

Capital District Emergency Services Council "CDESC"

Quarterly Report
Oct 2012
With focus on the HI ED



Introduction

Emergency Medicine is the medical specialty dedicated to the diagnosis and treatment of unforeseen illness and injury. It includes the initial evaluation, diagnosis, treatment, and disposition of any patient requiring expeditious medical, surgical, or psychiatric care <1>. Thus, the operationalization of “Integrated Networks of Emergency Care” is inherently interdisciplinary and interdependent upon multiple in-hospital and Health System wide structures and processes.

In alignment with the CDHA/IWK/EHSNS commitment to patient safety and with the Better Care Sooner standards (as well as with recommended national ED quality reporting guidelines) this quarterly report focuses on Key Process Indicators, and outcomes when available, to help drive the CQI imperative and to improve care to the patients and populations that we serve.

| Emergency Medicine | Unforeseen Unscheduled | Predictable Schedulable |
|---------------------|---|--|
| CTAS 1, 2, 3 | <ul style="list-style-type: none"> • Often described as “real” emergencies 97% of fixed costs of ED to meet population burden of acute illness and injury<4> • Does include exacerbations of chronic problems | <ul style="list-style-type: none"> • “avoidable” CTAS 3 (ED as safety net) <ul style="list-style-type: none"> - frail elderly with no acute event or problem - partial diagnosis requiring further work up - chronic condition requiring follow up or has predictable clinical course |
| CTAS 4, 5 | <ul style="list-style-type: none"> • DO NOT cause ED overcrowding<2,3> • Very low marginal cost to see in ED<4,5> • 9/10 most common successful lawsuits in EM | <ul style="list-style-type: none"> • “inappropriate” ED visits (ED as gate keeper) <ul style="list-style-type: none"> - Medication refill - “sick note” for work or school - Queue jumping to see specialist |

1. ACEP definition of Emergency Medicine: <http://www.acep.org/Content.aspx?id=29164>

2. **MYTH:** Emergency room overcrowding is caused by non-urgent cases - October 2009 Canadian Health Research Foundation Myth Buster of the year series

3. The Effect of Low-Complexity Patients on Emergency Department Waiting Times [Schull MJ, Kiss A, Szalai JP. Ann Emerg Med. 2007 Mar;49\(3\):257-64, 264.e1. Acad Emerg](#)

4. **THE COSTS OF VISITS TO EMERGENCY DEPARTMENTS** ROBERT M. WILLIAMS, M.D., .PhD (N Engl J Med 1996;334:642-6.)

5. Emergency Medical Care: 3 Myths Debunked, Huffington Post. Leigh Vinocur, M.D. Director of Strategic Initiatives at the University of Maryland School Medicine.

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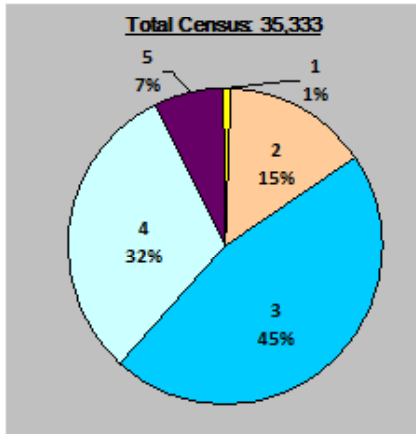
B. Research

Demand

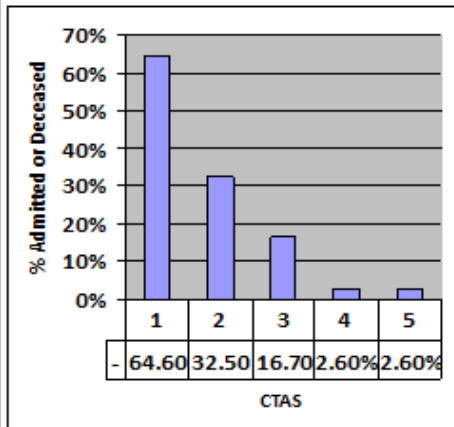
Census – Halifax Infirmary ED

Reporting Date: April 1 – Sept. 31, 2012

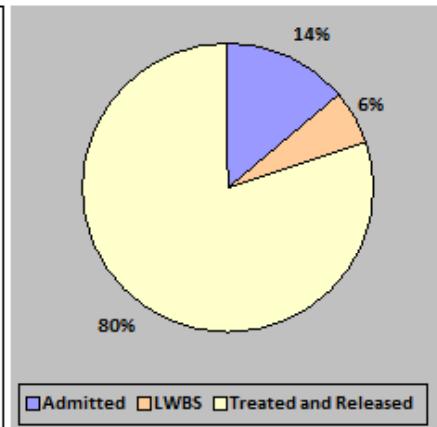
Context : Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%). Percentage admitted national benchmark is 16-18% for CTAS 3s.



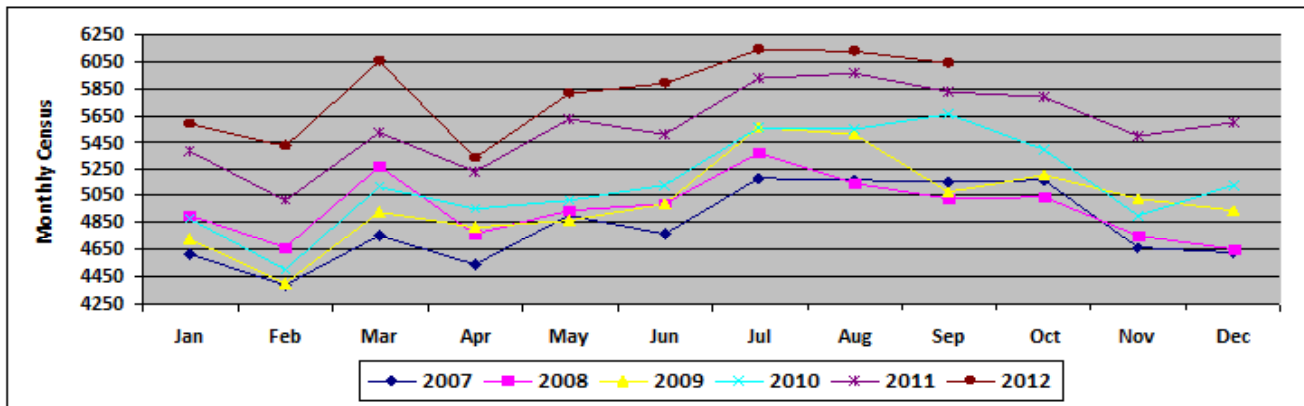
CTAS Distribution



Percentage Admits



Discharge Distribution



Analysis: Since May of 2010 there has been persistent and continuous rise in the overall census of the department from 5000 to 6000 patients/month (i.e. a 20% rise in volume accompanied by an unmeasured rise in complexity). The CTAS distribution is similar to other tertiary care hospitals across Canada.

The admission rates by CTAS level is also consistent with similar hospitals. Interestingly (but not surprisingly) there are a small (but significant) number of CTAS 4,5 patients that require admission – usually unrecognized at triage complications of assumed minor injuries.

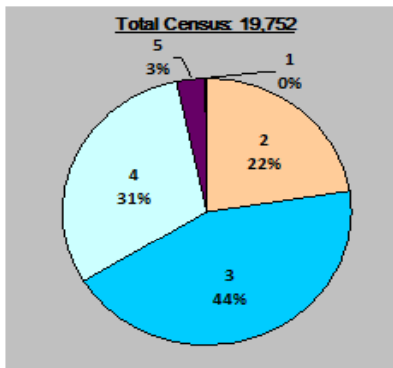
The LWBS rates are still higher than what is considered a safe target though the rate has come down over the past year (despite rising volumes) because of multiple flow initiatives within the ED.

