

Department of Emergency Medicine

Annual Report 2013
Calgary Zone

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Department Head**



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Department of Emergency Medicine Annual Report 2013

Executive Summary:

Operations: Highlighting the Department of Emergency Medicine's continued and successful growth in this past year has been the opening of the South Health Campus Emergency Department and the dramatic efforts in staffing that have enabled successfully meeting a rapid growth in patient care needs. The benefits of a true zone model of Emergency Medicine in Calgary and an active Manpower Committee has met the challenge of SHC opening and an overall increase in acute care demand by recruiting over 50 specialty-trained emergency physicians in the region over the past 48 months and the addition of strategically placed new clinical shifts across all sites to help match capacity to demand. The multifaceted efforts of the Zone Department of Emergency Medicine have yielded important gains in operational efficiency across all adult sites in the region leveraging best practice and quality improvement initiatives that have been successfully disseminated across multiple sites in the zone. 2013 was of course marked by the Alberta floods which had an important impact on care provision and emergency response in Calgary and neighboring communities. Redirecting lower acuity patients to the Foothills PCN was successfully piloted over the summer months with efforts continuing over the high volume flu season of late 2013. Members of the department were also called to action as part of federally funded national disaster relief initiatives (CAN2F).

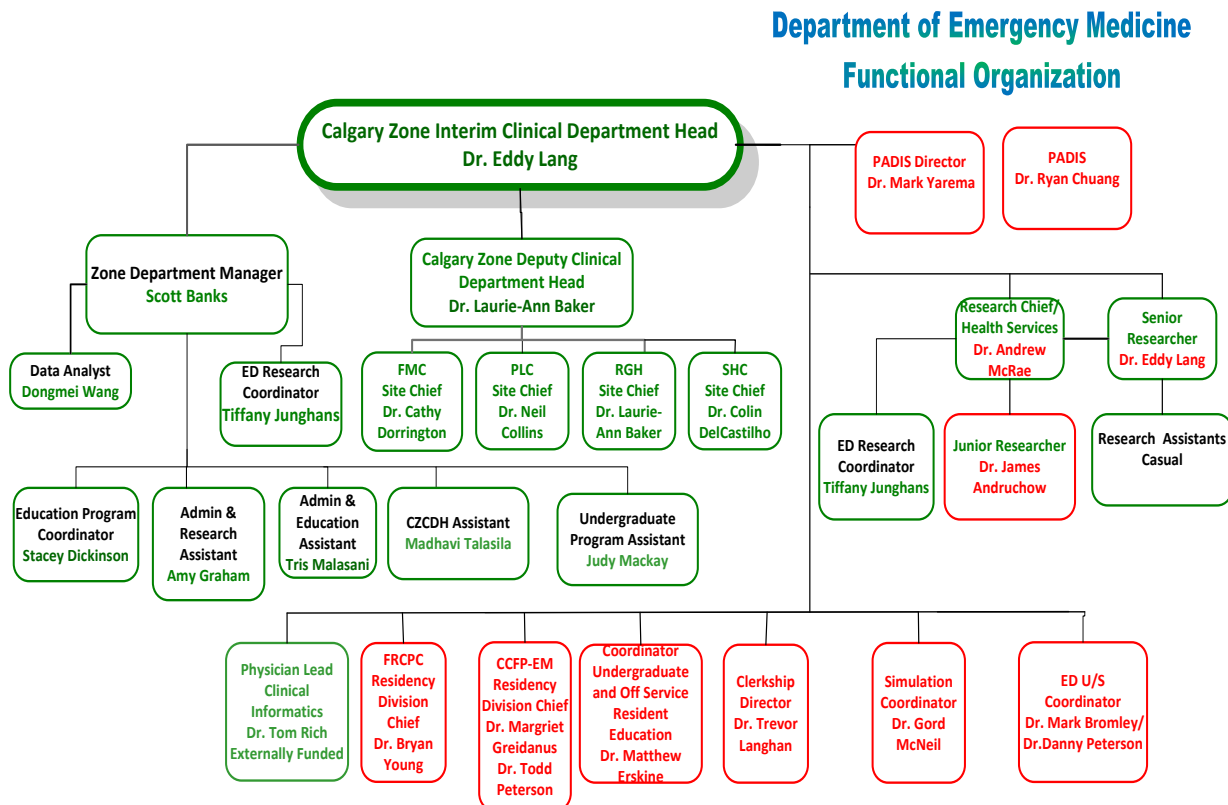
Academics/Research Update: The University of Calgary officially welcomed the Department of Emergency Medicine into the Faculty of Medicine in early 2013. This development was made possible by the impressive educational footprint that the department creates in the zone. With thousands of hours of direct one to one supervision of trainees by experienced and award-winning faculty and 2 burgeoning residency programs the department's commitment to education was one of the key ingredients that supported the creation of the academic department in 2013.

The past year also continued the trend of dramatic growth in research success and productivity for the Department of Emergency Medicine. Dr. Simon Berthelot was awarded the Grant Innes Award from the Canadian Association of Emergency Physicians, recognizing the best research project presented at the 2013 CAEP National Scientific Meeting. Calgary's adult EDs recruited patients to eight multicenter studies in collaboration with emergency medicine colleagues from across North America, and to several other studies conducted by collaborators in other clinical specialties. Dr. Andrew McRae, our current research director, is transitioning to a funded Health Services Researcher position, which will enable the recruitment of a new research director in 2014, continuing the growth of our research program. Members of our department were awarded operating grants from the Canadian Institutes of Health Research (CIHR), and have applied for additional funds from CIHR, Alberta Innovates-Health Solutions and the Heart and Stroke Foundation of Canada, which will enable the recruitment of research-oriented data analysts to assist with ED operations research. Furthermore, researchers in the department have secured investigator-initiated funding from Roche Diagnostics to perform the first North American validation study of a novel diagnostic algorithm for myocardial infarction in the ED. Finally, the Calgary research group was successful in applying for grant funding through the Partnership for Research and Innovation in the Health System (PRIHS) and will embark on a multidisciplinary collaborative research project to improve stewardship of diagnostic imaging resources across the province beginning in 2014.

EMERGENCY DEPARTMENT OPERATIONS

Departmental Structure and Organization

Governance: Physician leads within the Department of Emergency Medicine (DEM) include an Interim Department Head (Eddy Lang), an Interim Deputy Department Head (Laurie Ann Baker), a Site Chief at each hospital (RGH-Laurie Ann Baker; PLC-Neil Collins, FMC – Cathy Dorrington, SHC – Colin DelCastilho), Royal College Residency Directors (Bryan Young, Sarah McPherson), CCFP-EM Co-Residency Directors (Margriet Greidanus and Todd Peterson), a Clerkship Director (Trevor Langan), Director of Off Service Resident Education and Undergraduate Education (Matt Erskine), Senior Researcher (Dr. Eddy Lang), Research Director & Health Services Researcher (Andrew McRae), Junior Researcher (James Andruchow), ED Ultrasound Coordinators (Mark Bromley, Danny Pederson), Simulation coordinator (Gord McNeil), and an Informatics Lead (Tom Rich). Scott Banks, our Department Manager, oversees budget, physician recruitment and management.



