**Summary:**
The Initial Assessment Process (IAP) was developed collaboratively by the emergency physicians, nursing, administrative staff in answer to the specific obstacles that we faced in delivering timely, high quality, patient centered care to our community.

**Hospital:** St. Joseph’s Hospital
**Location:** Hamilton, Ontario, Canada
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**Category:**
- A: Arrival
- B: Bed Placement
- C: Clinician Initial Evaluation & Throughput
- D: Disposition
- E: Exit from the ED

**Key Words:**
- Care Transitions
- Consults
- Continuity of Care
- Crowding
- Diagnostic Imaging
- Laboratory
- Patient Satisfaction
- Wait Times

**Hospital Metrics:**
- Annual ED Volume: 61,000
- Hospital Beds: 370
- Ownership: Public
- Trauma Level: 2
- Teaching Status: Yes

**Tools Provided:**
- N/A

**Clinical Areas Affected:**
- Ancillary Departments
- Consults
- Emergency Department

**Staff Involved:**
- Administrators
- Clerks
- Clinic Registration
- Consult Services
- ED Staff
- Nurses
- Physicians
- Registration Staff
- Social Workers
Innovation

St. Joseph's Healthcare is a 370 bed public funded Academic Health Sciences Centre in Hamilton Ontario. The 41 bed emergency department receives 61,000 patients annually, and flows a further 50,000 through its urgent care satellite site. It is a primary teaching site for McMaster University's postgraduate medical education program, and supports a large emergency medicine residency program. Patient acuity and case complexity are both high, reflecting the aging demographic of the area and the regional programs in nephrology, transplant, respirology, psychiatry, toxicology and thoracic surgery that are based at St. Joseph's.

Low acuity patients (CTAS 4 and 5) account for only 17% of visits to the emergency department. In the fall of 2012, emergency department was faced with several challenges:

- First, the provincial government froze funding for hospitals, and by extension for the emergency department. This was coupled with the closure of one of the adult emergency departments in the city, leading to a significant increase in adult high-acuity volumes without a corresponding increase in staffing and capital resources.

- Second, the emergency department wait times, including length of stay and time to physician initial assessment, exceeded the provincial average. Provincial funding tied to wait times was jeopardized by this failure to meet wait time targets. The protracted wait times were also significant source of patient complaints, and led to potentially dangerous clinical situations, as patients waited in the waiting room for hours prior to being assessed and treated. Many patients left without being seen. Patients brought in by ambulance waited for hours to be off loaded, resulting in pressure on EMS resources in the community.

- Third, resource utilization with respect to diagnostic services was not based on established clinical guidelines and best evidence. There was significant overuse of ultrasound and CT imaging for the diagnosis of venous thromboembolism, leading to unnecessary testing and radiation exposure.

- Fourth, there was a culture of frustration and disempowerment in the emergency department, as multiple attempts to change had been attempted in the past, with marginal results. Staff felt overworked and exposed in a department that was taxed to its limit. Nursing to patient ratios were higher than in any other area of the hospital. There was attrition among the staff, and difficulties in recruiting new nursing and registration staff. There was little communication between nurses and physicians regarding emergency department processes.

- Finally, consultant services were responding poorly to requests from the emergency department for timely follow up. Each service had its own protocol to obtain consultations, and there was no way to ensure that handover of care occurred seamlessly. This resulted in delays, missed appointments and discontinuity in patient care.

A novel, collaborative solution was required to address the unique challenges facing our department.

The Initial Assessment Process (IAP) was developed collaboratively by the emergency physicians, nursing, administrative staff in answer to the specific obstacles that we faced in delivering timely, high quality, patient centered care to our community. The existing resources of the department with respect to nursing, physician staffing, diagnostic services and physical plant have been reallocated to deliver service earlier and more efficiently in the patient experience. The waiting room has been eliminated and replaced by a rapid assessment area. Senior attending physicians assess each patient immediately upon presentation, and either disposition them immediately or initiate a diagnosis and treatment plan.

Once assessed, patients proceed directly to a dedicated care area where diagnostic tests and treatments are performed. Patients would then flow to care areas within the department. A second physician is assigned to the main department, where patients were reassessed once their testing and treatment was completed; this physician assumes care and discharges or refers the patient as appropriate.
This process eliminates the 'dead time' of triaged patients being held in the waiting room to await physician assessment. It also allows patients to be rapidly screened for occult serious illness, receive prompt treatment of time-critical diagnoses such as stroke, acute coronary syndromes and sepsis, and allows for immediate administration of analgesic medication when required.

