Learning and Development Portfolio

PREPARED BY: Boris Fucic

PREPARED FOR: Theodore Tolias

2012.05.12

Catherine Brown,

This past November your Ministry, the Health Systems Accountability and Performance Division came to us with several concerns regarding the stagnating state of Ontario's current ER wait time reduction strategy. Although proud of the progress made to date, you identified the need for new and revolutionary solutions to the problems that Ontario faces.

After considering the problem in detail and closely examining all of our stakeholder groups, I am certain that these problems are symptoms of a much larger systematic problem faced by our health care system. As Albert Einstein once said, "The significant problems we face cannot be solved at the same level of thinking we were at when we created them."

Over the course of the past several weeks, our team looked at the relationships between numerous critical problems and selected two core issues plaguing this province's emergency rooms (ER's). The first and foremost area of concern is the unavailability of hospital beds. This critical and oftentimes ignored element is the most problematic issue driving ER inefficiencies today. The second area of concern is the unavailability of alternate health care facilities such as Walk-In Clinics, Family Physicians and most importantly Urgent Care Centres.

With these two problems in mind, we focused our attention on ways in which we can maximize our impact and really bring forth the greatest value with our recommendation. Our approach was two-fold, finding ways to benchmark our performance with organizations outside of our industry and consolidating numerous solutions into an optimal solution.

As our first recommendation, we propose that Ontario move towards a fully integrated Bed Management System. This inventory based solution is based upon Amazon's inventory management system which would allow hospitals to track performance independently while allowing regional hospitals to pool beds. This would allow hospitals to better accommodate patients with life-threatening emergencies. Additionally, this system would also encompass ambulances in order to optimize their hospital selection process and thereby further reducing wait times. The key benefit of this solution is that the data generated can be mined by our hospitals in order to drive continuous improvement initiatives.

Our second recommendation involves the building of Urgent Care Centres in hospitals with existing Emergency Rooms. We recognize that this is a drastic shift to the way things are done today, but the demarcation of these two facilities is instrumental. Currently, our hospitals are bottlenecked by patients that come to Emergency Rooms with minor or urgent but non-life-threatening needs. This eats into Emergency Room productivity, impacts triage and slows down ER physicians. By placing Urgent Care Centres in the same hospitals as our ER's, those with minor conditions can simply be directed or moved to their appropriate centre.

We understand that these solutions require a significant amount of investment and due to that fact; we have included the foundation for implementing these solutions in a low-cost, low-risk pilot environment that will allow your team to generate buy-in before going into a full implementation.

We are very excited about the opportunities presented by our recommendations and look forward to putting them into action!

Sincerely yours,

Boris Fucic

Emergency Room Inefficiencies

PREPARED BY: Boris Fucic - 206851604

PREPARED FOR: Theodore Tolias

2012.05.12

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APPENDIX – UNDERSTANDING THE PROBLEM

PURPOSE

The *Understanding the Problem* appendix was included to illustrate the steps undertaken at the start of the review. It illustrates the environment that Ontario's Emergency Departments are operating in. This appendix shows the fundamental research conducted for the analysis. The divergent thought process consisted of a detailed stakeholder analysis that takes the reader through the first few steps of the framework developed in class. The steps shown are: Understanding the Problem, Problem Identification and Problem Statement.

METHODOLOGIES APPLIED

This phase consisted of a stakeholder analysis.

SOURCES

(Laupacis & Born, 2011)
(Morgan, 2012)
(Office of the Auditor General, 2010)

KEY DISCOVERIES/IMPLICATIONS

This section includes the background research and knowledge that propelled the examination towards the core of the problem statement. The key discovery was that Emergency Rooms are dynamic, complicated and most importantly a part of a much larger system. This initial assessment indicated that fixing the symptom(s) is impossible without fixing the system at large.

Understanding the Problem

Stakeholder Perspective

Figure 1 - Stakeholders

In order to better understand what and whom the potential issues may impact, a detailed analysis of all Emergency Department stakeholders was completed. This initial scan provided a solid foundation for further analysis.

Problem Identification

The problem put forth by the Ministry of Health states that although a great amount of progress has been made by the province with regards to ER Wait Times to date, they are now experiencing difficulties finding further inefficiencies in the system. The current wait times for complex conditions is 10.9 hours (provincial target - 8 hours) while minor and uncomplicated conditions are 4.1 hours (provincial target - 4 hours).

It is important to note that the complexities surrounding hospital admissions and Emergency Room efficiencies are not straight forward activities but rather elements of a multifaceted environment.

"The effectiveness of emergency departments is heavily dependent on other hospital departments and specialists." (Office of the Auditor General, 2010). Additionally, "When there aren't any available hospital beds into which to admit sick patients from the emergency department, or if patients do not have access to a primary care provider, emergency departments fill up and become overcrowded. Because of this, there are no easy solutions to reducing emergency department wait times." (Laupacis & Born, 2011)

Although the province is to be commended for making the progress they have, the issue at hand is much greater than just Emergency Room overcrowding or system inefficiencies. The overcrowded ER's are a symptom of much greater systematic problems in this complex environment that cannot be fixed by merely focusing on reducing wait times

Problem Statement

The inefficient operation of Ontario's Emergency Rooms is a symptom of much greater systematic problems within Ontario's health care system.

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APPENDIX – PROBLEM SUB-ISSUES

PURPOSE

The *Problem Sub-Issues* appendix was included to illustrate some of the key findings of the research conducted. This research set the foundation for further divergent analysis and fact finding. Essentially, this step illustrates what are considered to be the most important linkages between the issues faced by Ontario ER's.

METHODOLOGIES APPLIED

This phase consisted of an Issue Tree for Hospital Wait Times.