Green = Administrative

Red = Academic

EM Committees: Four main DEM committees meet monthly or bi-monthly.

The Physician Executive Committee:

The Physician Executive Committee provides leadership, direction and support for all physician-related activities. The Committee is a decision-making body for physician manpower, scheduling, operational, quality, safety and financial aspects of the Zone department of Emergency Medicine (ZDEM).

THE ZDEM Operations Committee:

The Operations Committee is a multi-disciplinary committee including Physician, Nursing and administrative representatives. Duties include strategic planning, prioritization, quality, safety, innovation and oversight of all ED systems and processes.

The Academic Steering Committee:

The Academic Steering Committee guides the development of the EM academic program. Primary agenda items for 2013 include strategic planning towards short term and long-term academic goals, faculty development, recruitment to academic positions and educational programming

The Promotions Committee:

This committee processes faculty appointments and promotion requests for the new Academic Department of Emergency Medicine.

The ZDEM Physician Manpower Committee:

The Physician Manpower Committee is a subcommittee of the Physician Executive. It provides leadership and makes decisions with respect to manpower needs, search and selection, and physician hiring in the Department of Emergency Medicine.

The Quality Assurance Committee:

This committee reports to the ZDEM Operations Committee. It is one of the few departmental QAC's that have been allowed to continue within the new AHS Safety framework.

Department Membership:

The Department of Emergency Medicine currently employs 180 active physician staff and treats approximately 320,000 patient visits per year (annualized value based on current and projected inflow volumes).

Historically there were two main “practice-groups” (The Foothills-PLC group and the Rocky view group), but an increasingly zone focus and multi-site practice has changed this model. We now have extensive physician cross-coverage of sites, with a variety of site combinations. Overall, ~120 Department of Emergency Medicine physicians have academic appointments (or appointments in progress).

Manpower and Workforce Planning

Highlight of the Year: MD Recruitment and Hiring:

The year 2013 was a very active recruitment year for the Calgary Zone Emergency Department. Sixteen new physicians started work in the Emergency Department in 2013 and another 21 physicians were recruited to start work in the Calgary Zone Emergency Department in 2014. A very aggressive recruitment campaign to improve our emergency physician staffing levels and to assure adequate coverage for the new South Health Campus proved exceptionally effective. In addition to SHC needs, we have had several parental leaves, normal attrition, and a substantial increase in the number of physicians requesting to cut down on their workload—some being older physicians with expected reductions in work commitment but many not.

Our Calgary Zone Emergency Department is now one of, if not the largest Emergency Departments in Canada with approximately 180 emergency physicians and locums on staff. Despite our successes we still need to be very diligent with our recruitment efforts. Dr. Laurie Ann Baker our Deputy Department Head, completed extensive surveys of our physician group and found that many emergency physicians planned to either retire or reduce their workloads by joining split lines in the next 3 to 5 years. To account for continued growth within the city and both planned and unplanned attrition, we are anticipating that we will need to hire approximately 12-14 emergency physicians per year for the next 3 years. Given our recruitment success over the past few years, we are confident that we will be able to achieve this goal. It is however, critical that we continue to develop new and innovative ways to differentiate our department, so that we can continue to recruit Canada's best and brightest emergency physicians.

The Recruitment Process:

To attract applicants from our target market, we published advertisements in the Canadian Journal of Emergency Medicine (CJEM), the Canadian Medical Association Journal (CMAJ), and online using websites such as cmacareers. Advertisements also appeared throughout the year in the CAEP Communiqué, a bi-weekly newsletter that is emailed to over 1,500 emergency physicians in Canada. Additionally, we also orchestrated an email campaign to friends of friends across Canada, and this word of mouth advertising was very effective with many of our physicians acting as Calgary ambassadors and recruiting colleagues and residents from their former home cities.

In addition to print and online advertisements, we recruited by setting up an exhibitor booth at the annual (June 2013) Canadian Association of Emergency Physicians conference. We also set up an exhibitor booth at the (CAEP) Resident Career Fair and worked closely with EM Residency Directors across Canada to recruit residents interested in moving to Calgary. Since our involvement with CAEP, many physicians from other provinces have followed up with us. We plan on setting up a recruitment exhibitor booth at CAEP in 2014 to continue to build on our recruitment momentum.

Changes in Recruiting Practice:

Based on changes to our recruitment process in late 2011, our Selection Committee tends to be small and has the ability to invite applicants to Calgary quickly after their application file is

complete. Exceptional candidates with very good references are provided employment contracts within 24 hours of their interviews. We believe this expedited process has increased our success rate substantially, as it makes candidates feel highly sought after. Most high quality candidates interview at multiple sites across the country, and most potential employers (EDs) take days or weeks after the interview to make hiring decisions and extend job offers. By making immediate or rapid offers, we are demonstrating to candidates that we are decisive, capable of getting things done, and serious about hiring them. These are characteristics that our recruits have indicated that they find appealing.

Recruitment Is Important – But retention is equally as Important:

With the recruitment of a large number of physicians we have also experienced new challenges. To ensure that we maintain a core of experienced EM physicians who can provide mentorship to our new recruits, the manpower committee has adapted its philosophy to include the active retention of this important physician group. Retention strategies that include both age and service consideration include the limitation and/or removal of night shift duties, increased vacation time allotment and tempering of shift types to support changing practices. Largely supported, these strategies are planned for implementation in the fall of 2014.

Goals and Strategies:

Although, for the last few years, we have been playing catch-up (and upstaffing for a new site), our underlying primary goal is to increase manpower and modify ED shift schedules until we can match physician capacity to patient demand. This requires successful recruitment and hiring processes as well as ongoing reassessment of demand, but it is also dependent on modifying operations so that added physicians are actually effective (i.e. able to examine patients in care spaces).

Impact on Other Departments & AHS Resources:

Hiring large numbers of ED physicians has an impact on the provincial physician budget (payments are fee for service billings through the Physician Services Branch), but minimal impact on other Calgary Departments and the CMO (Physicians Affairs) budget, as the physicians are fee for service workers increasing in response to growing patient demand. We have required, and will continue to require some additional financial resources for ongoing advertising and physician recruitment.

Accomplishments and Highlights 2013

Quality Improvement Report 2013

Zone Priorities for Fiscal Year 2013-2014:

- 1) Reduce Zone Type and Screen Information System documentation errors occurring in the ED to 0 errors at all sites by March 31, 2014.
- 2) Improve discharge processes for patients released from the ED to achieve a target of 90% of patients discharged within 4 hours of triage by March 31, 2014.
- 3) Improve inpatient transfer processes for patients admitted from the ED by transferring patients to an inpatient unit within an average time of 30 minutes from “bed assigned” status by March 31, 2014.

