

Emergency Department Wait Times in British Columbia

UBC Map the System 2018

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Canada in Context

Canada's emergency department (ED) wait times are the worst in the world amongst developed countries when it comes to emergency department wait times. A report released by the Canadian Institute for Health Information cites that 90% of B.C. emergency room (ER) visits were complete after 8.4 hours in the 2016-17 fiscal year, up from the national average of 7.8 hours. Emergency care units are characterized by their complexity due to the stochastic behavior of patient arrivals and the unpredictable care needed by them, as well as the occupation of shared staff and resources between the ED and correlated departments.

Many critiques focus on the lack of hospital beds, physicians per person, and medical technologies like MRI and CT scanners. Yet since around 2004, wait times have been a major issue within the media, as prolonged wait times have been increasing since then. Provincial governments have attempted to fix these through various methods, but most solutions have resulted in unsustainable spending rates as they do not address wider issues that contribute to waiting times.



Canada



5.0%
population
growth



British Columbia

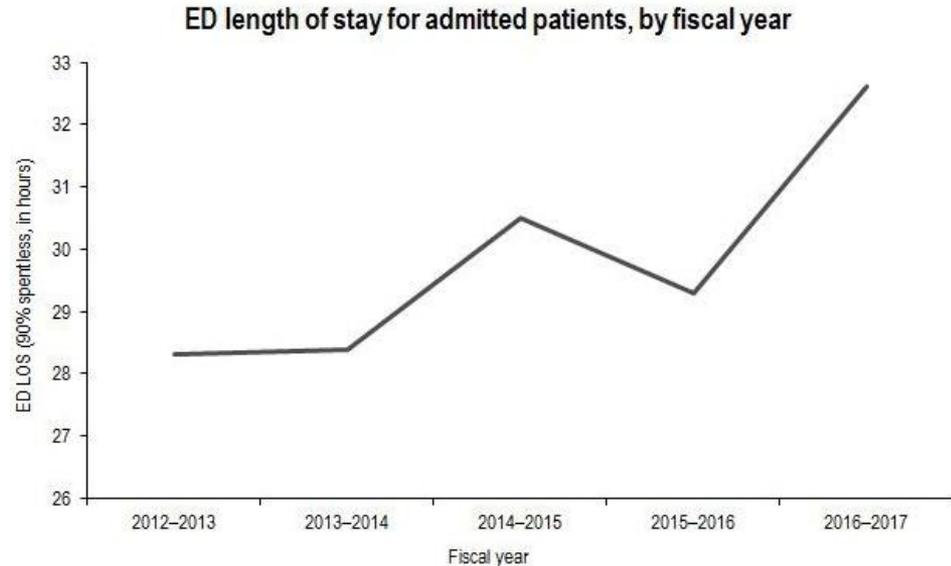


5.6%
population
growth

Why focus on ED Wait Times?

50% of patients admitted to the hospital come from the ED. The lack of access to community based resources means that patients otherwise free to be discharged continue to occupy ER space that should be used for other more acute patients. This further prolongs wait times in the ER meaning ambulances can no longer offload patients and elective surgeries are stalled. Slow ED wait times result in unnecessary financial burden on the healthcare system, worsened patient outcomes due to lack of immediate care, and occasionally the loss of Canadian lives. Solving this issue requires a multi-faceted and system-wide approach that targets multiple areas.

The Canadian healthcare system simultaneously ranks amongst the highest in the world in terms of costs while being one of the lowest in actual value. This imbalance poses a particularly difficult challenge for a country that provides universal health care with a single-payer system.



Factors That Contribute to Increased Wait Times

One of the biggest constraints for healthcare facilities is a lack of funding to implement new strategies that can help alleviate pressure at those bottlenecks. Keeping this in mind, we tried to keep our **multi-intervention suggestions** as low-cost as possible, doing our best to **identify and maximize existing resources**. In order to implement sustainable solutions that are applicable on a large, multi-level scale, we rely on ED's to embrace change and commit to improving systems that are currently already in place.

Part of the problem

Not all causes of longer waiting stem from within the ED itself. We've identified the following three external factors that we think are **sizeable contributors** to longer waiting times:

1. A shortage of family doctors and clinics
2. Basic, non-emergent services such as vaccinations, STD tests, or blood pressure tests not being offered elsewhere
3. Side effects of a growing aging population, the population segment twice the greatest need for emergent services

Emergency Department Process

In order to understand the reasons behind long waiting times within ED's, we must identify key pressure areas.