Demand

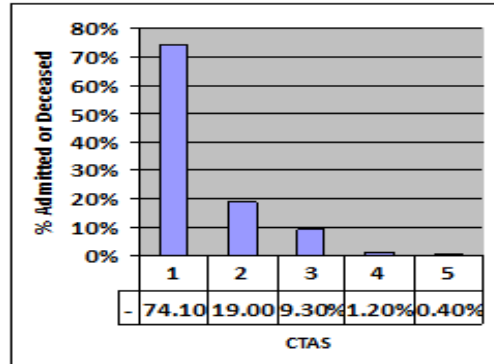
Census – Dartmouth General ED

Reporting Date: April 1 – Sept. 31, 2012

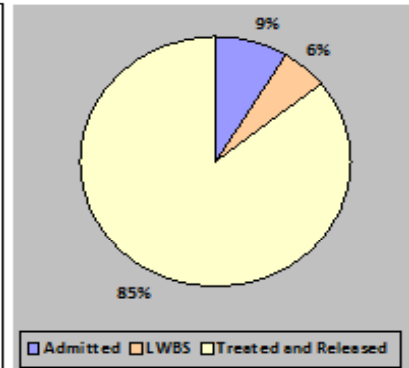
Context: Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%). Percentage admitted national benchmark is 16-18% for CTAS 3s



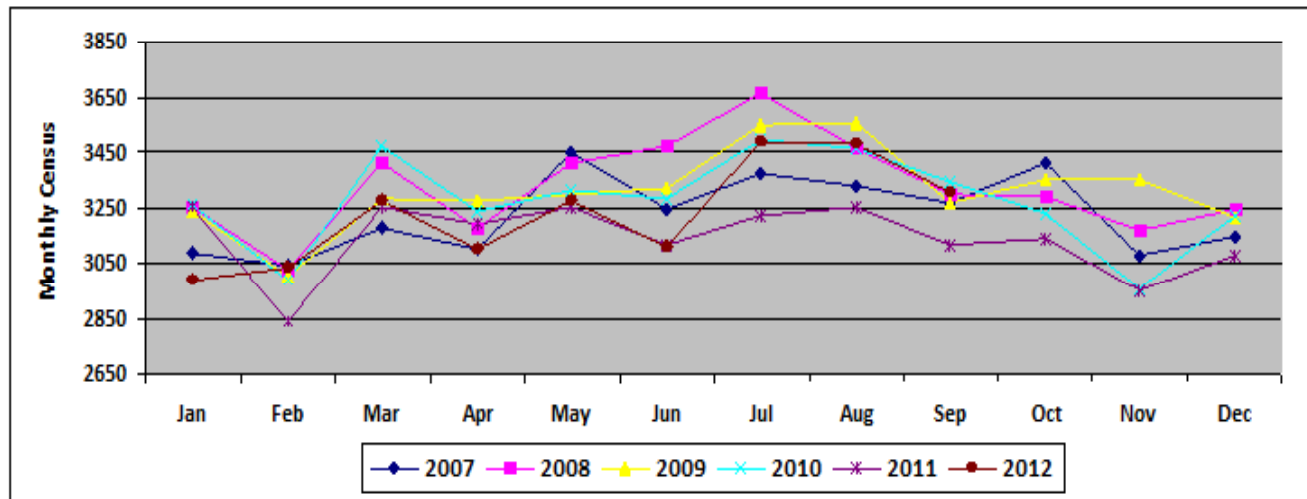
CTAS Distribution



Percentage Admitted



Discharge Distribution



Analysis: The annual volumes at the DGH have remained relatively stable over the past several years. CTAS distributions are similar to the HI ED though the admission rates but CTAS are lower. The overall admission rate is 9%. Both of these admission trends may reflect the need to transfer some patients to the HI for admission to some subspecialty services.

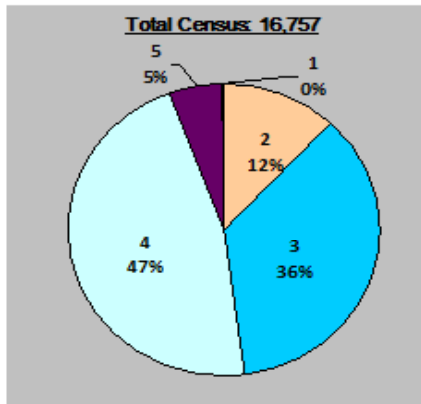
LWBS rates are at 6% for the past 2 quarters (again an improvement over the past year) which likely reflects improved internal ED process.

Demand

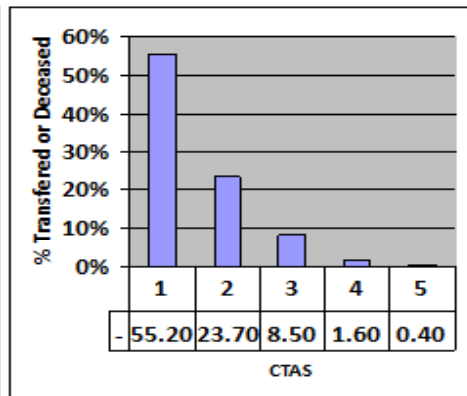
Census – Cobequid Community ED

Reporting Date: April 1 – Sept. 31, 2012

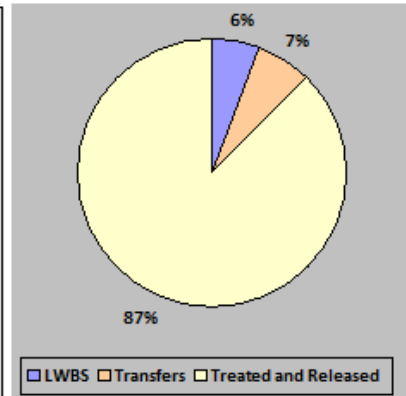
Context: Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%). Percentage transferred is used as a surrogate for admits for CCHC.



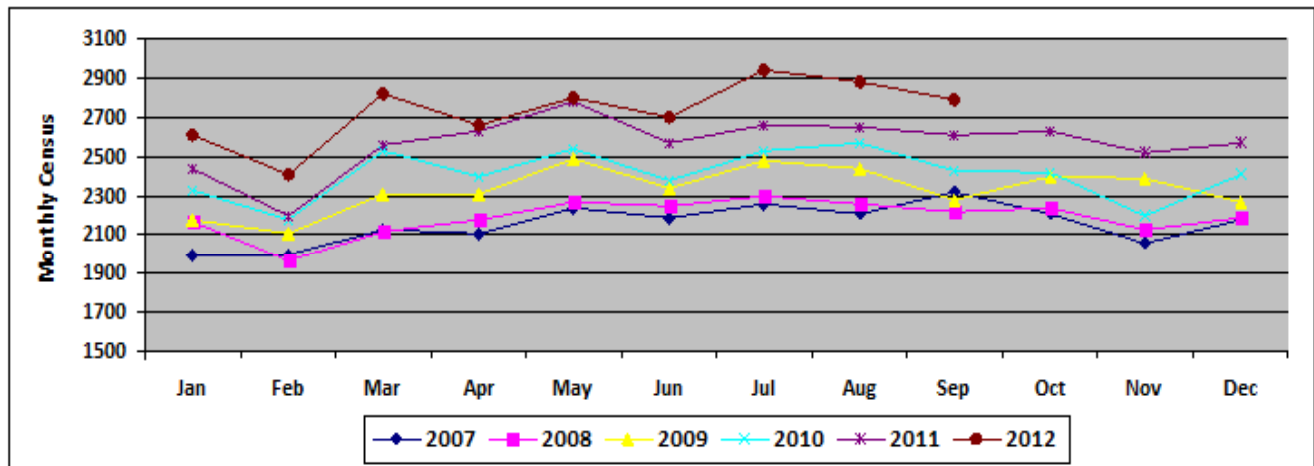
CTAS Distribution



Percentage Transferred



Discharge Distribution



Analysis: Since Nov of 2010 there has been a persistent and continuous rise in the overall census of the department from 2300 to 2800 patients/month (i.e. a 20% rise in volume accompanied by an unmeasured rise in complexity).

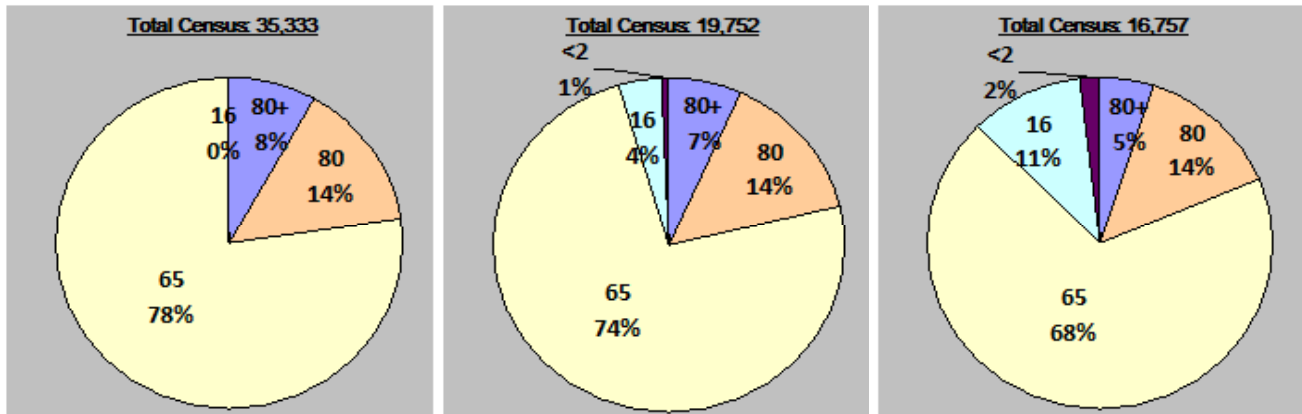
LWBS at 6% is above the national benchmark target. The overall transfer rate of 7% underscores the need for the district to integrate care in the regional network to provide subspecialty consultation and admission services.