SOURCES

(Chan, Schull, & Schultz, 2000) (Emergency Department, 2012) (Inventory Management - Amazon, 2010) (Laupacis & Born, 2011) (Morgan, 2012) (Office of the Auditor General, 2010) (Smith, 2012)

KEY DISCOVERIES/IMPLICATIONS

The issue tree was instrumental towards the understanding of the core issues and how they relate to each other. This step set the stage for further analysis and really provided a detailed overview. This research allowed for some prioritization and priority development.

PROBLEM SUB-ISSUES

In order to further analyze the different facets of the identified problem, the problem was decomposed into numerous sub-issues for further analysis.

INSUFFICIENT STAFFING

"Appropriate staffing levels are essential to the efficient and effective operation of emergency departments; inadequate staffing can clearly contribute to emergency-department wait times. There are no provincial standards for determining emergency department staffing requirements. Each emergency department makes staffing decisions based on its patient numbers and average levels of patient acuity." (Office of the Auditor General, 2010)

Too Few Doctors

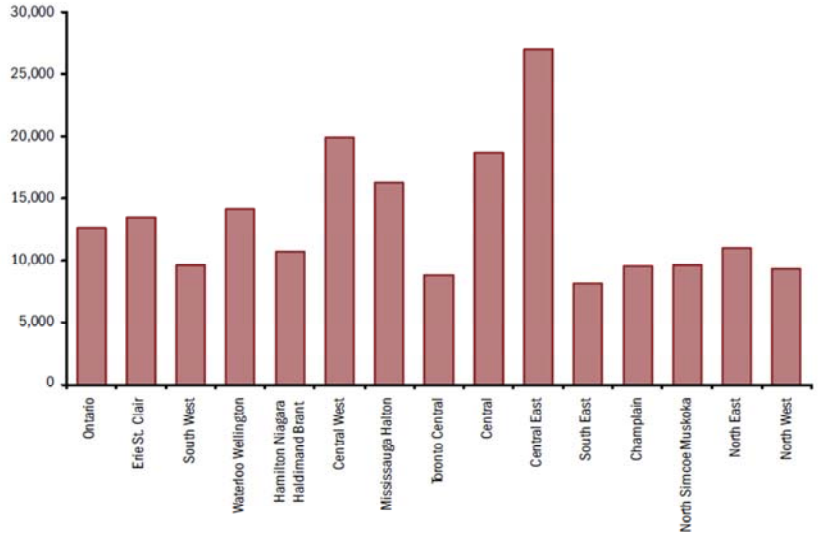

Figure 2 - Number of People per Emergency-department Physician (LHIN, 2008)

From the diagram above, it is apparent that we in Ontario do not suffer from a shortage of doctors. There is significant consideration to be given to the scope of responsibilities that doctors have in our hospitals. However, one thing is certain; we have enough doctors to treat those in our ER's.

Another area of concern is the shortage of staff in general. This can be seen by the fact that Ontario has unacceptable levels of overtime with nurses and nurse practitioners. Many hospitals have chronic overtime problems, especially when finding staff to fill nursing schedules at nights and/or during weekends and holidays. These hospitals often incur extra costs to pay nurses overtime. Furthermore, a significant number of emergency-department nurses consistently work overtime and take extra shifts, not only leading to additional costs but also increasing the risk of staff burnout. (Office of the Auditor General, 2010)

Finally, consider the fact that the elderly use more ED services per capita than younger individuals, and that their rate of use is rising – it is clear that this problem will only be exasperated as our population continues to age and as the burden on the ED system increases. (Chan, Schull, & Schultz, 2000)

Employing staff that is overworked and the lack of standard staffing requirements set by the province are both elements that tie back to Emergency Room wait times. As hospitals are pushed into setting staffing levels at what are now deemed to be appropriate levels of overtime and chronic understaffing.

TOO MANY PATIENTS IN EMERGENCY ROOMS

Table 1- Percentage of Emergency Department Visits by Type

Level	Acuity	Examples of Patient Symptoms	% of Emergency Dept. Visits
1	resuscitation	• cardiac and/or pulmonary arrest • major trauma (severe injury and burns) • unconscious	0.6
2	emergent	• chest pain with cardiac features • stroke • serious infections	12.9
3	urgent	• moderate abdominal pain • moderate trauma (fractures, dislocations) • moderate asthma	39.0
4	less urgent	• constipation with mild pain • ear ache • chronic back pain	39.0
5	non-urgent	• medication request or dressing change • sore throat • minor trauma (sprains, minor lacerations)	8.5

Based on studies conducted, Canada is amongst the top regarding the number of hospitals Per Captia. (Chan, Schull, & Schultz, 2000) The issue that is a greater concern is the use of our Emergency Rooms. As seen in the diagram above, the greatest percentage of the patients who visit ER's are those that fall into the "Urgent" or "Less Urgent" categories. This brings to light one of the fundamental problems, 78% of those that visit Emergency Rooms should be going elsewhere.

Too Few Alternate Health Care Facilities

* For the purposes of this report, "Alternate Health Care Facilities" include; walk-in clinics, family doctors and urgent care centres.

"…province-wide, about half of emergency-department visits were made by patients with less urgent and non-urgent needs, who could have been supported by other alternatives such as walk-in clinics, family doctors, and urgent care centres. We estimated that such patients took up 30% of emergency-department physician time, which could have been spent on patients with more urgent conditions." (Office of the Auditor General, 2010)

Overall, about 90% of patients who visit Ontario's emergency departments are discharged after receiving care, with only about 10% admitted to hospital. (Laupacis & Born, 2011) Contrast this that with the chronic lack of family physicians and a clear picture emerges. We need more alternate facilities! The need for accessible alternate facilities and the proper communication strategy for the public are fundamental elements that will resolve this problem. One step may be according to certain sources, "The creation of rapid assessment units for less ill patients." (Laupacis & Born, 2011) When taking all this into consideration, it is easy to see the complexity of this problem and further understand that an issue such as this will not have an overnight solution.