Status Update:

Calgary Zone Adult Acute Emergency Departments continue progress with the quality improvement projects selected as priorities for this fiscal year. South Health Campus has provided additional capacity and demand has stabilized after years of continual growth. The stabilization of demand has allowed ED staff to realize gains related to the many improvement initiatives they have been involved with over the past 3 years. The Zone Department of Emergency Medicine (ZDEM) Quality Improvement Council meets quarterly to review improvement initiatives, and allows a forum for the adult EDs to share valuable information around continuous improvement. The Quality Improvement RN roles (one for each ED except for the SHC ED) allow for a dedicated site based ED staff member to provide leadership, education, and staff support with improvement initiatives.

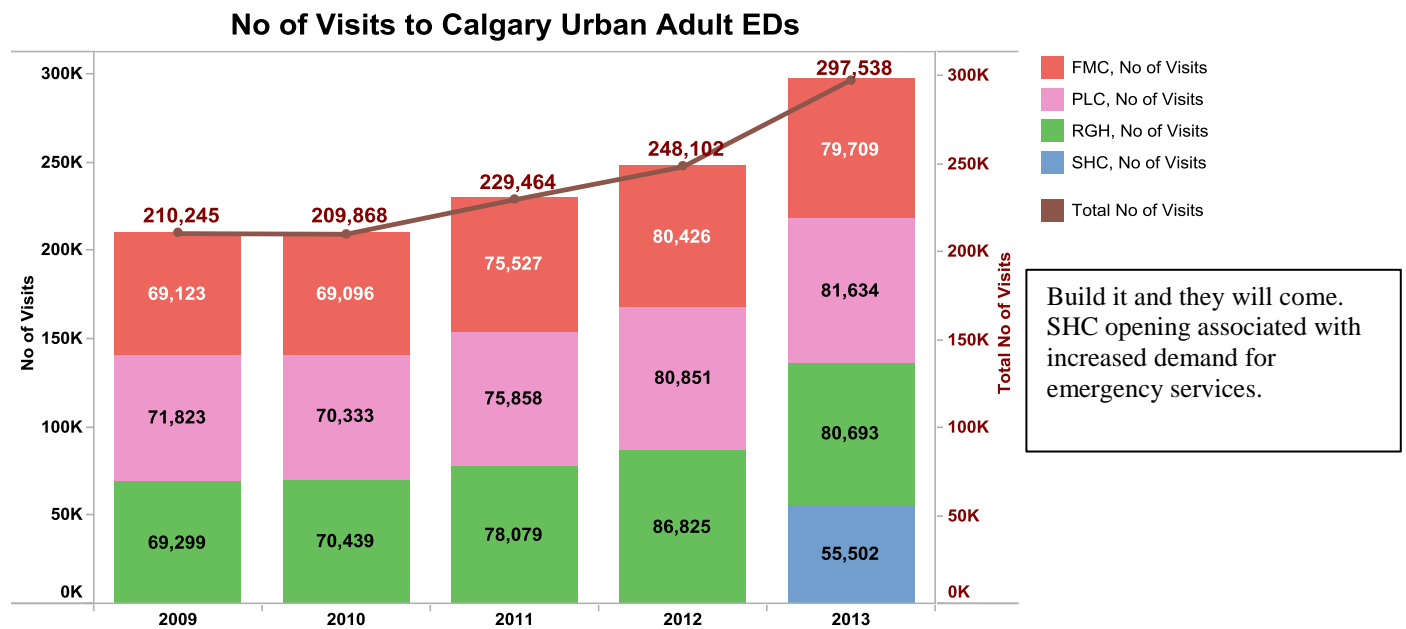
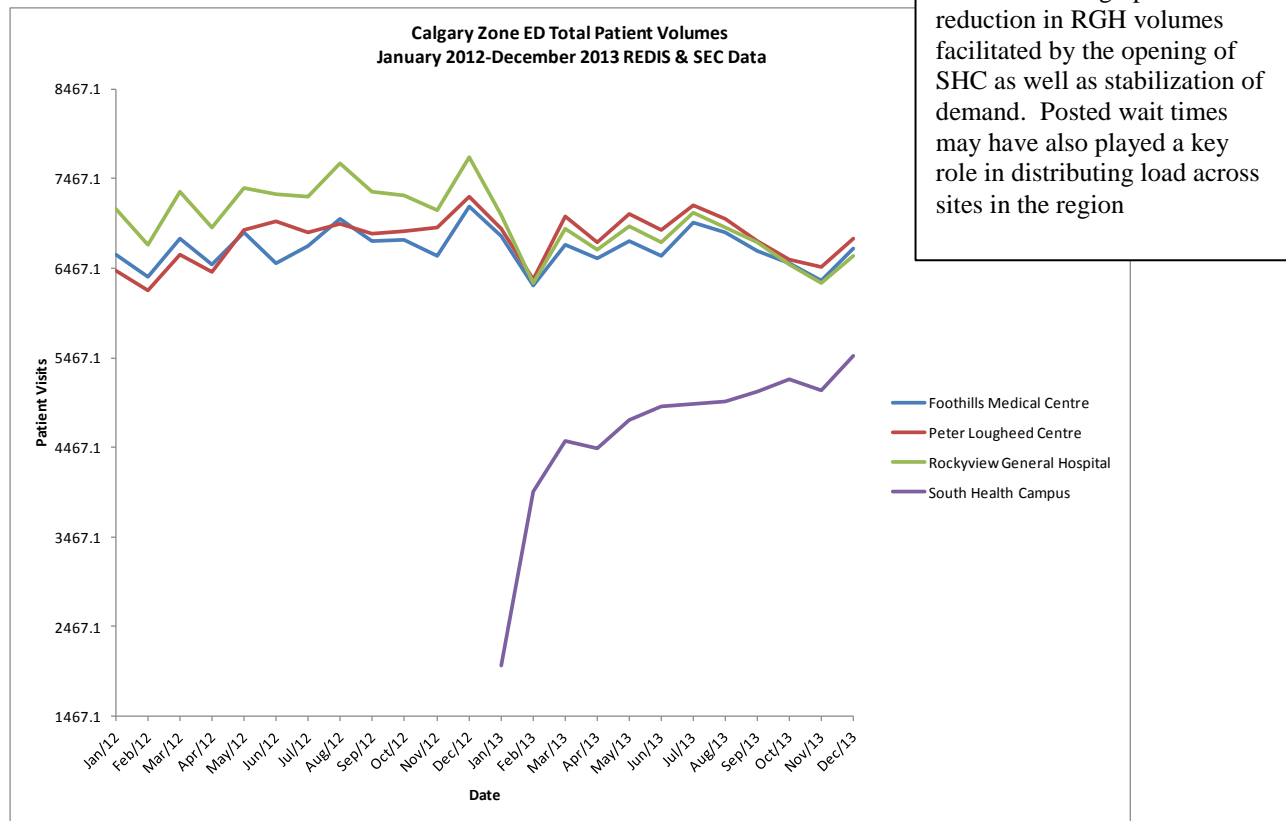
The final quarter of 2013-14 will see the completion of initiatives related to the Zone priorities for 2013-2014, and the development of priorities for 2014-2015. These priorities will be determined based on a patient-centered perspective and will align with the Health Quality Council of Alberta Quality Matrix to ensure consistency with AHS’ commitment to continuous improvement to provide Albertans with quality, accessible, and sustainable health care services. The following data table presents key performance metrics for the Calgary Zone Adult Emergency Departments. An appendix of Statistical Process Control Charts is also included to demonstrate the impact of improvement work done on some of these key performance metrics.

