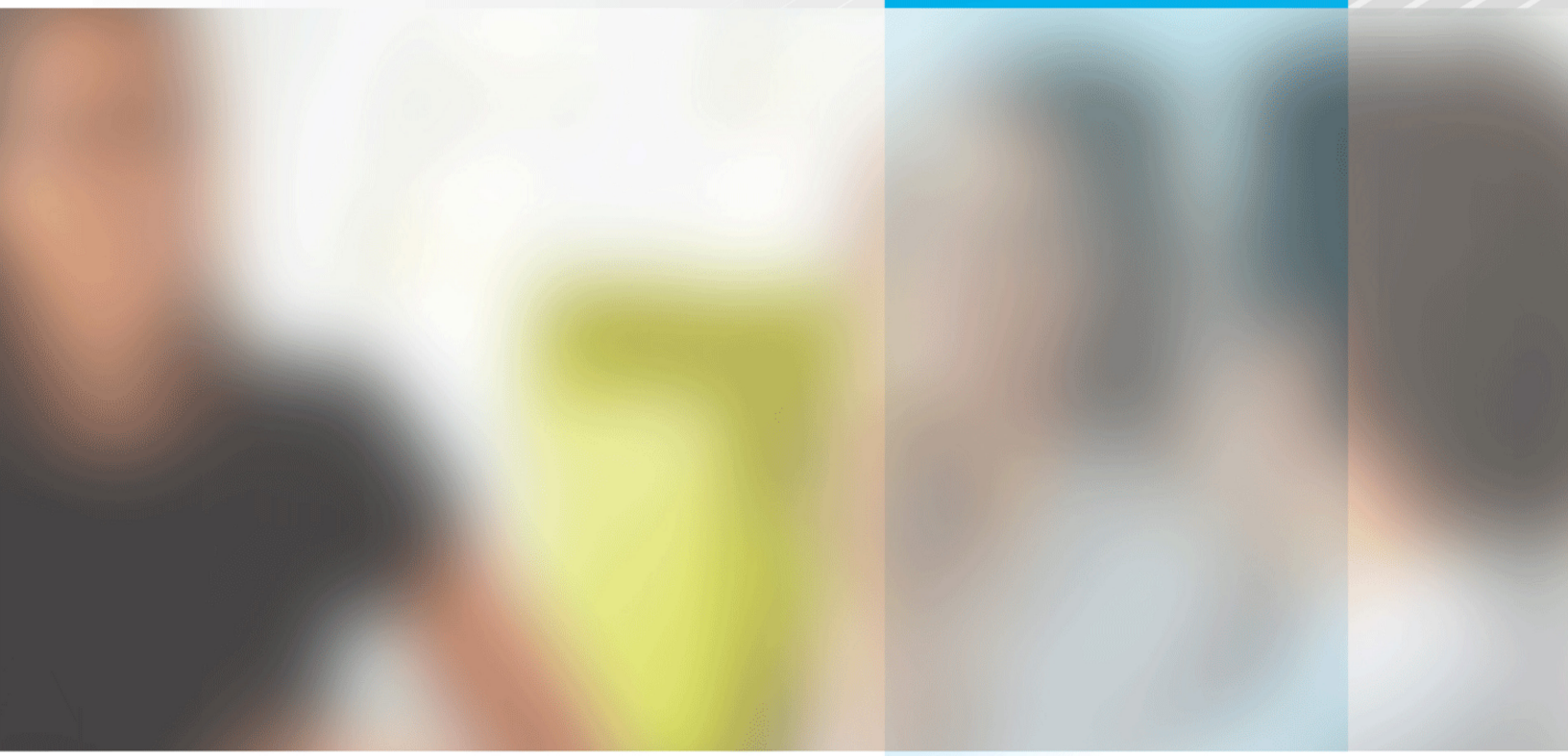
- Out of the 26 studies reviewed, only 5 of them analyzed pediatric emergency departments. None of the articles reviewed focused specifically on the elderly.
- Current available data concerning the impact of RAZs on quality of care, ambulance diversion and economic indicators is limited, making it difficult to draw conclusions on those parameters. Moreover, none of the studies included in this review analyzed the cost-benefit or cost-utility of RAZ models.
- No evidence was found regarding the impact of RAZs on clinical indicators (e.g., patient mortality and morbidity).

Limitations

- The studies included in this review are mainly observational, and a causal relationship between RAZs and their impact on various indicators cannot be inferred.
- Sustainability of the ED's organizational gains over time has rarely been assessed.
- Few studies have controlled for potential confounders.
- Some publication bias may be present for indicators that were assessed based on limited available data.
- The heterogeneity of terms used to designate RAZs could have led to the omission of publications that used other designations.

Conclusions

This review provides an overview of the evidence currently available on RAZs. Although the evidence does not point to a single model to be recommended, it does highlight certain elements that could help clarify ministerial guidelines on the implementation and management of rapid assessment zones in Quebec. In addition, an evaluation of implementation processes could provide a better understanding of the impact of RAZs in the Quebec context.



Siège social

2535, boulevard Laurier, 5e étage
Québec (Québec) G1V 4M3
418 643-1339

Bureau de Montréal

2021, avenue Union, 12e étage, bureau 1200
Montréal (Québec) H3A 2S9
514 873-2563
inesss.qc.ca

Institut national d'excellence en santé et en services sociaux
Québec