To complicate matters even further, "17% of in-patient beds were occupied by alternate-level-of-care patients, who no longer required hospital care but could not be discharged because of the lack of services and supports available in the community." (Office of the Auditor General, 2010) The goal would be to keep these seniors and others who really belong in long-term care facilities or at home with appropriate support services from taking up much needed space in expensive acute-care hospital beds. "As we free up beds in the hospital by getting (those) patients the care they need outside of hospital, we're starting to see a smoother flow through the emergency department," (Smith, 2012) This paints a staggering picture of

the state of existing infrastructure to support our Emergency Rooms. Currently, all those without a place end up sitting in acute care and creating a back-log that further increases wait-times.

POOR METRICS

Poor metrics plague the medical profession. This is a problem that is especially evident in the Triage step of the Emergency Room where due to the hectic nature of the work itself and the lack of staff, it becomes difficult to obtain real and accurate information. Without proper metrics, it becomes tremendously challenging to focus on continual improvement.

"The higher the triage acuity level, the sooner nurses and physicians should assess the patient and the sooner treatment should commence. Our review of files at the three hospitals indicated that high-acuity patients sometimes waited for over six hours after triage before being seen by nurses or physicians. …. We noted that these timelines were often not recorded or adhered to." (Office of the Auditor General, 2010)

Overall, in hospitals, reporting exists for procedures in obstetrics and Gynaecology and Plastic Surgery. Progress is lacking on any provincial reporting for such specialties as chronic pain (anaesthesiology), gastroenterology and psychiatry. (Chan, Schull, & Schultz, 2000)

Lack of Modern IT Systems and Management Methods

To ensure the efficient use of the ambulance Emergency Medical Services (EMS) and to enhance co-ordination between EMS providers and emergency departments, the Ministry of Health and Long-Term Care should:

- *determine whether the recommendation in the 2005 expert panel's report on ambulance effectiveness of a benchmark ambulance offload time of 30 minutes 90% of the time should be accepted as a province-wide target;*
- *work with hospitals, EMS providers, and Cancer Care Ontario to improve the validity and reliability of ambulance offload data and to ensure that such data are standardized, consistent, and comparable; and*
- *work with hospitals and EMS providers to evaluate on a province-wide basis the effectiveness of the Offload Nurse Program in reducing offload delays and improving patient flow within emergency departments.* (Office of the Auditor General, 2010)

This recommendation, coming out of the Auditor General's Office should not be taken lightly as it points to a specific source of issues that stem at the very beginning of the chain of events that lead to the overcrowding of hospital Emergency Rooms. Thirty minute unload times are not common place in Ontario, much less 90% of the time.

POOR DIAGNOSIS

The authors of [a] study also speculated that spending less time with patients can mean time-consuming but important tests may not be ordered, observation times may be shortened and arrangements for follow-up after discharge may be incomplete. (Laupacis & Born, 2011)

Table 2- Recommended Times from Triage to Nurse Assessment, Physician Assessment, and Nurse Reassessment

CTAS Level	Acuity	Time from Triage to Nurse Assessment	Time from Triage to Physician Assessment	Frequency of Nurse Reassessment	Response Time Target* (%)
1	resuscitation	immediate	immediate	continuous care	98
2	emergent	immediate	≤ 15 minutes	every 15 minutes	95
3	urgent	≤ 30 minutes	≤ 30 minutes	every 30 minutes	90
4	less urgent	≤ 60 minutes	≤ 60 minutes	every 60 minutes	85
5	non-urgent	≤ 120 minutes	≤ 120 minutes	every 120 minutes	80

* The response time target rate is the percentage of times in which the standard can reasonably be expected to be met.

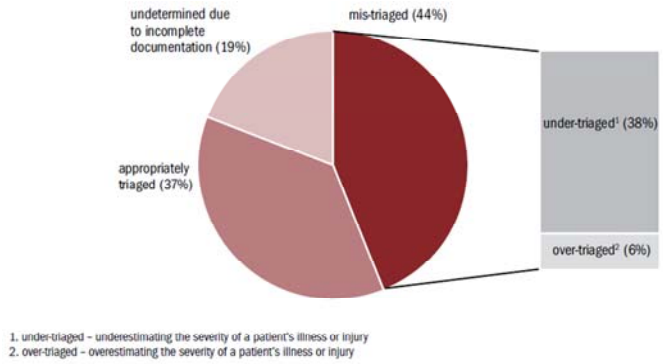

Figure 3 - Results of Triage Audits Conducted at Three Emergency Departments
(Office of the Auditor General, 2010)

Readmission into hospital

"The Canadian Triage and Acuity Scale (CTAS) guidelines recommend that patients be triaged within 10 to 15 minutes of arrival at the emergency department, yet in all three hospitals we visited, some patients waited more than an hour to be triaged. We also noted that in about one-half of the files that were reassessed by the hospital nurse educators, the CTAS levels originally assigned by triage nurses were incorrect. Of these, the majority was under-triaged: in other words, triage nurses underestimated the severity of the patient's injury or illness." (Office of the Auditor General, 2010)

The sheer fact that 44% of those that enter a hospital are mis-triaged is a worrying statistic. Not only is the health of those patients at stake, but also the fact that those same patients will have to be re-assessed or re-admitted into a hospital. The poor diagnosis and the constant need for re-admittance are two clear factors that lead to and propagate the inefficiencies found within our Emergency Rooms and drive up operating costs.