Demand

Demographics – HI ED / DGH ED / CCHC ED

Reporting Date: April 1 – Sept. 31, 2012

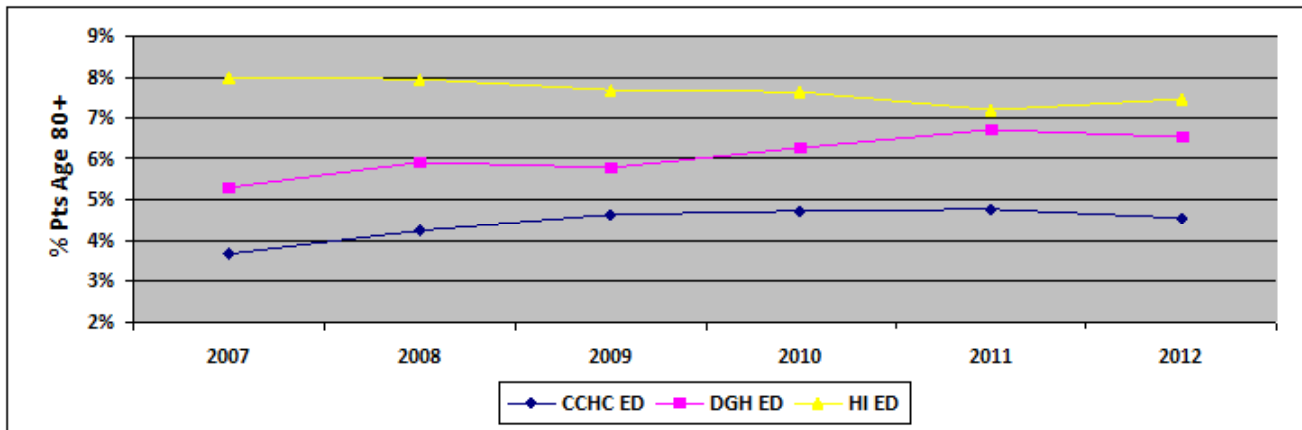
Context: The complexity of patients presenting to the ED is a function of CTAS, age, presenting complaint, and many other factors. This data looks at the percentage of census in the following age groups (IWK excluded at this time): < 2 yrs, 2-16 yrs, 16-65 yrs, 65-80 yrs, and > 80 yrs.



HI ED Distribution

DGH ED Distribution

CCHC ED Distribution



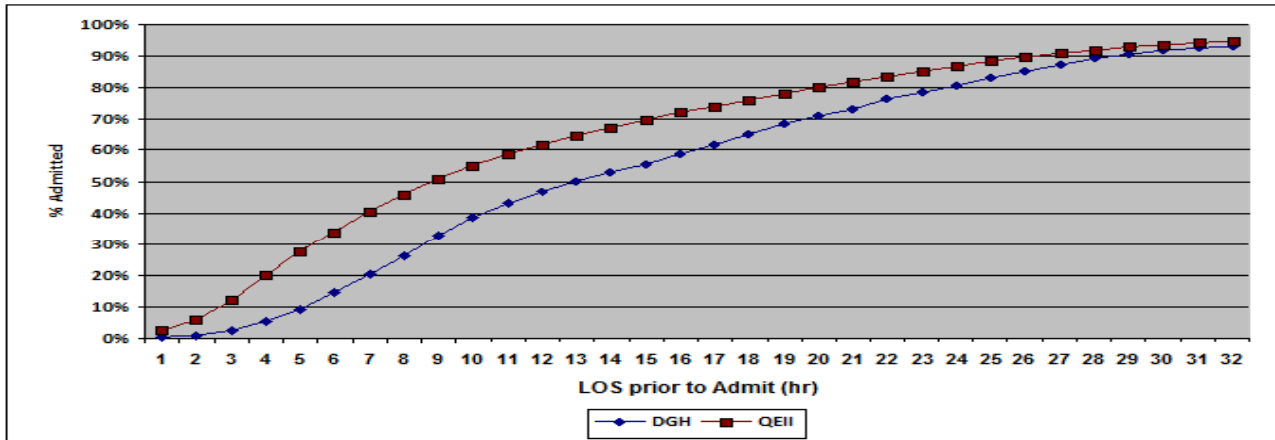
Analysis:

Although the volumes of patients are up significantly in the district the percent of patients presenting to the ED over 80 yrs of age has been relatively stable. The differences between sites likely reflects the geography of new families buying homes in the region and potentially the need for increasing levels of care for the elderly.

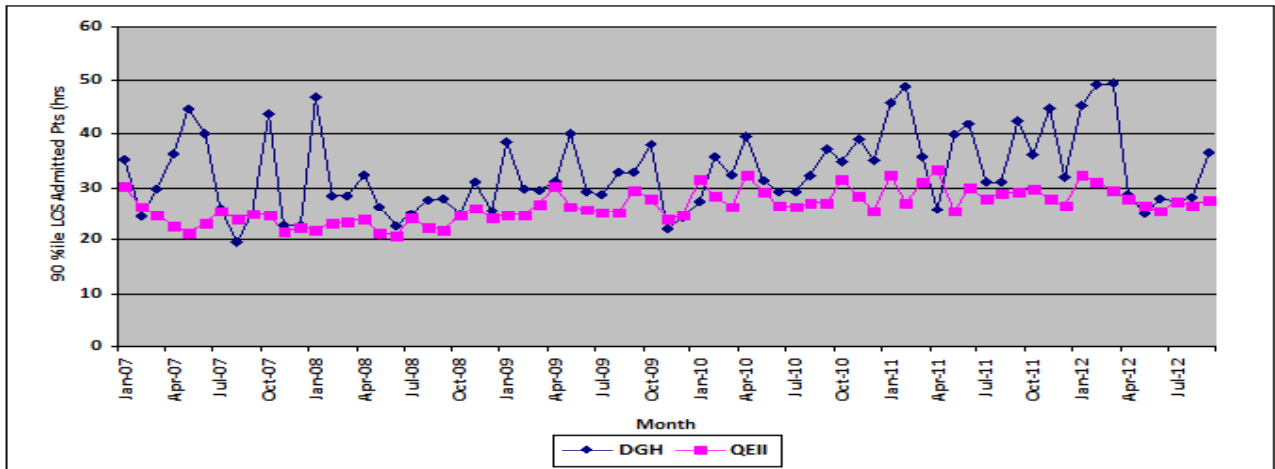
Flow and Network Integration

ED Length of Stay for Admitted Patients

Context: ED LOS of admitted patients (i.e. “ED boarding”) has been recognized as the main – 75% of the variance - cause of Overcrowding in the ED. Overcrowding is the term used to describe access block. Access block as manifested by increased patient wait times, increased ambulance offload times, and increased LWBS rates is associated with increased adverse outcomes, increased mortality (in a dose/response relationship), and increased costs to the system overall.



Percentile Length of Stay for Non CDU Admitted Patients



90th Percentile Length of Stay Admitted Patients

Analysis: The upper “90%tile performance” graph compares the ED LOS for admitted patients from the HI to DGH. The Better Care Sooner standard for this metric is 8 hours 90% of the time (in Ontario the 90th percentile standard is 6 hours). 45% of HI patients are admitted by 8 hours and 25% of DGH patients achieve this target. The 90th percentile performance is 26 hours at the HI and 29 hours at the DGH for the past 2 quarters (the comparison for Academic Health Science centers across Canada as measured by the Collaborative in Health Care Excellence is 16 hours).