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The IAP process has allowed us to implement, in parallel, evidence-based protocols for the diagnosis and treatment of common clinical presentations, e.g. sepsis, venous thromboembolism, bleeding in early pregnancy, migraine headache and many others. These protocols ensure the prompt implementation of best-practice management. It has also reduced unnecessary diagnostic testing and helps prevent errors resulting from physicians' deviations from accepted practice guidelines.

Since all diagnostic testing occurs on the 'front end', the process allows us to avoid delays in ordering imaging studies, and decreases the number of after-hours requests. This has allowed our Diagnostic Imaging Department to align their staffing appropriately, and perform more of their studies during regular business hours. Laboratory services enjoy a similar benefit, and most phlebotomy and electrocardiography has been centralized to the initial assessment orders area.

Consultant services are no longer permitted to send patients directly to the emergency department. Instead, all patients are assessed by the IAP physician; this allows care to be initiated without awaiting the arrival of a referring service. It also gives the emergency physician more control over patient flow and eliminates any ambiguity about which service acts as Most Responsible Physician. In consultation with our referring services, we have established a single centralized form and process for all outpatient appointments and referrals. This has allowed us to provide reliable, prompt follow up for our patients and eliminated many gaps in continuity of care.

Very few patients leave without being seen under the new process. This is important given our role as a psychiatric centre, where the risk of adverse outcomes among these patients is higher.

As a teaching hospital, the Initial Assessment Process also ensures that every patient is directly assessed by an attending physician prior to discharge. Most patients are seen by two staff physicians; this allows for a built in 'second opinion' for patients with more serious conditions.
Innovation Implementation

The core team comprised, Dr. Ian Preyra, Chief of Emergency Medicine, Ms. Tara Coffin-Simpson, Nurse Manager, Emergency Medicine, Ms. Carolyn Gosse, Director, Emergency Services and Internal Medicine.

The emergency department at St. Joseph’s has made many efforts to improve wait times over the last decade. This includes an extended engagement with an outside consultant to implement new processes. There have been challenges with staff engagement in the past, and a perception that change implemented from without was not desirable or sustainable. In recent years, standing order sets were used in an attempt to facilitate patient care, but there were issues with narrow applicability and physician oversight. The culture was, therefore, one where change was met with pessimism and distrust.

It was felt that in order to achieve the kind of buy in necessary to effect lasting change, all key constituencies needed to be involved in developing the new model. To that end, we recruited a change team that included front line nursing staff, physicians, and support staff. Physician and nursing leadership were involved as facilitators during discussions, but allowed for a free flow of ideas.

The only clear direction we provided was that any change needed to focus on providing better care for our patients, and that no idea or suggestion was too farfetched, regardless of how much it deviated from standard practice. As a group, we felt that this was an opportunity to explore how we could deliver better, more timely care to our community. In retrospect, this call to engagement on behalf of our patients provided the impetus for the entire project.

Timeline

The planning stages of the Initial Assessment Process began in November 2012. Open forums were held that included all involved clinical and administrative staff, and flyers were posted in the department inviting any interested stakeholders to participate. The emergency nurse manager took on the role of recruiter for the physician side, while the chief of emergency medicine worked to engage the nursing and support staff.

Many of our staff members wished to be involved, and we selected a group of front line staff to be leaders in moving the process forward. Working together, we fleshed out the idea of the IAP, and designed the flow diagram. We then discussed potential pitfalls and how to reallocate resources in order to surmount them. A conference room in the emergency was dedicated to process development, and all the discussion points, flow diagram, next steps etc were posted on the walls so that they were accessible to the staff at any time day or night during development. It was important to us that the entire process be fully transparent and inclusive.

At no point did we ever discuss wait times, emergency department length of stay, turnaround time or other statistical performance metrics. This was deliberate, and it was felt that our staff would be more strongly engaged and motivated by devising a system to deliver better patient care rather than to meet external benchmarks. We found a powerful desire to help take care of our shared patients among our staff, and we used this desire to provide the impetus to push the project forward.

Once the IAP had been fleshed out, we held meetings with all stakeholders outside the emergency department, including consulting services, hospital and nursing administration, diagnostic services, human resources and our partners in prehospital care. It was made clear that the emergency department was taking ownership of the patient care that it provided, and the expectation was that our partners would work within the framework that we had developed to support our common goals. The scope of practice and clinical role of the IAP Physician was clearly defined, to avoid complex assessments, procedures, and reassessments that would bog down the process. The collaborative framework between physicians was made explicit.
Modifications to the physical layout of the emergency department were minimal; these changes were spearheaded by our nurse manager. No additional resources were provided by the hospital, so we relied upon reusing or repurposing existing materials. The budget for the IAP project was essentially zero.