TOO FEW HOSPITAL BEDS

To ensure that vacant in-patient beds are identified, cleaned, and made available on a timely basis to admitted patients waiting in emergency departments:

- *hospitals should have an effective process in place to identify vacant beds and communicate their availability between in-patient units and emergency departments* (Office of the Auditor General, 2010)

This lack of information surrounding vacant beds is further compounded by the fact that in-coming patients are not admitted on-time further slowing paramedic turnaround and forcing ill patients to sit in Emergency Rooms or ambulances without being triaged. *"Not being able to move patients requiring admission into beds in an in-patient unit is one of the key causes of delays in treating emergency-department patients. Across the province, from April 2008 to February 2010, time to in-patient bed did not improve significantly…"* (Office of the Auditor General, 2010)

"Our review found that paramedics often had to stay in emergency departments for extended periods of time and care for their patients while they waited for an emergency-department bed or until emergency-department nurses could accept the patients…" (Office of the Auditor General, 2010)

Better integration is required to ensure that bed cleaning is initiated as soon as it becomes available. Once cleaned, we must ensure that the next patient is admitted in a timely manner. This is a fundamental problem as the average bed-empty time in hospitals may be as high as 5.5 hours. (Office of the Auditor General, 2010)

There are several elements at play in the issues surrounding Ontario hospital beds. It is apparent that hospitals lack the quantifiable metrics systems to track beds and vacancies. In essence, the problem is not the lack of beds but rather a system

for tracking which beds are available and which beds are in the cleaning process. The lack of bed availability is a central issue regarding hospital wait times and it greatly exacerbates any other problems faced by the hospitals.

LACK OF FOCUS ON PATIENT CARE

The lack of focus on Patient Care is a reoccurring theme in all Emergency Department literature. Fundamentally, it ties into the roots of all of the other problems and cannot be changed very easily. It is apparent that Ontarians put their life safety at risk due to the fact that our Emergency Departments are overworked and understaffed to complete the tasks that they have been pushed into.

To ensure that emergency departments are providing high-quality emergency care to all patients, hospitals should:

- *promote a culture of patient safety by using a non-punitive and "lesson-learned" approach to ensure that adverse events are reported and summarized for analysis and corrective actions; and*
- *follow up with patients who have been triaged as having serious medical conditions but who have left emergency departments without being seen by doctors or having completed treatment.* (Office of the Auditor General, 2010)

The authors estimate that if the average length of stay in the emergency department was an hour less, about 150 fewer Ontarians would die each year. (Laupacis & Born, 2011)

Below is the causal analysis employing the, "Issues Tree" Technique (Morgan , 2012) to draw out the issues pertaining to ER Inefficiencies in Ontario. The original diagram had numerous additional sub-issues that were excluded from the analysis as no data could be found to support them or they were not believed to be elements that could be changed by the Ministry of Health. The diagram depicted showcases the key elements believed to be the leading causes for the problems faced by Ontario ER's.

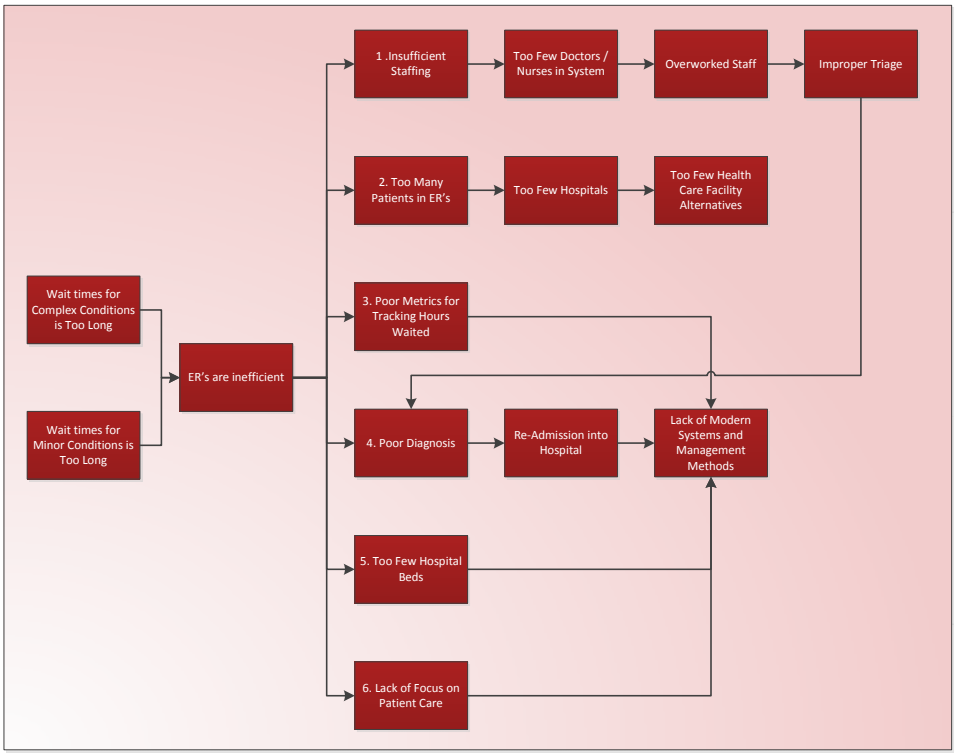

Figure 4 – Issue Tree for Hospital Wait Times

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APPENDIX – 15% - SELECTING THE CORE ISSUES

PURPOSE

The *15% - Selecting the Core Issues* appendix was included to showcase the selection process of the two core-issues. The main focus of this area is to illustrate the thought process behind the two sections and to provide additional insight into the relationships between each of these issues. Finally, this section also determines the relationship between this issue and all of the other issues listed in the appendix before.

METHODOLOGIES APPLIED

This phase consisted of two examples of brainstorming.

SOURCES

(Morgan, 2012)

KEY DISCOVERIES/IMPLICATIONS

Brainstorming allowed us to define, “Unavailability of Hospital Beds” and, “Unavailability of Alternate Health Care Facility” as the two Core Sub-Issues. Additionally, the analysis was instrumental to obtaining an understanding of the core issues and how they relate to each other. Finally, this analysis shed light on the far reaching consequences of these issues and how the resolution of each issue would benefit health care in Ontario, beyond just the reduction of wait times.