Initiative	Measure (M) and Target (T)	Current Quarter (Q3)	Last Quarter (Q2)	Same Quarter – Last Year (Q3 2012-13)
Reducing Lab Defects	M) Number of defective type and screen sample documentation cards T) 0 defects	FMC – 35 defects PLC – 12 defects RGH – 14 defects SHC – 7 defects	FMC – 49 defects PLC – 14 defects RGH – 15 defects SHC – 19 defects	FMC – 44 defects PLC – 10 defects RGH – 17 defects SHC - NA

Improving Discharge Processes	M) Percentage T) 90% of patients discharged from ED within 4 hours of arrival	FMC – 58% PLC – 59% RGH – 66% SHC – 72%	FMC – 52% PLC – 55% RGH – 60% SHC – 71%	FMC – 53% PLC – 59% RGH – 55% SHC – Not Open
ED to Inpatient Transfer Improvement	M) Length of Stay (average) T) Average of 30 minutes from Bed Assigned to ED Departure for all units	FMC – 65 min PLC – 56 min RGH – 56 min SHC – 53 min	FMC – 60 min PLC – 56 min RGH – 49 min SHC – 55 min	FMC – 56 min PLC – 52 min RGH – 46 min SHC – Not Open
ED LOS for Admitted Patients	M) Length of Stay (average)	FMC – 9.1 hours PLC – 10.4 hours RGH – 9.5 hours SHC – 8.9 hours	FMC – 9.1 hours PLC – 10.1 hours RGH – 9.4 hours SHC – 8.6 hours	FMC – 10.8 hours PLC – 11.8 hours RGH – 11.5 hours SHC – Not Open
ED LOS for Discharged Patients	M) Length of Stay (average)	FMC – 4.2 hours PLC – 4.0 hours RGH – 3.8 hours SHC – 3.3 hours	FMC – 4.3 hours PLC – 4.2 hours RGH – 3.7 hours SHC – 3.3 hours	FMC – 4.6 hours PLC – 4.2 hours RGH – 4.5 hours SHC – Not Open
LWBS	M) Percentage LWBS Compared to Volume	FMC – 2.1% PLC – 3.9% RGH – 0.9% SHC – 1.9%	FMC – 2.8% PLC – 5.3% RGH – 1.4% SHC – 2.5%	FMC – 3.0% PLC – 4.7% RGH – 2.1% SHC – Not Open
ED Volume	M) Number of Patient Visits	FMC – 19,538 PLC – 19,845 RGH – 19,410 SHC – 15,827	FMC – 20,517 PLC – 20,964 RGH – 20,767 SHC – 15,022	FMC – 20,532 PLC – 21,067 RGH – 22,099 SHC – Not Open