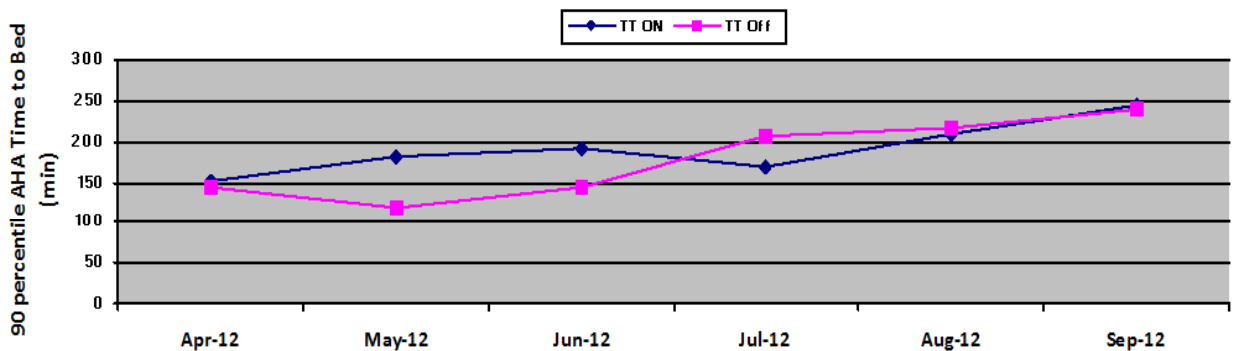
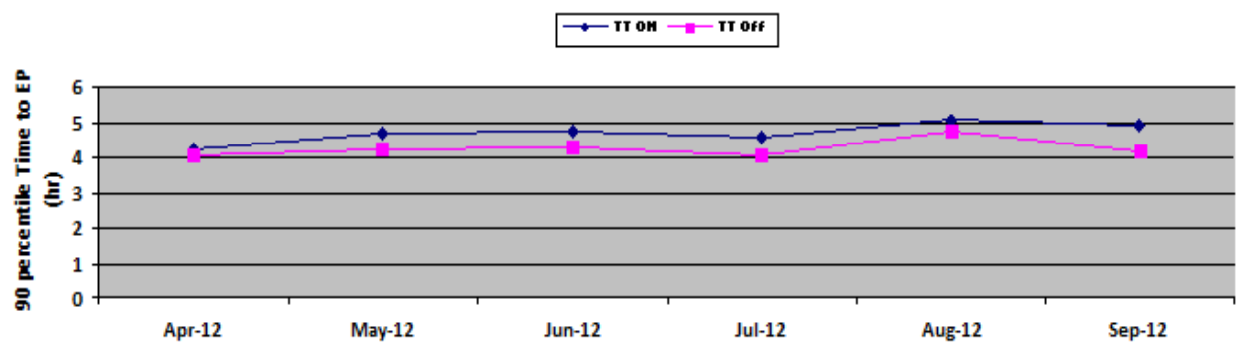
The bottom graphic shows the trending of performance for this Key Process Indicator since 2007 at both the DGH and the HI. 8

Flow and Network Integration

HI ED Ambulance Offload / Transition (Under Construction)

Context: Ambulance offload times are another Key Process Indicator which has implications both to the individual patient (i.e. wait times to see an MD), and to the community (i.e. turn around times for the ambulance to get back to the streets and available to the community for the next 911 emergency call).

Because of rising ambulance offload times in the past (due to ED access block) a transition team has been in place to assume the observation of care in the “ambulance hallway” prior to the placement of the patient in an ED bed (to allow the EHSNS crew to return to service).



Analysis: At the HI ED the mean time from ambulance arrival to placement in an ED bed has risen from 150 minutes to 250 minutes. This is essentially the same whether the transition team is on or not (which is to be expected). The metric that the transition team has improved is the ambulance crew turn around times (which is not available at this time).

Flow and Network Integration

Trip Destination

Context: Over the past 3 months an initiative has been put in place to try and “smooth” the incoming ambulance flow based on objective data and a successful program in Calgary (published in Acad Emerg Med). The purpose of the program is to alter the trip destination of incoming ambulances (with exceptions based on acuity/clinical need) to the least busy ED – in the relatively rare event that one ED is overwhelmed and the others are not (if all EDs are busy then the ambulance goes to the closest ED).

Further data is required to determine the success (or not) of this initiative. Many iterations of the criteria and their implications have been made already and there has been significant patience shown in an effort to try and get this right.

Ambulance Arrivals

| Site | Apr 1, 2011-Sep 30, 2011 | | | | Apr 1, 2012-Sep 30, 2012 | | | | Comparison | | | | |
|--------------|--------------------------|-------------|--------------|--------------------|--------------------------|-------------|--------------|------------------|------------|---------|-------------|--------------------|--------------------|
| | EHS Vol. | % Total EHS | Total Vol. | EHS % Total Volume | EHS Vol. | % Total EHS | Total Vol. | EHS % Total Vol. | EHS Vol. | % Total | Total Vol. | EHS % Total Volume | % Total Volume +/- |
| QEII | 7215 | 64.53% | 34073 | 21.18% | 7313 | 62.66% | 35333 | 20.70% | 98 | -1.87% | 1260 | -0.48% | 3.70% |
| DGH | 2901 | 25.95% | 19160 | 15.14% | 3247 | 27.82% | 19752 | 16.44% | 346 | 1.88% | 592 | 1.30% | 3.09% |
| CCHC | 1065 | 9.53% | 15896 | 6.70% | 1111 | 9.52% | 16757 | 6.63% | 46 | -0.01% | 861 | -0.07% | 5.42% |
| Total | 11181 | | 69129 | 16.17% | 11671 | | 71842 | 16.25% | 490 | | 2713 | 0.07% | 3.92% |

Analysis: In Q1 and Q2 (analyzed together) the total volume of EHSNS patients transferred to the 3 participating EDs is up 3.92% over the same period last year.

Approximately 20% of HI ED patients arrive by ambulance (16% at DGH and 7% at CCHC).

Although all sites have received more ambulance patients overall, when compared relatively to each other (the total number of ambulance deliveries being the denominator), DGH is up 1.3% and the other two sites are down slightly.

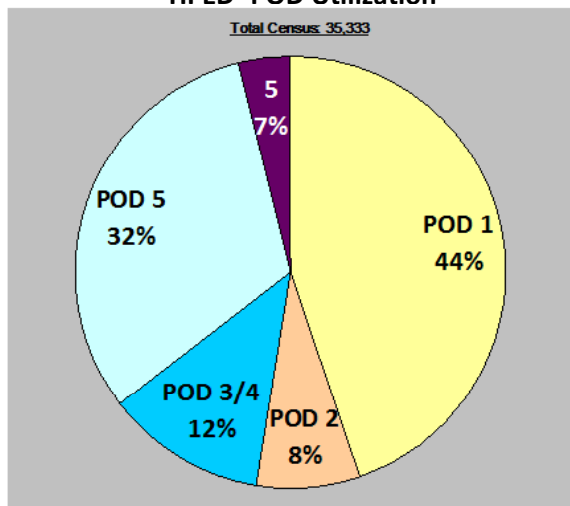
Flow and Network Integration

Pod of Initial Destination at the HI ED / RAU

Context: Internal flow within an ED needs to optimize available space/capacity to meet the volume/CTAS demands of the presenting patients.

The HI ED has innovated (chair centric Pod 1, fast track/paramedic assisted pod 5) to meet the needs of this demand. The Rapid Assessment Unit is another aspect of the ED which has evolved to meet the needs of transferred patients and referred patients from our own ED. This allows expedited consultations to specific services and frees up bed time to see the next Emergency patient in the waiting room or ambulance hallway.

HI ED- POD Utilization

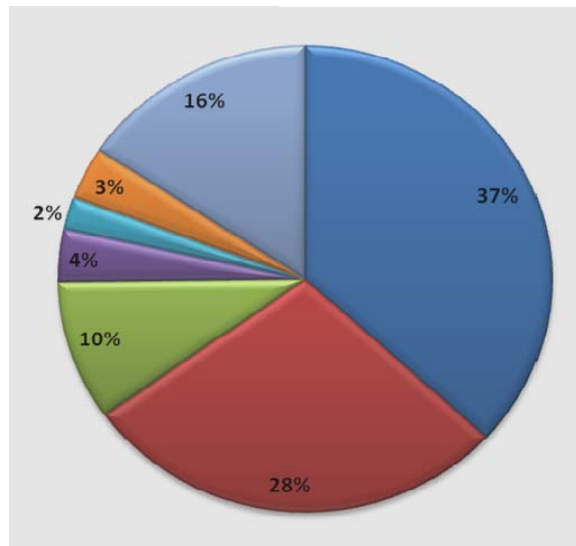


- Initial Location POD 1-2-3-4-5 or Psych
- Psych and Intake A part of Pod 1
- Intake B Part of Pod 5
- No LWBS Counted

RAU Patient Volume* by Origin

April-June 2012

*Total Patient Volume = 2,834



Analysis: 76% of all patients are seen in Pod 1 (chair centric care) or Pod 5 (fast track). This is a reflection of the number of hours that our actual ED acute care beds in Pod 2,3, and 4 are blocked by admitted in-patients. This ratio is likely too high and will be reduced with the reduction of ED boarding.

The RAU receives patients from many different sources with 16% being transferred from other hospitals from outside the district and 19% coming from within the district

Interestingly 28% come from home (including post op rechecks/complications, etc) which potentially could be seen more efficiently in clinics.