15% - Selecting the Core Issues

Looking at the sub-issues presented, further analysis was conducted to determine the Core Issues. The two issues selected each focus on Emergency Room wait times, however one is meant to alleviate wait times for Minor Conditions while the other focuses on Complex cases.

For the purposes of this report, all of the issues listed above were considered however, the two listed below were deemed to be the "15% Issues" (Morgan , 2012). They are considered to have the greatest impact on the core problem at hand while also positively impacting several of the other remaining problems.

Complex Condition - Wait Time

- Unavailability of Hospital Beds is a critical component in the overall wait time and is an issue with far-reaching implications for other problems with Emergency Rooms, as shown below.

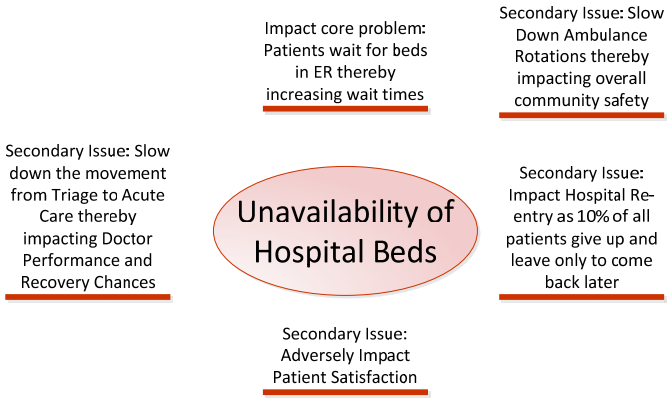

Figure 5 - Brainstorming: Unavailability of Hospital Beds

Minor Condition – Wait Time

- Unavailability of Alternate Health Care Facility is a primary issue with other down-stream implications, as shown below.

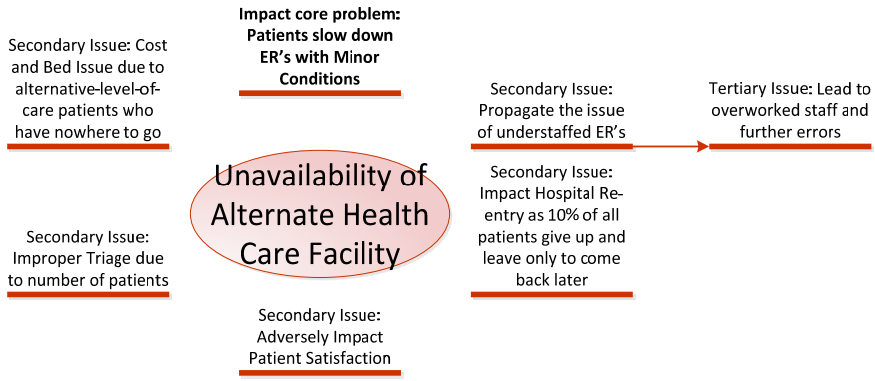

Figure 6 - Brainstorming: Unavailability of Alternative Health Care Facility

As demonstrated above, the unavailability of Hospital Beds and the unavailability of Alternate Health Care Facilities are the two core-issues that if resolved properly would have drastic and truly impactful consequences for not only Emergency Room Operations but health-care in Ontario at large.

The complexity of these issues poses a challenge for resolution, and the next portion of this report will guide us through an analysis towards two successful resolutions.

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APPENDIX – STRETCH BENCHMARKING – INVENTORY MANAGEMENT AT AMAZON

PURPOSE

The *Stretch Benchmarking – Inventory Management at Amazon* appendix was incorporated to showcase the line of thought that led to the final recommendation regarding ER wait times for complex conditions. This section was also used to describe the specific elements of the solution that lead to the outcome. Although, not intended to be a technical analysis, some research was done to showcase the advanced capabilities of Amazon's inventory management tools. Finally, this component was also added to bring forth the benefits of the proposed solution.

METHODOLOGIES APPLIED

This phase consisted of Stretch Benchmarking as illustrated by Gareth Morgan.

SOURCES

(Morgan, 2012)
(Inventory Management - Amazon, 2010)

KEY DISCOVERIES/IMPLICATIONS

The Stretch Benchmarking allowed for comparisons to an organization outside of the Hospital Industry or public sector. This analysis proved to be very fruitful in terms of the options that it opened. Although outside the scope of this document, the implications of this solution hold many "gems" that could realistically be incorporated with great results.

STRETCH BENCHMARKING – INVENTORY MANAGEMENT AT AMAZON

To resolve the issues surrounding the unavailability of Beds at Ontario Hospitals, an approach was taken to look at the core of the problem, which was essentially inventory management. To do this effectively, the decision was made to find an organization that is an industry leader in this area and benchmark against them. Effectively we wanted to understand what they do and how they do it.

Amazon has a fully integrated inventory platform which encompasses their 10 large warehouses (5 million square feet) as well as the inventories of numerous suppliers. The types of inventory on-hand vary from books to office furniture. The investment into software solutions for inventory management was a critical component to tracking items and more importantly tracking buying patterns. Amazon also focused on the automation of specific events in order to facilitate inventory management. (Inventory Management - Amazon, 2010)

RECOMMENDATION

Our solution would involve tracking all beds and their current status in all hospitals across the province. This information would then be made available to all Emergency Medical Services (EMS) staff in real-time thereby allowing them to make proper and educated decisions when transporting the critically ill. More importantly, EMS personnel will be able to book a hospital bed or emergency room slot prior to even arriving at the destination. By streamlining certain processes, other efficiencies should also materialize and aligning to our original goal, wait room times for complex conditions would decrease.