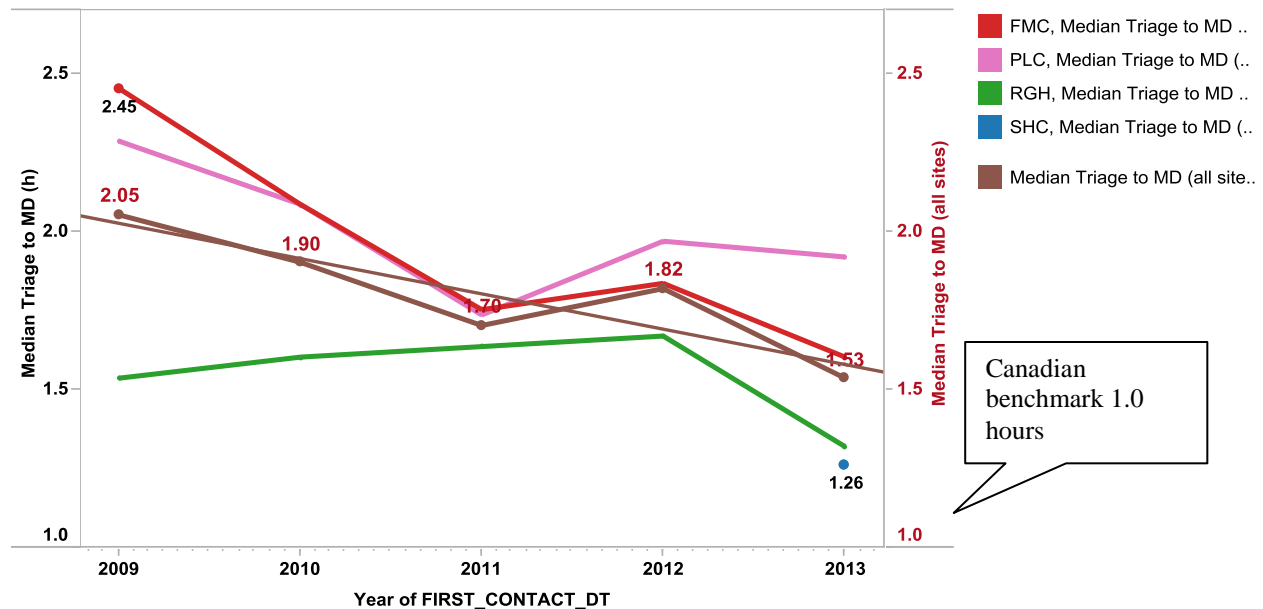
Operational Analytics

Calgary Zone ED Patient Visits

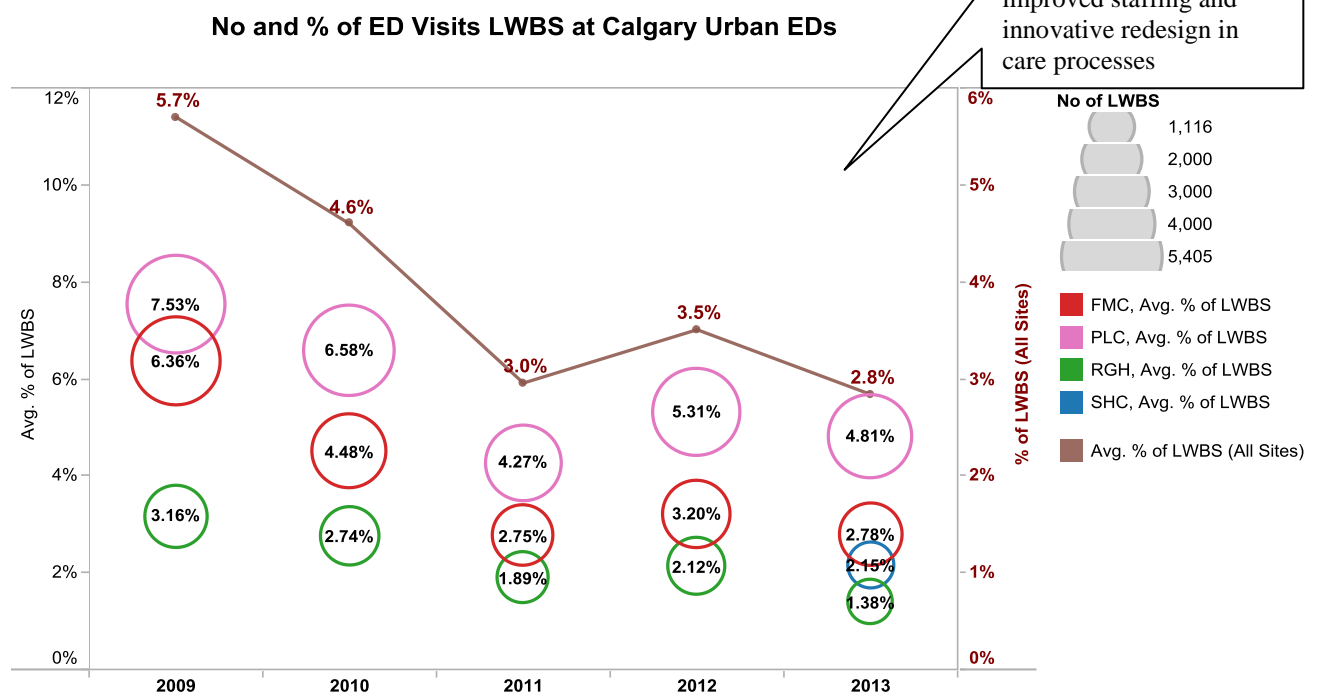


Physician Initial Assessment

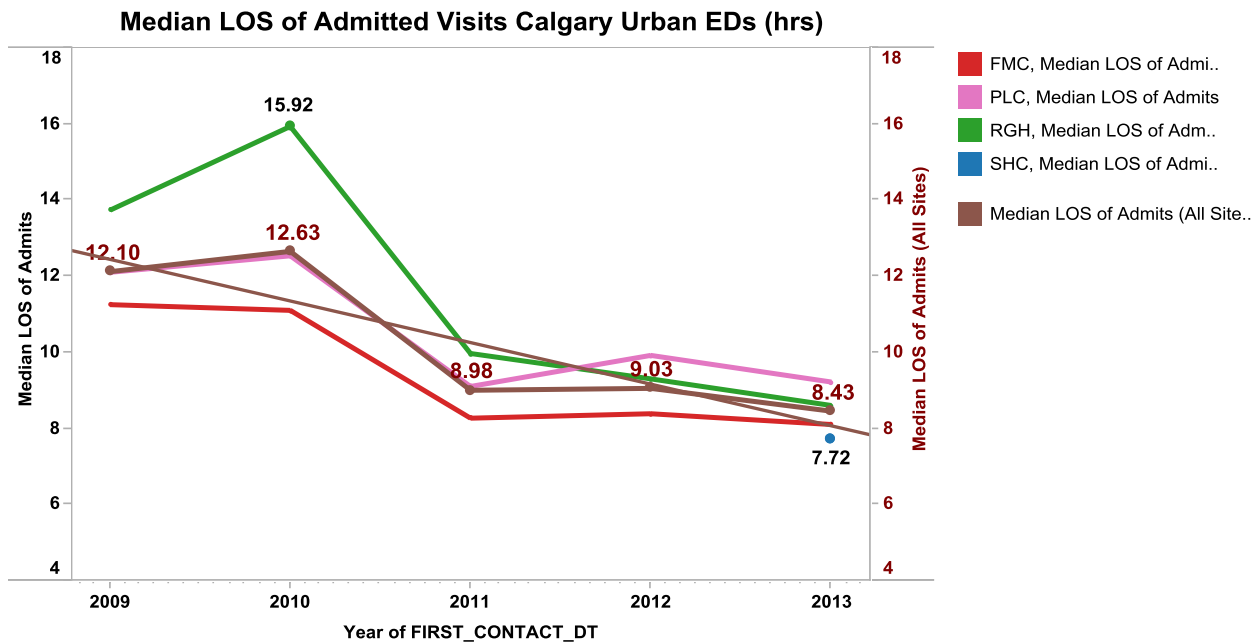
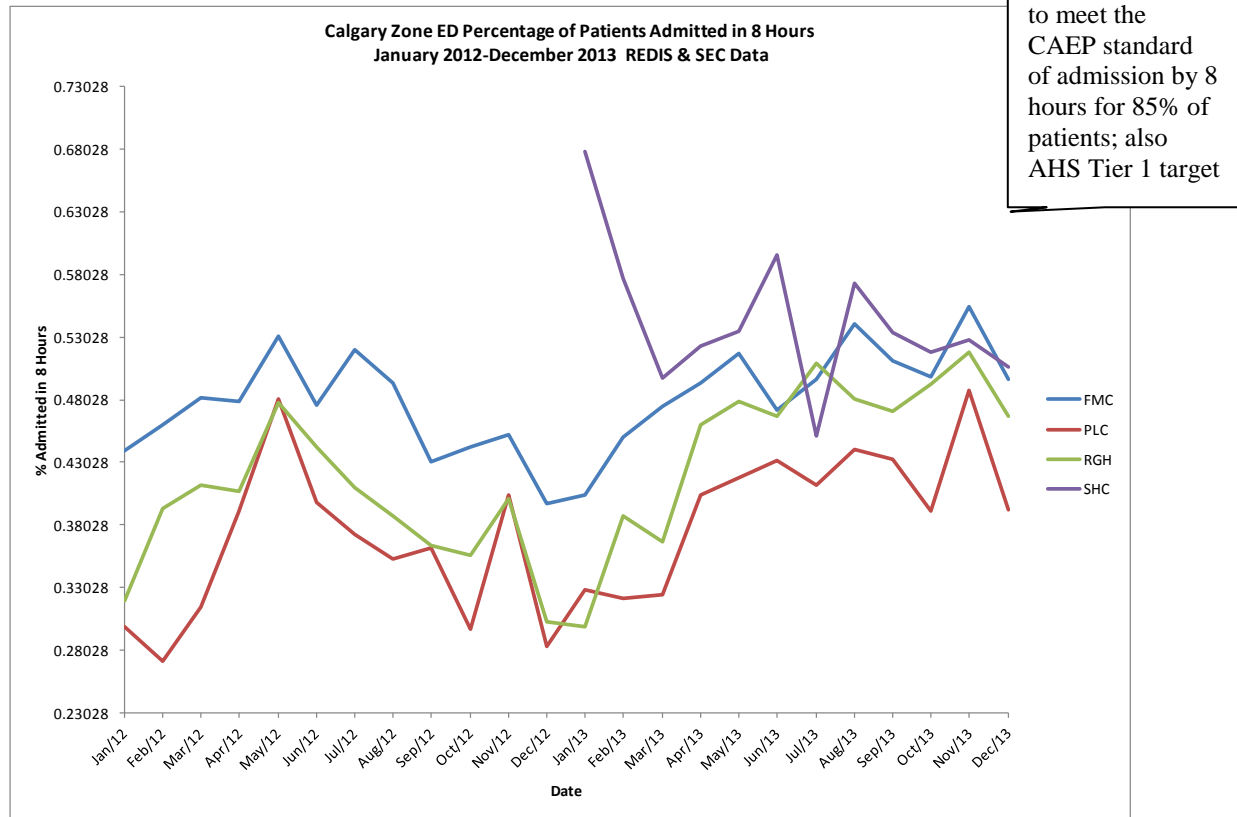
Median Triage to MD of CTAS3 ED Visits Calgary Urban EDs (hrs)