There are two paths for patients who arrive to the ED, walk-in ($\frac{2}{3}$ of the patients) and ambulance patients ($\frac{1}{3}$ of patients).



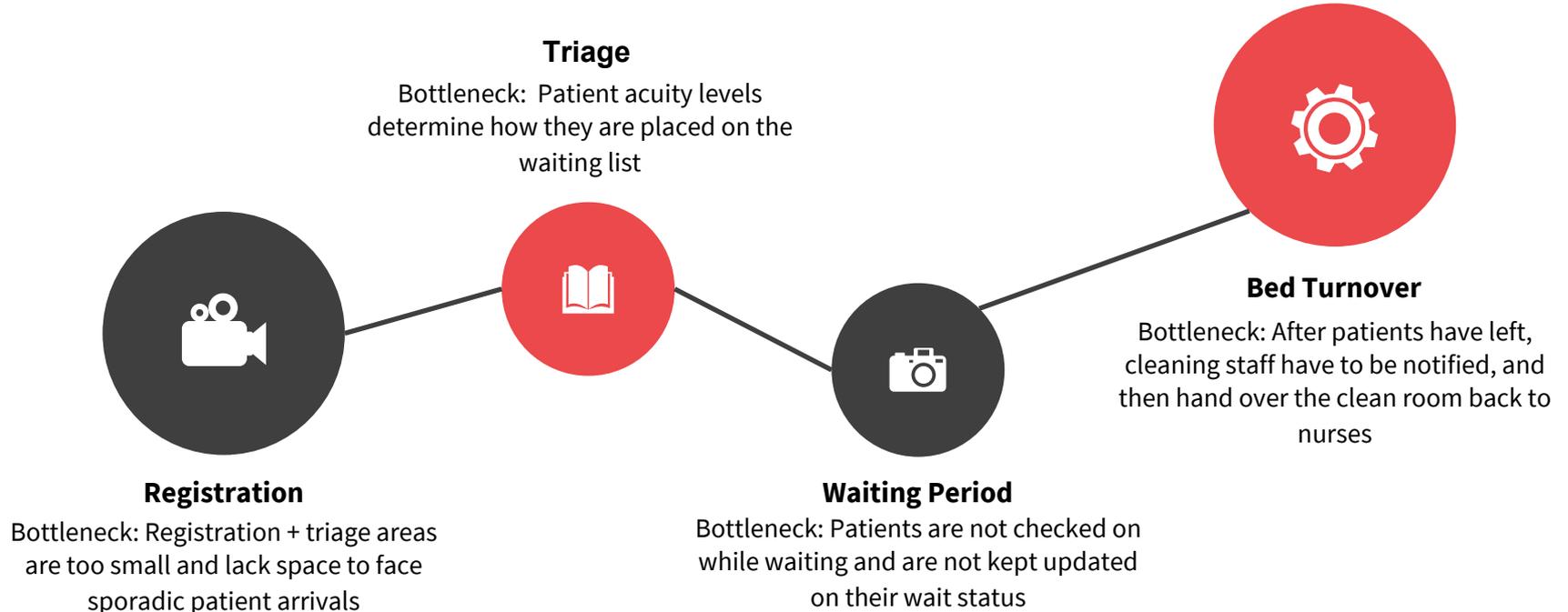
Questions that have directed our research into waiting times:

- What kind of **issues** are people going to the ER for?
- What percentage of these are **non-emergent and could be directed elsewhere**?
- What other **external** and **internal** factors could influence waiting times?

The ambulance patients usually get a triage in the ambulance and once they arrive to the ED they are redirected to an emergency care room, area specialty room or to the observation area, depending on the acuity and type of care needed. The walk-in patients remain in the waiting room until they are transferred to a triage room. The registered nurses (RNs) conduct the first examination of the patient. The necessary samples are taken, the care priority is established, the necessary documentation is filled and the routine each patient needs before they are seen by a physician is established. After this triage process, the patient is registered and sent back to the waiting room or to a designated specialty room (surgery, orthopedics, medicine or children). Once the patient has arrived to the room, they wait to be examined by a physician and thereafter to be sent at home or to take additional laboratory samplers or X-Ray scans (in the case of orthopedic patients).