Benefits

- Emergency room capacity will be increased (greater number of beds) as the total number of beds will be split across a reasonably sized geographical area. For most areas of Ontario, the "golden hour" leaves a large amount of flexibility in terms of choices for the ambulance driver.
- Improved ambulance rotations as most injured personnel will have a spot designated to them prior to arriving at the hospital.
- Reduction in overall hospital re-entry as patients will be advised by the Emergency Room Physician in a more efficient manner.
- This system should provide for a more patient friendly environment which should improve patient satisfaction.
- Improved performance of Emergency Room by allowing doctors to see their patients faster.
- Allows hospitals to track metrics allowing for continual improvement initiatives as well as data mining opportunities which would allow hospitals to more efficiently predict future demand.

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APPENDIX – 5 WHY'S – UNAVAILABILITY OF ALTERNATE HEALTH CARE CENTRES

*Alternate Health Care Centres refers to Family Physicians, Walk-In Clinics, and Urgent Care Centres

PURPOSE

The *5 Why's – Unavailability of Alternate Health Care Centres* appendix was chosen to illustrate the line of thought that led to the final recommendation regarding ER wait times for minor conditions. This section was also used to describe specific elements of the solution that lead to the intended outcome of lowering ER wait times while also showcasing the specifics around other avenues considered. Although, not intended to be a thorough analysis, the "5 Why's Technique" determined the most effective and impactful solution. Finally, this appendix was also added to bring forth the benefits of the proposed solution.

METHODOLOGIES APPLIED

This phase consisted of a "5 Why's" Analysis as showcased in Garth Morgan's in-class presentation.

SOURCES

(Morgan, 2012)

(Office of the Auditor General, 2010)

KEY DISCOVERIES/IMPLICATIONS

The "5 Why's" Analysis allowed for a side-by-side review of numerous possible paths towards an area of focus for the final recommendation. This analysis proved to be effective as it drove specific areas of concern while also allowing "all-encompassing" solutions to be built. Although outside the scope of this document, the implications of this solution hold many hidden benefits that could realistically be incorporated with great results.

5 WHY'S – UNAVAILABILITY OF ALTERNATE HEALTH CARE FACILITIES

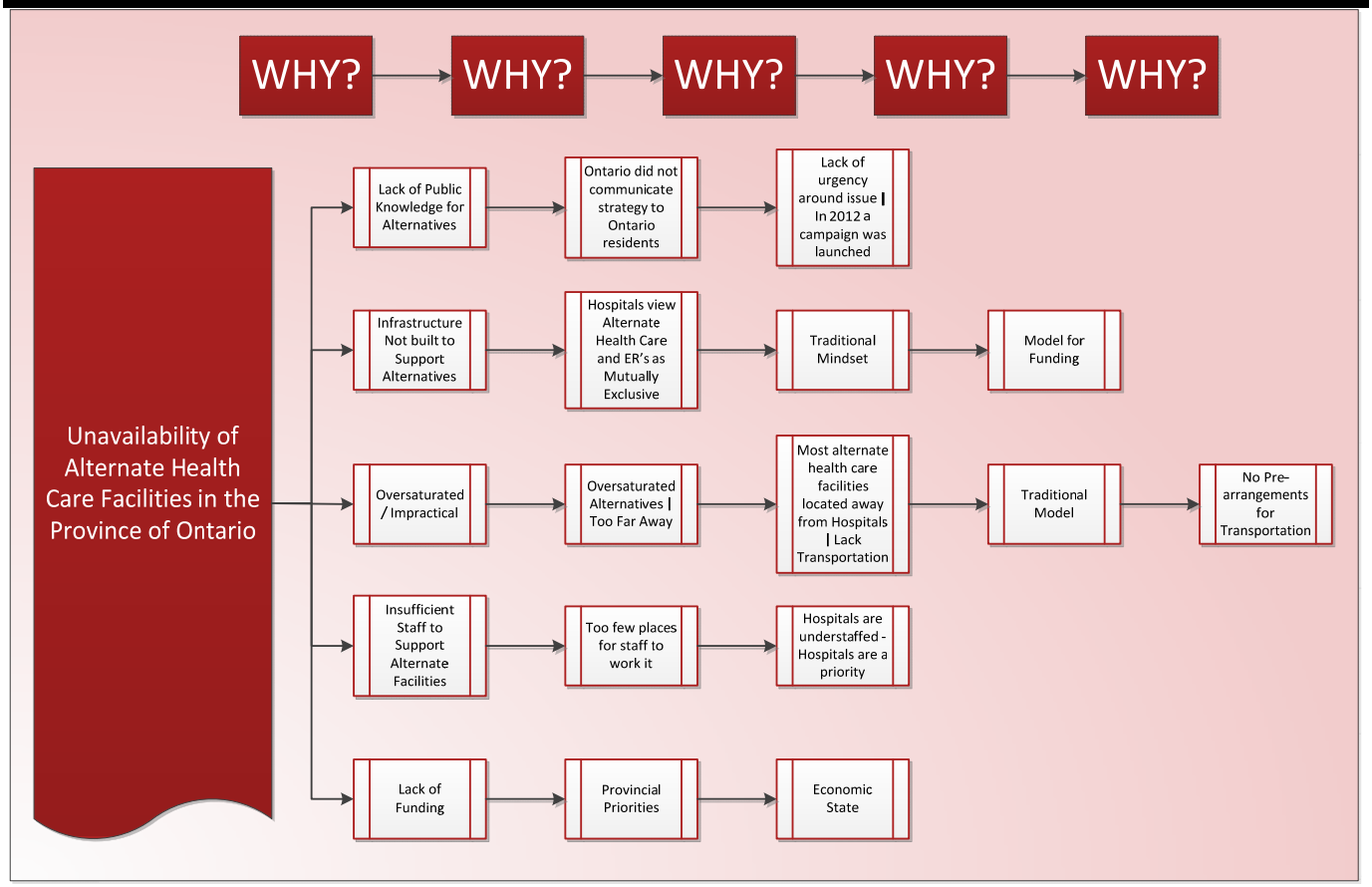

Figure 7 - Unavailability of Alternate Health Care Facilities
* Methodology as demonstrated by Garth Morgan (Morgan , 2012)

Looking at the summary above it is easily ascertained that the few options available to the Ministry of Health surround the issues of Public Knowledge, Infrastructure and Staffing. The issue surrounding public knowledge was already tackled in 2012 with a large advertising campaign. This meant that staffing and infrastructure are the two remaining options for consideration.