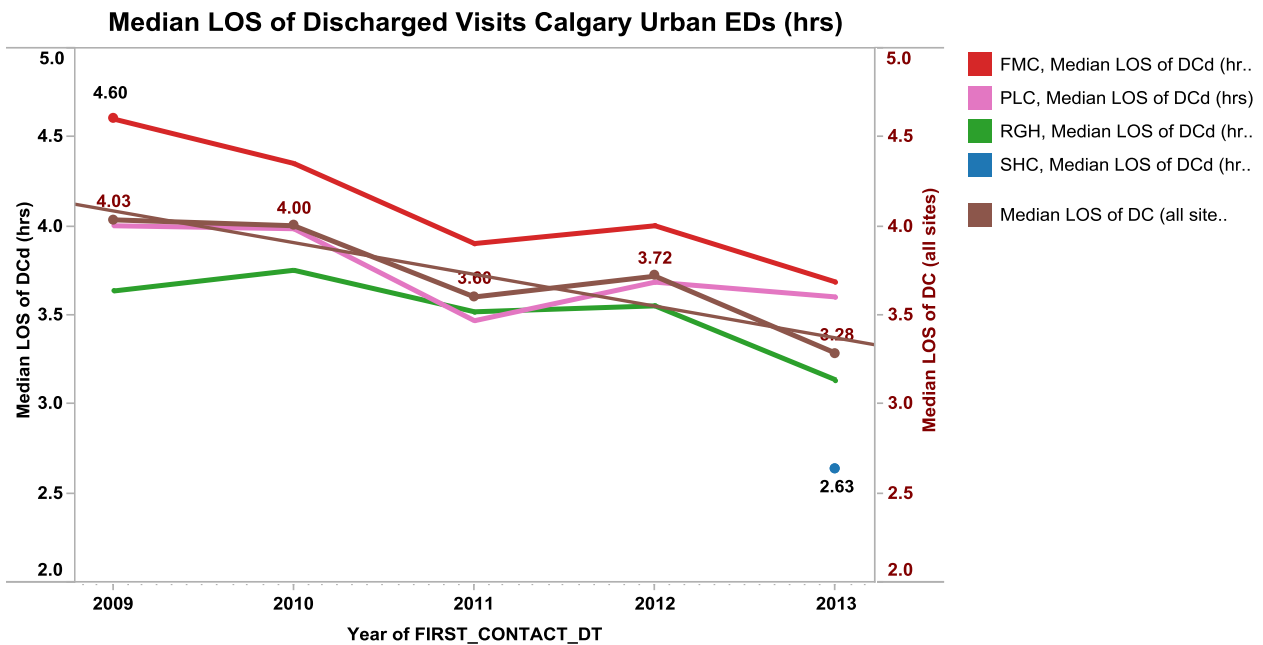
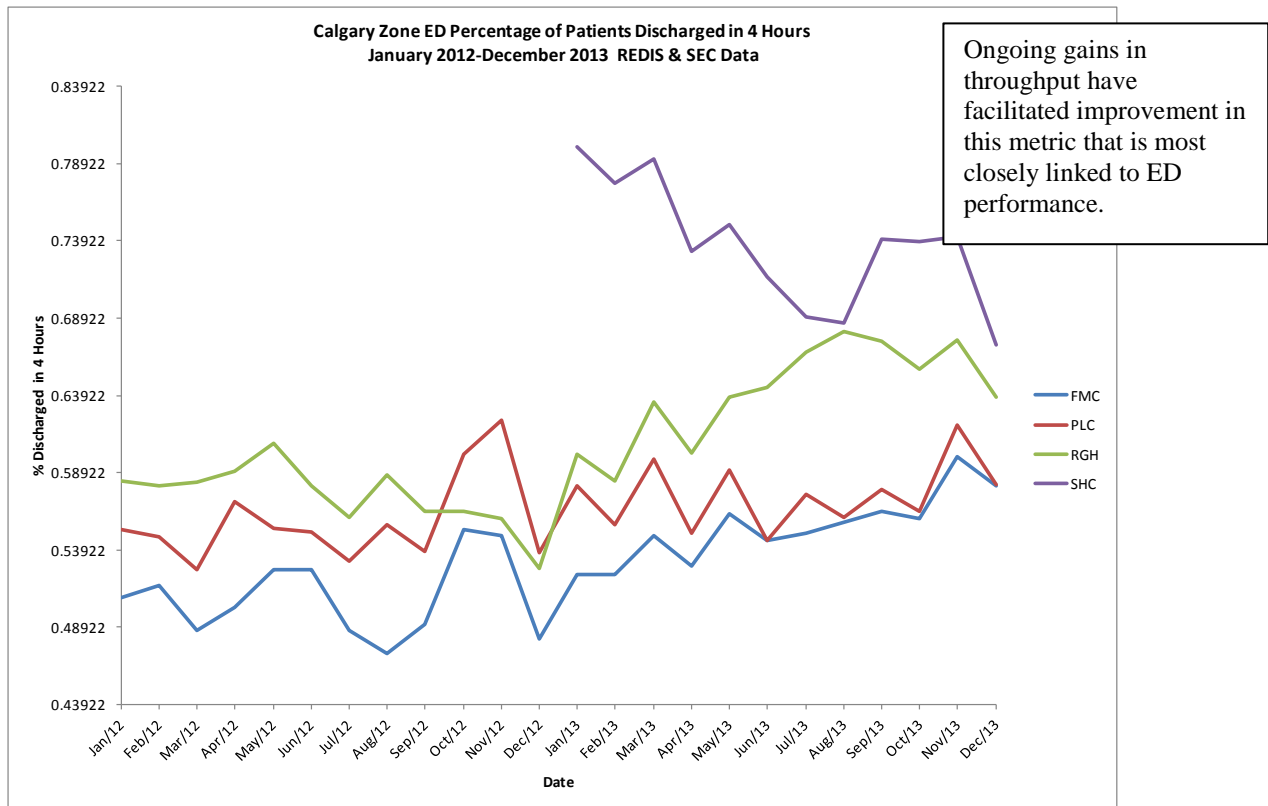
Calgary Zone Percentage of Left without Being Seen (LWBS) Patients