Flow and Network Integration

Clinical Decision Unit (CDU) Utilization

Context: The Clinical Decision Unit is a virtual unit embedded within the physical space of the ED which facilitates observation and rechecks by the Emergency Physician. The purpose is twofold; to improve the transfer of care with more explicit ordering and documentation clinical care pathways, and to try and reduce admissions for patients that potentially may “turn around” with 6 – 24 hours of treatment and observation.

| Site | CDU Patients | CDU Patient Admitted | Percentage CDU Admitted | Total Site Patient Volume | Percentage Total Patients CDU | Median Length of Stay CDU No Admitted Patients |
|---------|--------------|----------------------|-------------------------|---------------------------|-------------------------------|--|
| HI ED | 315 | 85 | 27.0% | 35333 | 1.8% | 14.6 |
| DGH ED | 192 | 321 | 26.9% | 19752 | 1.2% | 22.5 |
| CCHC ED | 64 | 22 | 34.4% | 16757 | 4.3% | 8.0 |

Analysis: CDUs were only implemented in the past 6 months and the culture/operationalization of this process has not entirely caught on resulting in artificially low numbers (as compared to potential benefit). Approximately $\frac{3}{4}$ of the time the CDU is invoked an admission is avoided.

CCHC uses the CDU at a slightly higher rate than DGH or HI, possibly due to the increased imperative to avoid transfers or admissions (or maybe their education/awareness of its benefits was better). In an Acad Emerg paper published this year the Ontario rates for a similar program is 4% and this resulted in reduced ED LOS, reduced admission rate, and no increase in ED revisit rate.

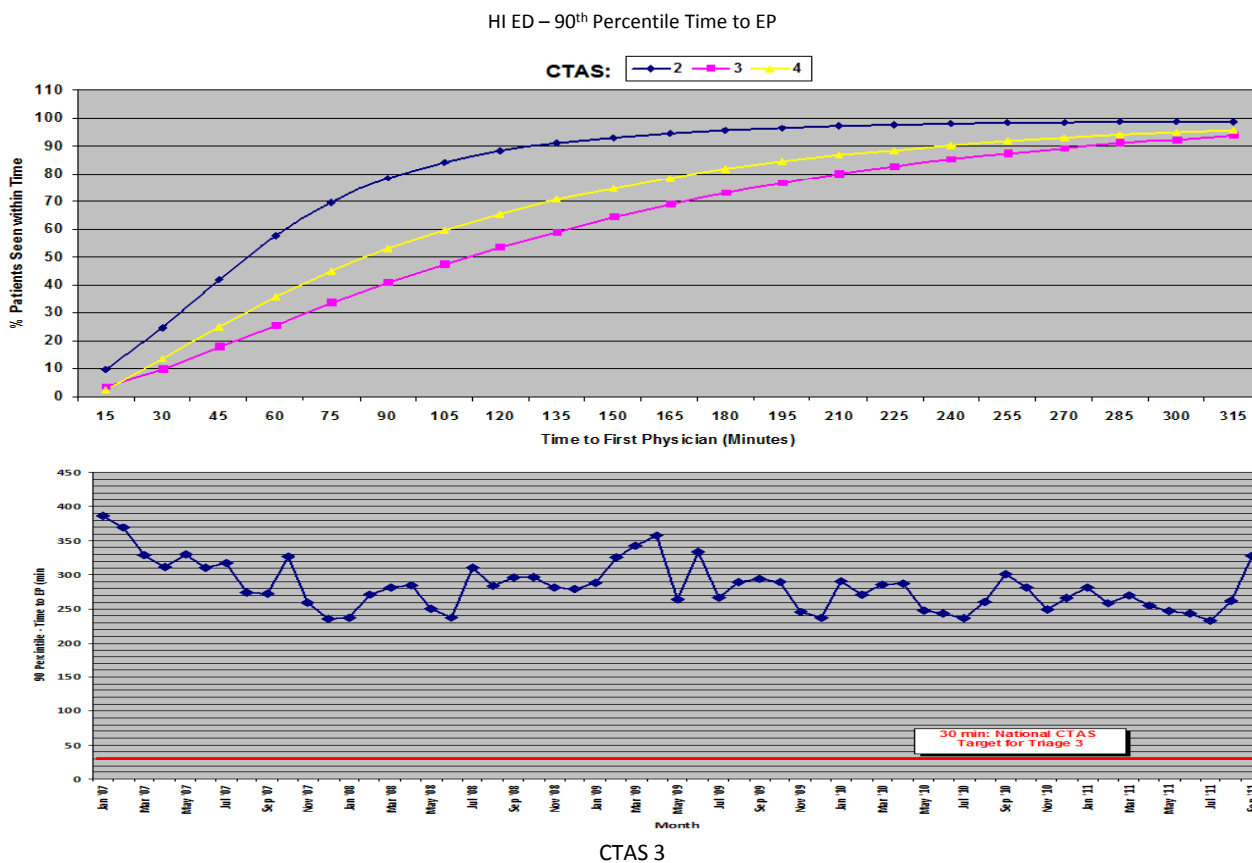
Patient Experience

Wait Times – HI ED

Context: One of the main ways ED access block manifests itself is in patient wait times (time from registration to time to see MD). Wait times have been shown to be associated with adverse outcomes in a dose response curve that suggests causation.

This data looks at the wait time performance curve for CTAS 2, 3, and 4s (assuming CTAS 1s get seen expeditiously and CTAS 5s have less of a time dependency).

The time targets are: CTAS 2 = 15 min, CTAS 3 = 30 min, CTAS 4 = 60 min.



Analysis:

50% of CTAS 2 pts are seen within 60 minutes, 90% by 2 hrs.

50% of CTAS 3 pts are seen within 100 minutes, 90% by 4.5 hrs.

50% of CTAS 4 pts are seen within 80 minutes, 90% by 4 hrs.

The bottom graphic trends the wait time for CTAS 3 pts (compared to target) over the past 5 yrs.

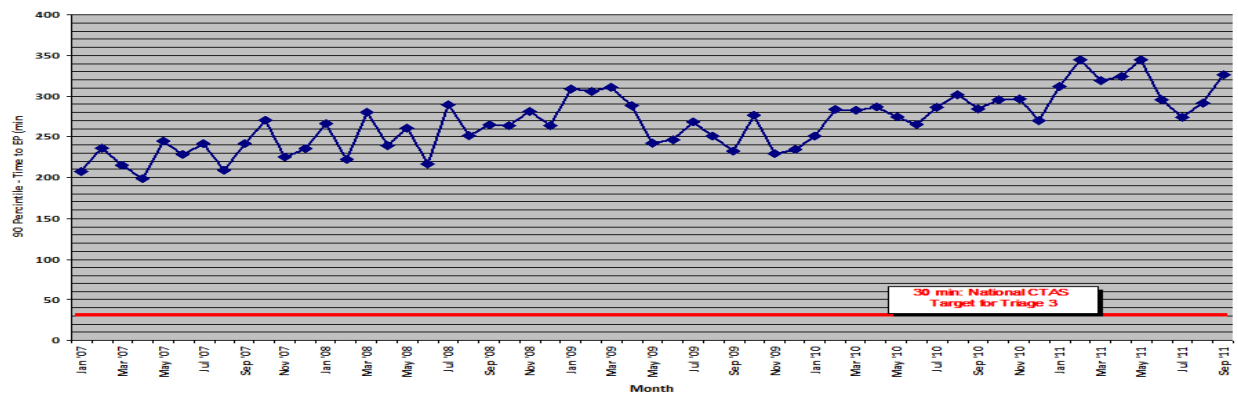
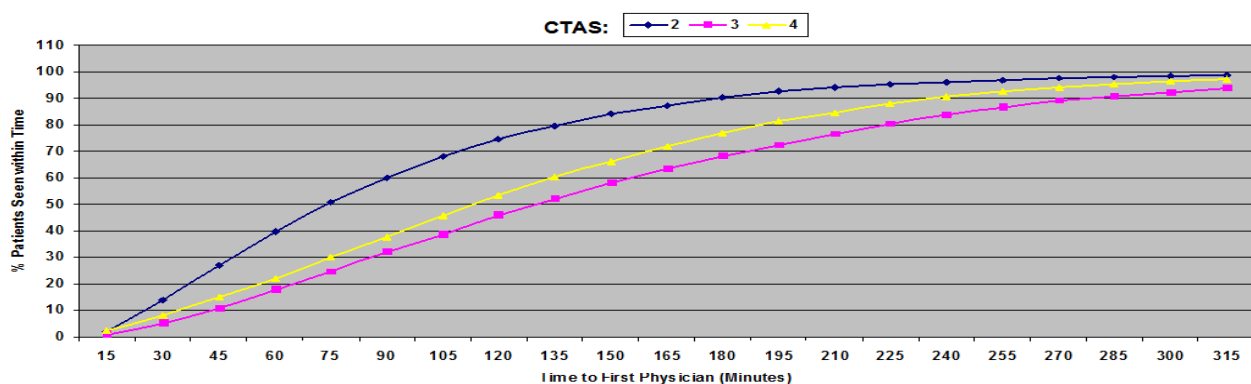
Patient Experience

Wait Times – DGH ED

Context: One of the main ways ED access block manifests itself is in patient wait times (time from registration to time to see MD). Wait times have been shown to be associated with adverse outcomes in a dose response curve that suggests causation.