Bottlenecks

We found that many of the delays in the ER were caused by several bottlenecks that occurred from the arrival of the patient to the ER till the time of discharge. Some of the bottlenecks were at registration, and bed turnover. The current systems in place were not built to efficiently deal with an influx of patients at these points (Goienetxea; Ruiz; Urenda; Ng, 2015).



Other Interventions In Practice

Past attempts to reduce ER wait times have mostly focused on changing only a single hospital component, hoping for a trickle down or domino effect across the system. While such efforts have seen to provide some positive feedback, their strategies are not a broad systems-based approach so results only apply to one part of a larger system with both internal and external factors playing a role. Some examples of past implementations are seen below:

Pay for Performance

- Financial incentives by federal and provincial governments for ED's to keep their waiting times within the given limit. This resulted in some short term success with patient waiting times decreasing but it was at the cost of patient-physician time. Meaning long term this saw a decline in quality of time spent with patients.

Late Night Walk-in Clinics

- Walk-in clinics normally close at approximately 6pm in the Lower Mainland. Some pilot testing of walk-in clinics have shown that they could potentially alleviate stress from ED's. Implementation would require a significant budget.

Provincial Wait Time Websites

- While these are a good start, statistics show an overall decline in app downloads and that according to WaitTimeAlliance, websites are not being used to their full potential.

Using Artificial Intelligence for Predicting Demand and Supply Levels

- A great platform for optimizing the flow in ER's between incoming as well as outgoing staff and patients. Such software developed by startups like AnalyticsMD are great but can also require a large financial investment.

ER Overflow Alert: Recommend calling 1 night shift nurse 1 hour early at 6PM. See more details at analyticsmd.com/ad3dd3

The Triage System: How Optimization Can Reduce Wait Times

The Canadian Triage & Acuity Scale (CTAS) is a tool that enables Emergency Departments (ED) to:

- Prioritize patient care requirements
- Triage patients according to the type and severity of their presenting signs and symptoms
- Ensure that the sickest patients are seen first when ED capacity has been exceeded due to visit rates or reduced access to other services
- Ensure that a patient's need for care is reassessed while in the ED

What is Triage?

Triage is the first point of contact between patients and nursing staff upon arrival into the E.D (MTG, 2014). This is where the triage nurse will assess the patient's condition and take a measure of vitals. These results will then determine how long a patient will wait in the waiting room (if at all).

How does Triage Lengthen Waiting Times?

Patients have to be assessed for a variety of measures including using the Canadian Triage and Acuity Scale. From there, patients are assigned an Emergency Security Index (ESI) level that determines their risk level and whether they need urgent care or can wait.

How Can We Optimize Triage?

According to Dr. Eric Grafstein of Vancouver General Hospital, 90% of the time nurses can tell ailment severity from the first look at a patient. By cutting down the time taken for this process, several minutes reduced per patient seen can be turned into hours saved over the course of a day.

Recommendation 1

Triage Re-design + Addition of a Pivot Nurse

Proposed intervention: Quicker triage through the addition of a pivot nurse

Due to a significant amount of time being spent at the triage area, the transformation of the role of a current front-end nurse into a pivot nurse can decrease wait times according to our extensive literature review. A pivot nurse can provide a “**quick look,**” during which an ED nurse makes acuity decisions within a few minutes of patient arrival, followed immediately by the direction of patients to appropriate locations and resources within the department.

During triage, patients are normally monitored for: chief complaints, full vital signs, medical and surgical history, medication history, suicide risk, abuse risk, acuity level, heart rate, and oxygen saturation. **A pivot nurse could shorten this process** (without reducing care) by only looking at: heart rate, oxygen saturation, chief complaints, and acuity level. Full vital signs and other factors are assessed once the patient is accepted into the bed area, therefore, not leaving the patient to have to go through this process multiple times.

A pivot nurse would only require:

- A privacy screen + space near front of E.D.
- Wireless phone for communication
- Computer for logistical tasks

Benefits of a Pivot Nurse



01

Can quickly assess patients and prevent overtriaging

Quick assessment leads to more patient intake and quicker door to physician times and less waste of resources.

02

Can greet patients right away and inform them of E.D. processes

This can lead to improved patient satisfaction rates as they are kept informed and safe while they wait.

03

Can monitor patients as they wait

Patients are monitored while they wait and if their condition deteriorates in the waiting room, pivot nurses can alert staff and expedite patient care.

04

No new staff hire required

The pivot nurse is simply a re-vamped role of a front-end nurse.