Calgary Zone Percentage of Patients Admitted Within 8 Hours

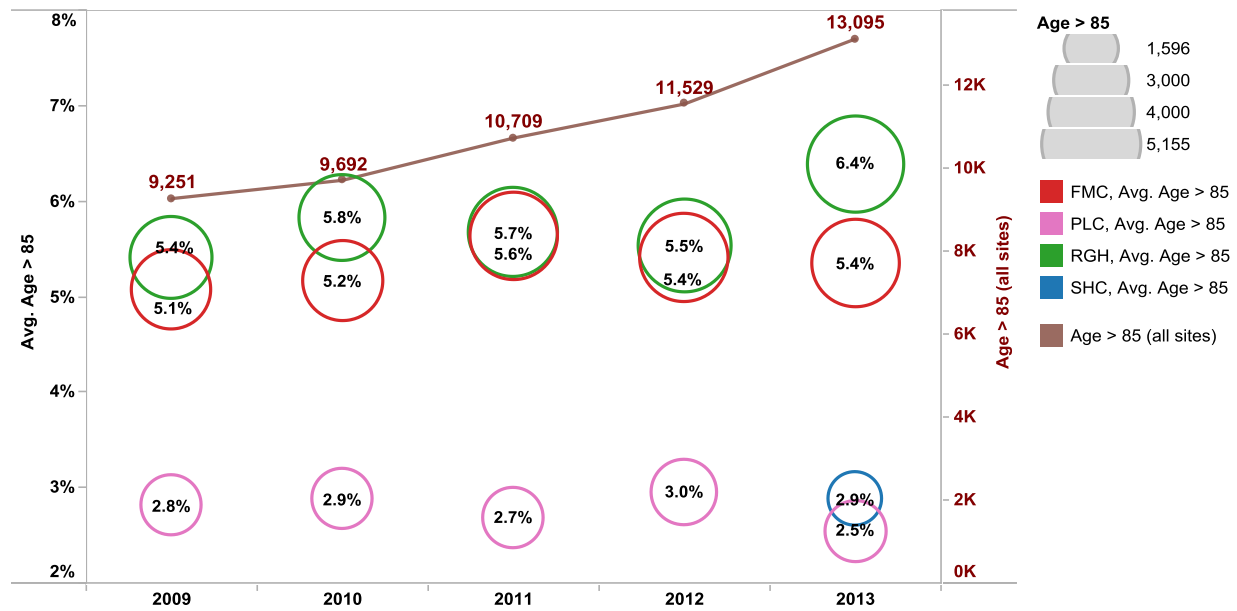


Calgary Zone Percentage of Patients Discharged Within 4 Hours



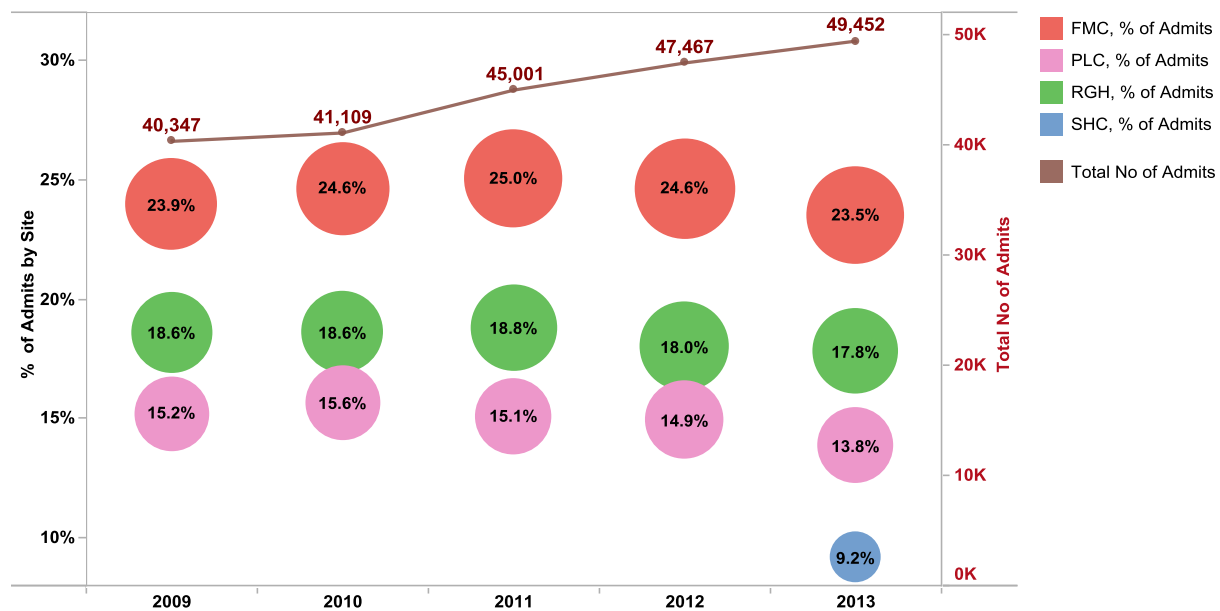
Demographic changes

No and % of ED Visits aged over 85 Calgary Urban EDs