This data looks at the wait time performance curve for CTAS 2, 3, and 4s (assuming CTAS 1s get seen expeditiously and CTAS 5s have less of a time dependency).

The time targets are: CTAS 2 = 15 min, CTAS 3 = 30 min, CTAS 4 = 60 min.



CTAS 3

Analysis:

50% of CTAS 2 pts are seen within 75 minutes, 90% by 3 hrs.

50% of CTAS 3 pts are seen within 135 minutes, 90% by 4.5 hrs.

50% of CTAS 4 pts are seen within 80 minutes, 90% by 4 hrs.

The bottom graphic trends the wait time for CTAS 3 pts (compared to target) over the past 5 yrs.

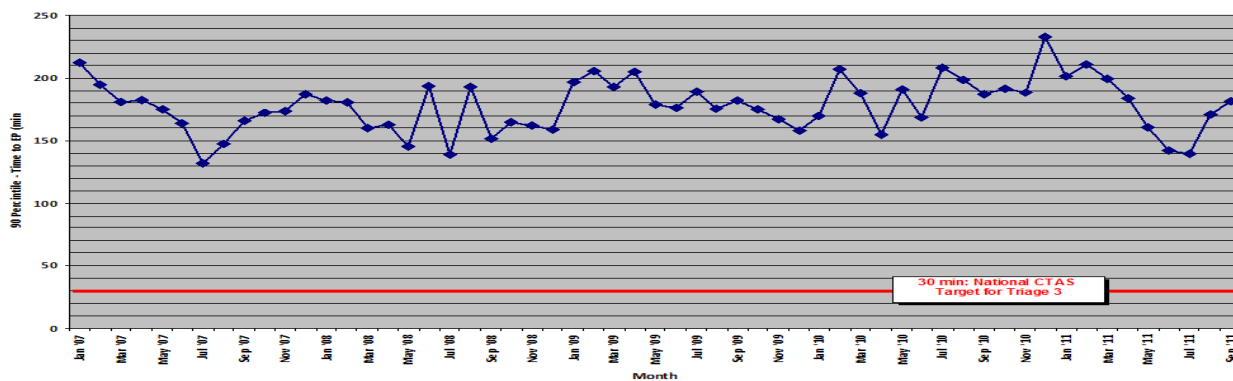
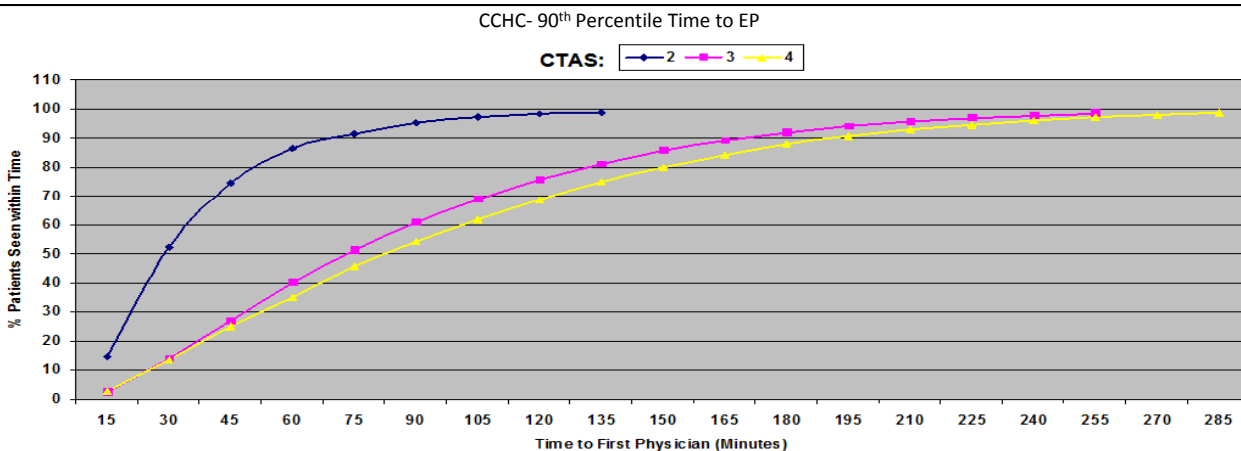
Patient Experience

Wait Times – Cobequid ED

Context: One of the main ways ED access block manifests itself is in patient wait times (time from registration to time to see MD). Wait times have been shown to be associated with adverse outcomes in a dose response curve that suggests causation.

This data looks at the wait time performance curve for CTAS 2, 3, and 4s (assuming CTAS 1s get seen expeditiously and CTAS 5s have less of a time dependency).

The time targets are: CTAS 2 = 15 min, CTAS 3 = 30 min, CTAS 4 = 60 min.



CTAS 3

Analysis:

50% of CTAS 2 pts are seen within 30 minutes, 90% by 2 hrs and 15 minutes.

50% of CTAS 3 pts are seen within 80 minutes, 90% by 2 hrs and 45 minutes.

50% of CTAS 4 pts are seen within 80 minutes, 90% by 3 hrs and 15 minutes

The bottom graphic trends the wait time for CTAS 3 pts (compared to target) over the past 5 yrs

Patient Experience

Satisfaction Survey

Context: This data is from 506 to 1592 patients who were mailed surveys 1 to 4 months after inpatient discharge and who recorded that they had spent time in the Emergency Department.

Questions 6 and 7 pertain to their entire hospital stay, only question 8 deals specifically with the Emergency Department visit.

Capital Health Patient Experience Survey Results
for Admitted* Patients: April 2011 to March 2012
Overall results, and by site for QEII and DGH

The introductory question asks: How were you admitted to the hospital?
If "Through the Emergency Department" was selected, directions were to complete questions 6 - 8 (below)

Q06 - Throughout my visit, I (or family/friends/care giver) was kept informed about delays and wait times.

| Facility | Agree/ strongly agree (%) | Target |
|----------------|---------------------------|------------|
| DGH | 79% | Needs Work |
| QEII | 89% | Needs Work |
| All Facilities | 86% | Needs Work |

Q07 - I (or family/friends/care giver) was kept informed about tests and treatments.

| Facility | Agree/ strongly agree (%) | Target |
|----------------|---------------------------|---------|
| DGH | 90% | Meeting |
| QEII | 93% | Meeting |
| All Facilities | 93% | Meeting |

Q08 - I (or family/friends/care giver) felt understood and cared about by the Emergency Department staff.

| Facility | Agree/ strongly agree (%) | Target |
|----------------|---------------------------|---------|
| DGH | 91% | Meeting |
| QEII | 93% | Meeting |
| All Facilities | 93% | Meeting |

The organizational target, for positive patient experience results, is 90% or higher.

* results will reflect the site of admission (will not reflect ED site if admitted to another site)

Analysis: The ongoing CARE-FULL initiative includes encouraging staff to introduce themselves, and communicate clearly and frequently with patients throughout their Emergency Department stay.

Of note, our (Halifax Infirmery) experience with surveys completed by patients during their Emergency Department stay show that at that time patients tend to focus more on their experience of long waits to be seen.

Clinical Care

Diagnostic Imaging & Lab Reporting

Context: Through put of patients in the Emergency Department is impacted by the intensity of the work up (lab and diagnostic imaging required). Decision rules developed in the Emergency Department setting (Cat Scan Head, Cervical-Spine, Ottawa Ankle, Rule Out Deep Vein Thrombosis, Rule Out Pulmonary Emboli, etc) all impact the cost effectiveness of patient investigation.