05

Screens out non-emergency patients

The pivot nurse makes it faster and easier to deliver care to those who need it most.

Recommendation 2

Bed Turnaround Time

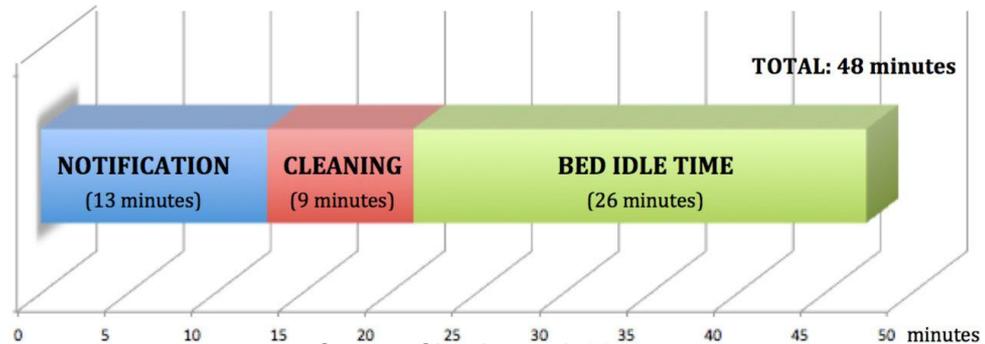
"We think that there might be some concern or issue around availability of beds for people to be admitted into. So the fact that beds may not be freeing up as quickly as they could be so that the (ER) patients could then move into them is another question"

- CIHI's Juliana Wu

Proposed intervention: Walkie-talkie connection between cleaning staff and front-end nurses

70% of all critical events and delays in patient care could be traced to communication breakdowns. CRICO looked at 23,000 medical malpractice lawsuits and cited communication as the main culprit in over 7,000 of these cases.

As (Chartier et al., 2016) find in their case study of hospitals in Toronto, there is a significant delay between cleaning done by cleaning staff and the turnover of beds to the next available patient. One of their key findings was to implement an efficient communication system between cleaning and nursing staff to reduce bed idle time which proved to be effective.



Source: Chartier et al, 2016



Challenges

Through our research we discovered a few missing links that pervade throughout ER waiting time interventions, as well as our own basic knowledge of the Canadian healthcare system at large.

- Piloting time. Our recommendations would need to be heavily piloted in order for us to note change. There may be ways to improve upon our recommendations that are suggested by front-end staff.
- Our approach will have to be well communicated with staff in order for them to easily adapt to our proposed changes

Other Opportunities: Expanding Availability of Health Care Services

Expanding clinical services and increasing the networks through which they are offered can **alleviate current and future pressures** of Emergency Rooms. The aim here is to maximize the use of facilities that **already exist in the system**.

Recommendations

- Outsourcing services for non-emergent issues to other facilities

Avenues

- Shoppers, London Drugs
- Clinics
- Family doctors

Effects

- Increases awareness through daily activities
- People with less acute issues not going to the ER can decrease pressure on ER staff and resources (such as beds) thus lessening waiting time
- Presents lower costs for ED's and allows for more patient-doctor time for emergency cases



Patients going to the ER often require more basic services but since there are not enough clinical service alternatives, there's a **large % of non-emergent patients**. A high proportion of patients may go to their local ER because they **don't have a family doctor** or can't get a timely medical appointment

"I think a problem is a lack of family docs, it's a lack of accessibility to the system, so they end up in the emergency room".

- Rick Lundy, Founder of the Open Arms Patient Advocacy Society

Future Approaches



London Drugs and Shoppers pharmacies currently already offer services that were traditionally provided by primary caregivers such as a family doctor, in a clinic or in the ER. Services like travel shots, vaccinations, flu shots, blood pressure measurement, STD and pregnancy tests are all basic non-acute services that can all be expanded upon. By disseminating information through provincial healthcare websites, emails and institutions on the services available, healthcare consumers can make more informed actions on whether they really need to go to the ER. Looking into developing service agreements for pharmacists is a gap we have identified as being of great importance in a systems-based approach to decreasing ER wait times.

In the U.S., Walgreens is now the country's largest retail drugstore after investing and partnering with companies like UnitedHealth Group's MedExpress to provide urgent care facilities that are physically connected to Walgreen stores. This allows healthcare consumers a very convenient way to access clinical services. Walgreens pharmacies even treat minor injuries such as sprains and burns as well as skin conditions.



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