The concern over transportation and location of alternate health care facilities is considered pivotal as those are listed as the secondary reason regarding the lack of participation between ER's and Alternate Health Care Facilities. Accessibility to these centers would alleviate a lot of the pressure currently placed on ER's. Looking at the available statistics, about half of all emergency department visits are less urgent and non-urgent. These patients could easily be supported by walk-in clinics, family doctors and urgent care centres. Having these patients visit appropriate facilities could save physicians about 30% of their time. (Office of the Auditor General, 2010)

RECOMMENDATION

With this information in hand, moving towards a practical explanation with the greatest impact drives us to a solution that involves the decrease of transportation requirements while also facilitating the need for an alternate type of facility. This in essence arrives at a simple yet powerful solution - to place Urgent Care Centres within Hospitals that currently have Emergency Rooms.

Benefits

- Improve triage as there would be only one decision point between both an Urgent Care Centre and the Emergency Room.
- Patients already going between the Emergency Room and Urgent Care Centre could easily be moved from one area of the hospital to another.
- Urgent Care Centres can send staff to Emergency allowing for more flexibility with staffing.
- EMS would no longer be required to transport patients between Emergency and Urgent Care Centres, freeing up beds in the ER.
- Freeing up ER Physicians to focus on Emergency cases.
- Lowering wait times for both urgent and non-urgent cases.
- Lowering overhead costs (1 facility vs. 2 facilities).

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APPENDIX – HYPOTHESIS TESTING

PURPOSE

The *Hypothesis Testing* appendix was chosen to illustrate the first steps towards testing the effectiveness of the proposed recommendations. This section was also used to describe specific considerations to be taken into account in order to build out details of the proposed solution. Although, not intended to be a thorough record, the objective of the section was to provide a "flavour" of the thought process behind each of the recommendations.

METHODOLOGIES APPLIED

Use of experimentation to promote change.

SOURCES

n/a

KEY DISCOVERIES/IMPLICATIONS

Hypothesis testing is intended to provide a reasonable foundation for testing and experimentation. The essence of both Hypothesis tests is fundamentally the same. This should allow for easier adoption for those implementing the tests as there will surely be common methodologies between the implementations of the two recommendations.

HYPOTHESIS TESTING

BED INVENTORY MANAGEMENT

To successfully implement the bed tracking system we will need to test the effectiveness of the solution on a reduced scale. The recommendation put forth is for an initial assessment, followed by a pilot and finally a phased implementation. The steps outlined below are a more detailed explanation of the steps outlined:

- Assessment – This step would include the selection of two to three hospitals that are considered to be representative of all hospitals in Ontario. Essentially, any hospital that may fall on either side of the hospital "complexity bell curve" is to be excluded from consideration. This "curve" should be comprised of any number of factors and may include; number of beds, geographical area – population density, size of ER, number ER patients per year, etc...

  A pre-pilot assessment will allow our groups to do a real-time analysis of all processes that will be impacted by our implementation. We must ensure that the metrics captured are considered key indicators in the hospital industry, are relevant and encompass both upstream and downstream processes. Because the metrics associated to the hospital industry are so poor, an analysis of the current state, specifically associated to these hospitals would be best. This will put a "stake in the ground" and provide valuable before implementation statistics.

- Pilot Implementation – The purpose of this is to test the efficacy of the solution and to make any necessary alterations before proceeding towards the first phase of the implementation.

  Pilot groups would be established with all stakeholders including; ER Doctors, hospital administrators, nurses and any other groups that may have a vested interest in the success or failure of this system. This would allow us to generate buy-in for the project and make the appropriate adjustments for the latter phases.

  In essence, this pilot phase would be used to conduct minor experiments to see what works and what doesn't without having the entire project at stake. Allowing these groups an opportunity to fail on a small scale will generate the "15%" solutions we require to make this a success.

To ensure the success of our suggested implementation, we will need to ensure that we can demonstrate the improvements brought about by our implementation. Throughout the pilot phase, each of the metrics tracked during the assessment would continue to be monitored and recorded. As changes are made, we would be able to in order to have hard numbers to demonstrate the value generated. If the value is deemed to be sufficient, we may then proceed with the phased implementation plans.

ALTERNATE FACILITY

To successfully test the implications of adding an Urgent Care Centre to each hospital an approach similar to the Bed Inventory Management solution must be put in place. To generate the necessary buy-in from both staff and management, due diligence must be done before and after the pilot.

First, a hospital that represents a typical hospital in the province of Ontario must be chosen as a pilot to test with. Ensure that the hospital chosen does some sort of tracking in order to better understand seasonal trends and incorporate those into the metrics.

Second, a current state analysis must be completed in order to understand exactly how many patients enter an ER and how many are sent to Urgent Care. What up-stream impacts the ER has on the rest of the hospital and vice-versa. Understanding what the rates are at this point, is the only way that the changes made to the ER can be tracked, compared and adjusted.

Finally, for a period of several months, establish a temporary Urgent Care Centre within the Emergency Department. This can be a temporary area, sectioned off for this purpose alone. When patients come in to be triaged, if deemed suitable for Urgent Care, they are to be moved to that area immediately. This must be done as to not impact the ER physicians.

During this period of analysis, it is important that ER wait times as well as other metrics more closely related to physician efficiency and performance be tracked as there are numerous elements at play that may not be tracked to date. Additionally, for any of these elements, it is critical that statistics are generated and tracked for both pre and post change.