The Initial Assessment Process was piloted over three days in December 2012, and fully implemented on January 6, 2013 about two months after the project began. We reviewed the process frequently during the first few weeks, making changes the streamline and optimize flow as we learned more about our new flow pattern in real time. During this time, the chief of emergency medicine met regularly with outside stakeholders to reinforce the changes being made, seek input, and provide direction regarding daily operations in the new model.

The IAP was found to be immediately effective. In subsequent months its hours of operation were extended to include the entire working day and evening. The physician schedule was changed to accommodate the new IAP Physician shift, and we were able to decrease the hours of physician coverage inside the department. We continue to seek feedback from front line staff on how to improve the process, and we make changes without delay in response to identified opportunities for improvement. Please see above.

Results
The Initial Assessment Process has been remarkably effective in forming the backbone of our new patient care model. By providing the basis for a fundamental change in how emergency care is delivered, it has allowed us to implement multiple parallel processes to improve patient care, and it has made our staff much more strongly engaged in their work. There is a sense of coalition, excitement and collegiality in the department that had been lacking in recent years.

We have realized several benefits from the Initial Assessment process including:

- Patients receive more timely care without ‘dead space’. With the elimination of the waiting room, patients begin their diagnosis and treatment plan without delay.
- Patients with occult or serious illness are identified sooner, and those whose condition requires immediate intervention receive care without delay.
- Patients whose condition changes from triage are identified more quickly, and the emergency staff can respond more quickly to dynamic or progressive illness.
- Patients are much less likely to leave without being seen, reducing the risk associated with these patients and improving patient satisfaction.
- Rather than simple medical directives, we now have the ability to initiate a complete evidence based care plan immediately upon patient arrival; this allows us to provide a consistent, effective approach to common clinical presentations.
- All patients are initially assessed by an experienced attending emergency physician; patients who are not discharged immediately are subsequently reviewed by a resident and second attending physician. This model decreases the chances of missed findings due to physician error and affords the patient a built-in second opinion.
- Patients presenting to the emergency department feel that they are being treated as emergencies, and that their concerns are promptly addressed.
- Patients with minor conditions can be simply discharged immediately by the IAP Physician, decompressing the department and freeing up bed space for more complex patients.

While we have previously mentioned that wait times and other performance metrics were not the primary impetus behind the project, there have been marked improvements in all measured areas:

- Physician Initial Assessment time prior to the implementation of IAP was 3.5 hours. During IAP, our median PIA time is 20 minutes, including triage and registration.
- Complex patients not requiring admission saw their total emergency department length of stay decrease from 8.4 hours to 3.2 hours during IAP.
Patient with less severe conditions had an ED LOS of 5.5 hours prior to IAP and 0.9 hours during IAP
Left-without-being-seen rate dropped from 3.9% to essentially zero during IAP. The total volume of emergency
department visits increased from a weekly average of 1056 to 1234 (17%). (this may have been due, in part, to
national and local media coverage of the new process)
Admitted patients awaiting beds in the hospital continued to have protracted ED stays (27.9 hours before IAP
and 24.3 hours after IAP)
Ambulance offload time decreased from 112 minutes to 29 minutes.

Cost/Benefit Analysis
No additional funding was available from the hospital to develop and implement the Initial Assessment Process. The
project was completed by using existing resources and simply allocating them more effectively. Large quantities of pizza
and coffee were consumed by the working group. As a publicly funded hospital, our organization will receive additional
incentive funding from the Ministry of Health for meeting performance benchmarks. We have decreased the utilization
of diagnostic services, especially after hours. We have decreased our wait times and length of stay in the face of a large
increase in volumes without adding extra nursing or physician resources.

Advice and Lessons Learned
- In order to engage front line staff to embrace change, it is critically important that the goal of change be
  improved patient care, and that patient care remain in the forefront of all discussions around process changes.
- Transparency and broad collaboration improved buy in by front line staff and made our team feel that they were
  the drivers of change. The group was much more engaged in changes that they themselves initiated.
- Just because something hasn't been done before does not mean that it is impossible. Follow up on every idea,
  and keep an open mind. Emergency medicine as a discipline is still in its infancy, and we haven't yet figured out
  the best way to do it right. Be creative. Focus on what is possible.

Sustainability
Since the Initial Assessment Process was implemented as a new framework within which to deliver emergency care, it is
sustainable by definition. The IAP is the 'new normal' for our organization, and does not require ongoing resources to
continue to operate. It operates without any additional ongoing costs, and did not require an additional capital outlay to
implement. It is hoped that in the future additional funding may become available to modify our work environment to
increase efficiency during triage and registration, but this is not required for the continued success of the project.