Reporting Period from: Apr 01, 2012 to: Aug 31, 2012

| DI Ordered | | | | | | |
|------------|-----------|---------------------------|---------------------------|-----------------------------|---------------------------|----------------------------------|
| Site | Pt Volume | CT Orders (%Pt Volume) | US Orders (%Pt Volume) | MRI Orders (% Pt Volume) | XR Orders (%Pt Volume) | Total Di Orders (% Pt Volume) |
| QEII | 29299 | 3563 (12.2%) | 1204 (4.1%) | 51 (0.2%) | 12947 (44.2%) | 17765 (60.6%) |
| DGH | 16447 | 2329 (14.2%) | 691 (4.2%) | 2 (0.0%) | 8891 (54.1%) | 11913 (72.4%) |
| CCHC | 13969 | 1112 (8%) | 366 (2.6%) | 2 (0.0%) | 7183 (51.4%) | 8663 (62.0%) |
| HCH | 7247 | 11 (0.2%) | 87 (1.2%) | 0 (0.0%) | 2124 (29.3%) | 2222 (30.7%) |
| Total | 66962 | 7015 (10.5%) | 2348 (3.5%) | 55 (0.1%) | 31145 (46.5%) | 40563 (60.6%) |

| Labs Ordered | | | |
|--------------|-------------------------------|-------------------|--------|
| Site | Patients with Labs Ordered | %Pts with Labs | Volume |
| QEII | 11912 | 40.70% | 29299 |
| DGH | 7800 | 47.40% | 16447 |
| CCHC | 5764 | 41.30% | 13969 |
| HCH | 2095 | 28.90% | 7247 |
| Total | 27571 | 41.17% | 66962 |

Analysis: This is raw data looking at the percent of overall patients who receive a Cat Scan, Ultrasound, MRI (Magnetic Resonance Imaging), X-Ray or labs ordered during their assessments in the Emergency Department. This data is not adjusted for acuity, complexity, or preventing complaint / diagnosis. There are no national benchmarks for these indicators but they will allow for some comparison within CDESC.

Clinical Care

STEMI

Context: ST Elevation Myocardial Infarction (STEMI) is an important and common presentation to the Emergency Department. The number of patients identified in the field by prehospital ECG and taken directly to an activated catheterization lab has improved population outcomes. Door to balloon times is a key process indicator.

| | Apr-12 | May-12 | Jun-12 | 12-Jul | 12-Aug | 12-Sep |
|----------------------------------|--------|--------|--------|--------|--------|--------|
| Total PPCI | 14 | 20 | 20 | 18 | 9 | 9 |
| % Arrival via EHS | 57 | 45 | 53 | 44 | 67 | 33 |
| % D2B<90 | 57 | 45 | 68 | 61 | 71 | 33 |
| % D2B<120 | 100 | 95 | 89 | 94 | 86 | 67 |
| % ECG within 10min: Walkin (min) | 50 | 36 | 75 | 30 | 100 | 50 |
| Median Length of Stay (days) 5 | 5 | 4 | 5 | 3 | 3.5 | 4 |
| Average Age (yrs) | 67 | 56 | 58 | 54 | 63 | 57 |
| % In-Hospital Mortality | 7% | 0 | 0 | 0 | 14% | 0 |

D2B: Door to balloon

Analysis: Mean numbers are displayed with the target door to balloon (D2B) time of less than 90 minutes occurring between 33 to 68 minutes over the past 6 months. Door to ECG times in the department are quite variable as well.

Clinical Care

Poison

Context: The IWK Regional Poison Centre is an integral component of Emergency Care at the District, Provincial and Interprovincial level. A board certified toxicologist oversees an extremely experienced and highly educated cohort of RNs to provide timely and sometimes life-saving advice. They also play an important role in the education of MDs, RNs and paramedics with regard to care of the poisoned patient.

| Total Calls - Apr 1 - Sep 30, 2012 | | | | | | |
|------------------------------------|-------------|-------------|------------|-------------|---------------|-------------|
| | NOVA SCOTIA | | PEI | | All Provinces | |
| Exposure Calls | 3594 | 92.44% | 477 | 96.36% | 4215 | 92.54% |
| Human Exposure Calls | 3439 | 88.45% | 459 | 92.73% | 4041 | 88.72% |
| Animal Exposure Calls | 155 | 3.97% | 18 | 3.64% | 174 | 3.82% |
| Information Calls | 294 | 7.56% | 18 | 3.64% | 340 | 7.46% |
| Total Calls | 3888 | 100% | 495 | 100% | 4555 | 100% |

| Human Exposure Calls - Apr 1 - Sep 30, 2012 | | | | | | |
|---|-------------|-------------|------------|-------------|---------------|-------------|
| | NOVA SCOTIA | | PEI | | All Provinces | |
| Managed on site (non HCF) | 2348 | 68.28% | 279 | 60.78% | 2643 | 62.70% |
| Managed in HCF | 1029 | 30% | 176 | 38% | 1329 | 32% |
| Refused Referral | 44 | 1.28% | 3 | 0.65% | 46 | 1.09% |
| Other/Unknown | 18 | 0.52% | 3 | 0.65% | 21 | 0.50% |
| Total Calls | 3439 | 100% | 459 | 100% | 4215 | 100% |

| Managed in Health Care Facilities (HCF) - Apr 1 - Sep 30, 2012 | | | | | | |
|--|-------------|-------------|------------|-------------|---------------|-------------|
| | NOVA SCOTIA | | PEI | | All Provinces | |
| Patient already in or en route to a HCF | 806 | 78.33% | 148 | 84.10% | 1077 | 81.04% |
| Patient referred into a HCF | 222 | 21.57% | 28 | 15.90% | 252 | 18.96% |
| Not applicable | 1 | 0% | | | | |
| Total Calls | 1029 | 100% | 176 | 100% | 1329 | 100% |

Analysis: Approximately 20% of calls are referred to a health care facility (often requiring on going decision support around antibiotics and medical management). The remainder of toxic exposures can be managed safely as home with ongoing rechecks and advice.

Clinical Care

Stroke

Context:

The Halifax Infirmary is the tertiary care stroke centre where all potentially thrombolizable strokes are brought by ambulance. Door to Cat Scan to needle and to stroke unit times are key process indicators for the Emergency Department and have been associated with outcomes.

Acute Stroke Thrombolysis in the HI Emergency Department

01 April - 30 June 2012

| Date | Arrived by EHS (Y/N) | EHS Bypass (Y/N) | Onset to Door (min) | Door to CT (min) | Door to Needle (min) | Door to Stroke Unit (day/hr/min) | Discharge Disposition |
|-------------|----------------------|------------------|---------------------|------------------|----------------------|----------------------------------|------------------------|
| 01/Apr/2012 | Y | N | 85 | 16 | 118 | 00:23:35 | Home |
| 08/Apr/2012 | Y | N | 128 | 48 | 87 | 01:19:57 | Home |
| 19/Apr/2012 | Y | Y | 73 | 19 | 74 | 00:20:37 | Dead |
| 01/May/2012 | Y | N | 207 | 15 | 63 | 00:03:53 | Home |
| 01/May/2012 | Y | N | 155 | 28 | 85 | 00:04:25 | GRC |
| 05/May/2012 | Y | N | 57 | 21 | 63 | 00:02:28 | Home |
| 11/May/2012 | Y | N | 159 | 22 | 35 | 00:03:21 | Home |
| 15/May/2012 | Y | N | 148 | 32 | 87 | 00:04:37 | Home Hosp |
| 27/May/2012 | Y | N | 139 | 25 | 76 | 00:03:56 | NSRC |
| 01/Jun/2012 | Y | Y | 51 | 17 | 59 | 00:03:49 | Home |
| 03/Jun/2012 | Y | N | 56 | 28 | 62 | 01:00:04 | Home |
| 05/Jun/2012 | Y | N | 38 | 17 | 77 | 00:03:22 | still on ASU |
| 10/Jun/2012 | Y | Y | 43 | 26 | 79 | 00:04:47 | Home |
| 15/Jun/2012 | Y | N | 38 | 28 | 67 | 00:17:07 | Home |
| 18/Jun/2012 | Y | Y | 50 | 18 | 41 | 00:03:50 | Home |
| 28/Jun/2012 | Y | N | 102 | 24 | 80 | 00:16:58 | Dead |
| median | | | | 23 | 75 | 00:04:31 | 10 / 16 Discharge Home |

Target door-to-CT time is less than 25min

Target door-to-needle time is less than 60min

(Canadian Best Practice Recommendations for Stroke Care 2010)

Target door-to-stroke unit time is 3 hours

(National Institute of Neurological Disorders and Stroke)



DISTRICT
STROKE
PROGRAM

Analysis: The median door to Cat Scan time is 23 minutes (target is 25 minutes) and door to needle time is 75 minutes (target 60 minutes). Door to stroke unit is 1.5 hours longer than the target of 3 hours. Significant work is required to meet the targets 90 percent of the time.