If the statistics show a noticeable impact to the overall wait time in emergency rooms, it will generate the possibility for a cost-benefit analysis of having Urgent Care Centres in each of our Ontario hospitals.

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Discussions Created

- Rob Ford and Ethics

Content Shared (Image, Audio, etc)

- Persuade vs Convince by Seth Godin

Polls Created

Comments Made

Forum: Careers in a Turbulent World F12 // What are the main competencies that you, personally, need to develop over the next 5 years?
Competencies for success (**10/22/2012 9:12:25 PM**)

> Personally, there are a few competencies that should be a priority for most MBA's. 1) Ability to assimilate and apply information 2) Ability to communicate, with a special emphasis on listening 3) Ability to work with others in a collaborative, and high performing way. Our ability to assimilate and apply information will be critical. The amount of information available to a leader is growing exponentially each and every day. We need to be able to find it, filter it, understand it, and then apply it to our organization. The ability to filter will be critical as more and more information exists and more and more of it is conflicting. A person's ability to communicate in an effective manner will also be critical as motivating those who support you will be key. You cannot share your ideas effectively if you cannot communicate them in a way that resonates with your audience. Going back to the previous point, we will need to be able to work our way around other people's filters. Finally, and probably most importantly, working with others. More and more of us are asked to work in teams. Finding a way to perform and to motivate yourself and others is absolutely essential.

Forum: Careers in a Turbulent World F12 // What are your thoughts about "CareerLeader" and its value?
Not a big fan! (**11/27/2012 2:26:25 PM**)

> I feel that CareerLeader provided some expected results but at the end of the day if you are in this program (especially if you are a part-time student) you should have already thought about this. I feel that a lot of time was spent on CareerLeader , time that could have otherwise been utilized for something more relevant. On top of that, I am not a big fan of this type of surveying as it has been shown to be biased towards societal conditions and not actual personal preference. I think that it confirms what you already THINK you believe about yourself. Just as many of you, I got exactly what I expected, and that was simply because I knew how to answer it to obtain the result I wanted. I think we are all smart enough to be able to manipulate the test in order to "hear what we want to hear." It takes more than just a simple survey to discover things about your goals, motivations and priorities. If this is your step one, that's great,

but I feel that this has more relevance for undergrad students.

Forum: Framing and Reframing Skills F12 // Stretch Benchmarking when you're already the best.
We put in a "Path to 0" (**11/13/2012 7:01:51 PM**)

In my organization we really pushed for having a different type of goal. The "Almost Impossible" goal, and it has had tremendous impact in our day to day operations. Although a strictly safety initiative, It has impacted everything from marketing to finance. Our organization has started to see ourselves in a whole new light and has really pushed people to think of themselves as leaders. I would highly recommend looking at a Stretch Goal that is far away and not easily attainable. It has so many benefits.

Forum: Framing and Reframing Skills F12 // Which of the reframing techniques work best with "seeing first" and "doing first" decision approaches?
Difficult to say... (**11/13/2012 6:56:46 PM**)

I don't believe that any single re-framing technique is a definite answer for anything. If there is anything that this course has conveyed, it is the fact that no single method can be applied to anything. To say that a particular technique works best, is the wrong way of looking at it.

Discussions Recommended

0

Comments Recommended

0

Polls Recommended

0

Polls Answered

- Do you think that complexity science can make an important contribution to your future leadership effectiveness?
- Does thinking about business strategy give too much attention to competition as opposed to collaboration?
- Which of the following reframing techniques have you used before joining Schulich?
- How confident are you that an MBA degree will guarantee you success in your career over the next 5 years?
- Which technique do you think has the most impact on business decision making?
- In developing a new sustainable business line in the apparel industry, which of the following stakeholders will you consider the least important? - 1 is for least important

Competencies Statement

I am writing this competency statement based on Design, Story, Symphony, Empathy, Play and Meaning model covered in week 9 reading; *Soundview Executive Book Summaries: Pink, D. (2006). "A Whole New Mind: Moving From the Information Age to the Conceptual Age", Riverhead Books.*

- Design – Creating something beautiful and practical is a concept that I need to work on. This will be done in my off-time as Schulich does not provide any courses regarding purely creative elements such as Art, Design or Music. I may take issues in Arts and Cultural Management but that course will need to be reviewed further to understand if it ties into this category.
- Story – I feel that I do need to work on my presentation style(s). We have already made great leaps in this category and I will be sure to work on this continually throughout my professional and educational career. I recently held a 45 minute talk in front of a large audience that signed up to hear me speak. I will look to do more of these engagements.
- Symphony – This is probably the most difficult area to grasp. Through experience and my interest in strategy, I hope to fulfill this gap. My concerns lie in the fact that complexity is growing around us and the amount of information is growing as well. Just keeping up to date is difficult much less assimilating the information. I hope that further management techniques and more courses related to strategic thinking will provide more insight into this realm.
- Empathy – I feel that I am very good in this category. I relate well and work well with others in a professional environment. Conflict management proved to be a problem for me in the team project and I did learn a lot from that experience. I hope to continue learning in this regard. Additionally, driving teams towards performance is another area that I do need to work on and courses such as Managing Team Dynamics and Interpersonal Managerial Skills will surely help me hone those skills.
- Play – Overall this is a category that will not be applicable to my career at Schulich. Enbridge goes a long way towards public contributions and numerous activities that will drive "Play." I hope to continue to strive for balance in my life with tennis, guitar and other personal interests that I hope to continue for the rest of my life.
- Meaning - Again, this is a category that will require me to continue to reflect on where I am and what I am doing. This has been something I have keenly been interested in for a long time; I think that answers in this category are continually changing throughout one's life. Today, I work for an organization that provides me a lot of fulfillment and as my skill sets increase I hope to keep my current level of interest and dedication. I think a course in Ethics may provide some maturity or insight for me as I progress through my MBA.