



## EMERGENCY ROOM WAIT TIMES in British Columbia



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## THE PROBLEM BREAKDOWN

### CANADA

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. 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.

### IMPACT

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 GAPS & LEVERS OF CHANGE

### CONSTRAINTS

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 ER's to embrace change and commit to improving systems that are currently already in place.

### EMERGENCY DEPARTMENT PROCESS

Ambulance: 1/3 of patients

Ambulance patients receive a triage in the ambulance and are directed to proper care room on arrival.

Walk-in: 2/3 of patients

Walk-in patients remain in the waiting room until transferred to a triage room. Post-triage, walk-in patients are sent back to the waiting room to await further instruction.

### PAST SOLUTIONS

#### 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.

## THE SOLUTION BREAKDOWN

### The Triage System - 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).

### The Triage System - 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.

### The Triage System - 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.

### 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.