Clinical Care

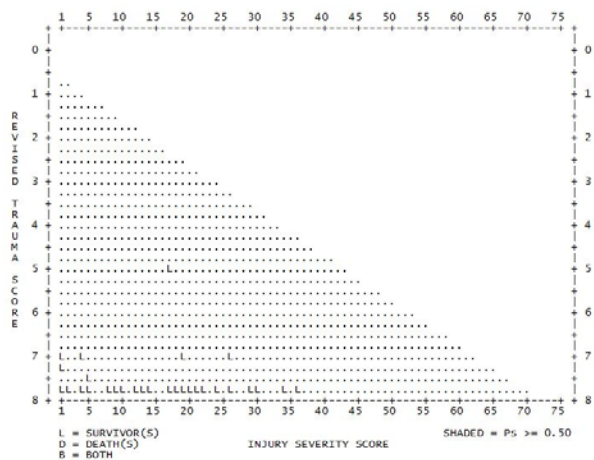
Trauma

Context: Trauma is the number one cause of loss of quality life years between the ages of 1 – 45. The Halifax Infirmary is the Level 1 Trauma Centre for the province (and plays a regional role) dedicated to the assessment, stabilization and definitive care of major trauma patients. There is good evidence in the literature that regionalized trauma care (including trip destination / by pass protocols) and a robust trauma team response saves lives.

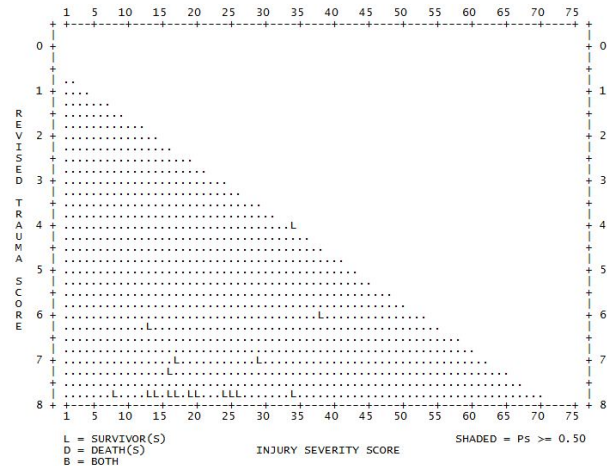
| | # Cases | ISS - Mean | ISS - Median | | # Cases | ISS - Mean | ISS - Median |
|----------------------------|---------|------------|--------------|----------------------------|---------|------------|--------------|
| Trauma Team Involvement | 162 | 16.2 | 14 | No Trauma Team Involvement | 143 | 18.8 | 17 |
| - Blunt | 130 | 17.2 | 17 | - Blunt | 134 | 19.1 | 17 |
| - Penetrating | 25 | 8.6 | 5 | - Penetrating | <5 | - | - |
| - Burns | 7 | 25.4 | 25 | - Burns | 5 | 20 | 18 |
| - Drowning/Asphyxia | 0 | - | - | - Drowning/Asphyxia | <5 | - | - |
| Total "Major" Trauma Cases | 305 | 17.4 | 17 | | | | |

Trauma Registry

Trauma Team



Non Trauma Team

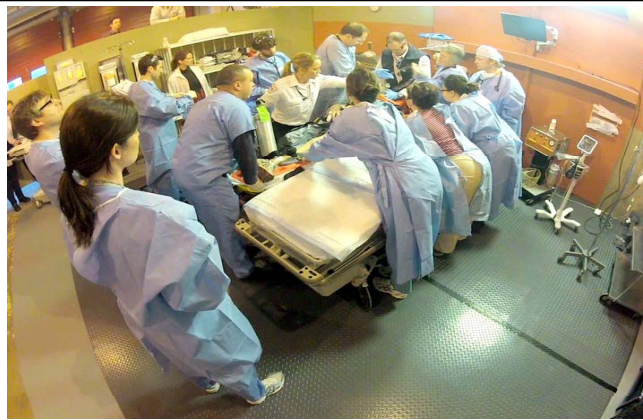


Analysis: Injury Severity score (ISS) of greater than 12 identifies major trauma in a Canadian system. In the past 6 months there were 305 major trauma patients. (87 percent blunt, 8 percent penetrating, 4 percent burn) with a mean ISS of 17.4. There were no unexpected deaths. Survivors on TRISS analysis. ISS is a retrospectively calculated score and the relatively large number of non trauma team activation is a reflection of the number of falls in the elderly who don't initially meet the ALS guidelines for trauma team activation.

Academic

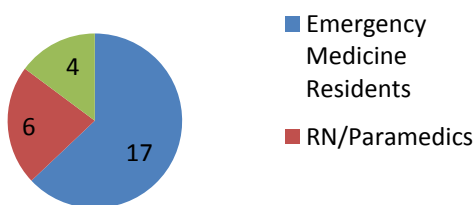
Education – Simulation Activities

Context: We have recently transformed 2 existing ambulance bays (which are no longer in use) to a viable space for learning and research using 'clinical grade cadavers' (CGC) and other forms of high-fidelity simulation equipment. The **impact is immediate** on learners and clinicians who have access to advanced learning methodologies, adjacent to the Charles V. Keating Emergency and Trauma Centre and other clinical Departments where they may be working. The simulation area supports team-based, multidisciplinary education and access to 'just-in-time' learning opportunities. Connections between the Department of Emergency Medicine, a new Division of Anatomy (which will oversee the Human Body Donation program) and a new District/University Simulation strategy are seen as opportunities to draw on strengths from each area to offer unique and sustainable education and research initiatives.

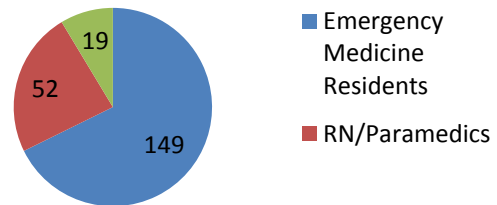


Simulation Lab Usage by Units

*Unit = 3 hours



Simulation Lab Usage by Participants



Analysis

An initial overhaul of this area allowed simulation exercises to start almost immediately. Simulations labs are being held for EM Residents, Nurses and Paramedics and other clinical staff as shown in the above charts. **This initiative delivers on several key strategic goals of our institutions:** fostering academic innovation, supporting research excellence, enriching the student experience and innovating health and learning. Additional physical plant work is planned that will make the space even more effective. In order to do this, the Department is actively pursuing funding initiatives to cover construction work and developing an online presence to advertise and promote the opportunities available in this unique space.

Academic

Education – Undergraduate Students

Context: The Halifax Infirmary Emergency Department also has a significant mandate to education at all levels within the Under Graduate Medical Education, Post Graduate Medical Education and Continuing Medical Education continuum. It is also an ideal learning environment for Nursing, Paramedicine and other health professions.

| Department of Emergency Medicine: 2011-2012 (ending July 31) | |
|--|-------------------------|
| April 1, 2012- Apr 30, 2012 (30 days) | # of Learners Scheduled |
| Med 3 & 4 Clerk (including electives) | 57 |
| PGY 1-5 | 117 |
| May 1, 2012 -May 31, 2012 (31 days) | |
| Med 3 & 4 (including electives) | 69 |
| PGY 1-5 | 81 |
| June 1, 2012- June 30, 2012 (30 days) | |
| Med 3 & 4 (including electives) | 55 |
| PGY 1-5 | 114 |
| July 1, 2012-July 31, 2012 (31 days) | |
| Med 3 & 4 (including electives) | 59 |
| PGY 1-5 | 109 |
| August 1, 2012 - August 31, 2012 (31 days) | |
| Med 3 & 4 (including electives) | 72 |
| PGY 1-5 | 114 |
| | |
| Totals: | 847 |

(please note: there are 9 shifts per day)*

Analysis

Academic

Education – Nursing

The Halifax Infirmary Emergency Department also has a significant mandate to education at all levels within the Under Graduate Medical Education, Post Graduate Medical Education and Continuing Medical Education continuum. It is also an ideal learning environment for Nursing, Paramedicine and other health professions

| Learners | | |
|---|--------|-------------|
| Type | Amount | Total Hours |
| Military | 3 | 800 hours |
| Critical Care Nursing Program | 2 | 72 hours |
| Emergency Nursing Program | 1 | 168 hours |
| Dalhousie Nursing 4 th year preceptorship (10 wks) | 6 | 2160 hours |
| UNB Nursing 4 th year preceptorship (10wks) | 1 | 240 hours |
| Dalhousie Nursing 3 rd yr clinical rotation | 2 | 208 hours |
| Dalhousie Nursing 3 rd yr clinical specialty day | 32 | 256 hours |

No learners were declined during this time period

| New RN staff orientation | | |
|--------------------------|---------------------------|------------------------------|
| # of new staff | Total hours with educator | Total hours of Clinical time |
| 9 | 272 | 1560 |

2 new staff left during this time period

| Educational offerings | |
|--|-----------|
| CTAS (triage) course | 8hours |
| New Chest tube drainage system inservices | 1-2 hours |
| Millenium (laboratory testing order entry) | |
| Mock trauma simulation | |

Analysis