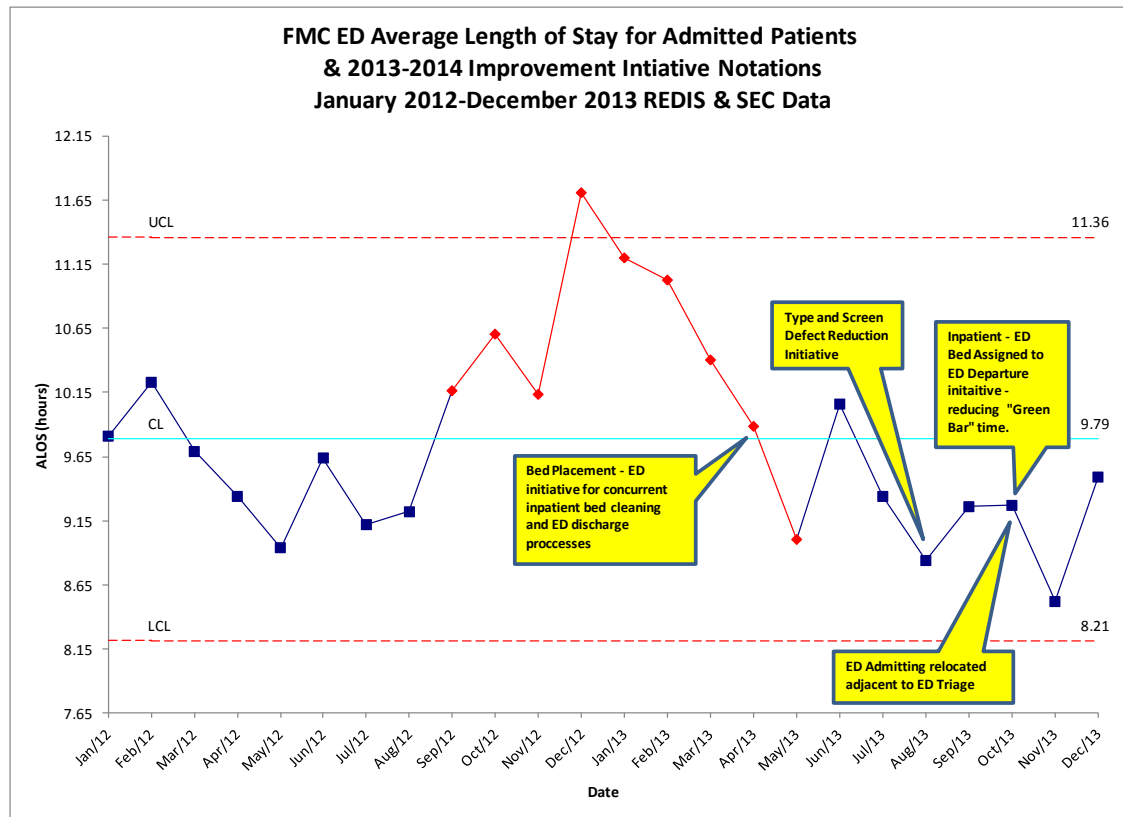


Admissions

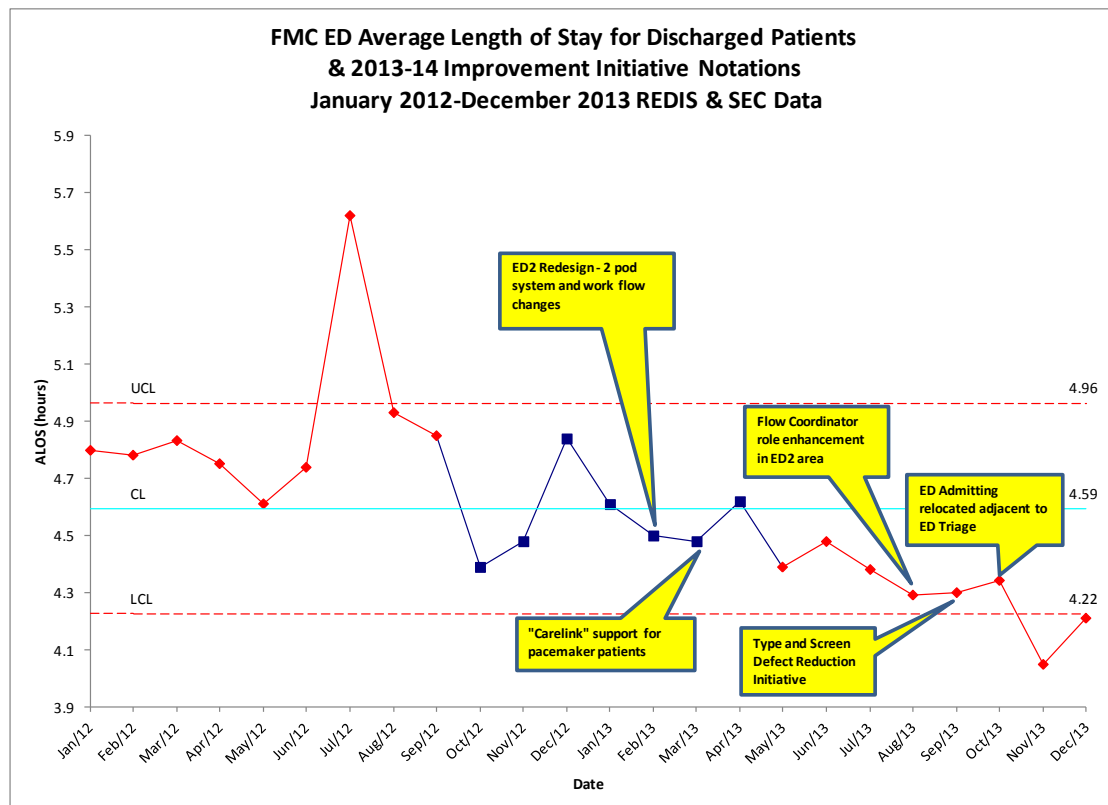
% of Admits by Site and Total Admits of Calgary Urban EDs



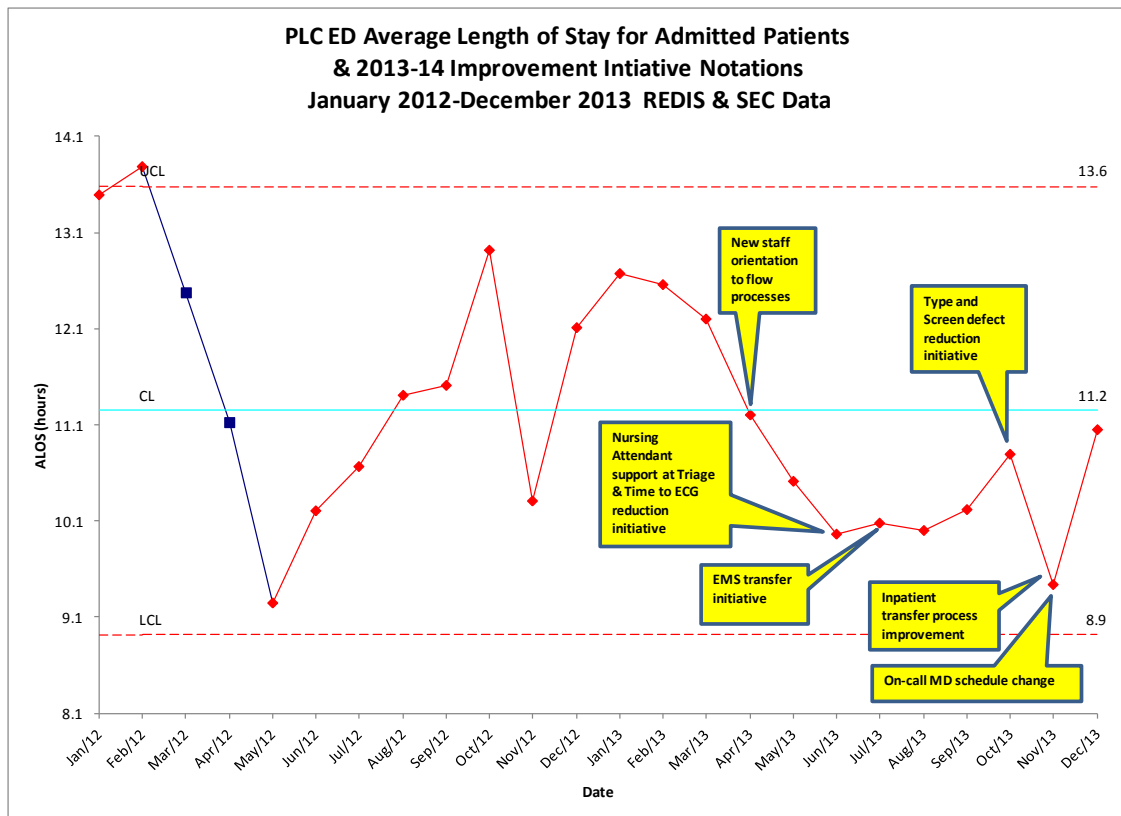
Average Length of Stay FMC – Admitted Patients



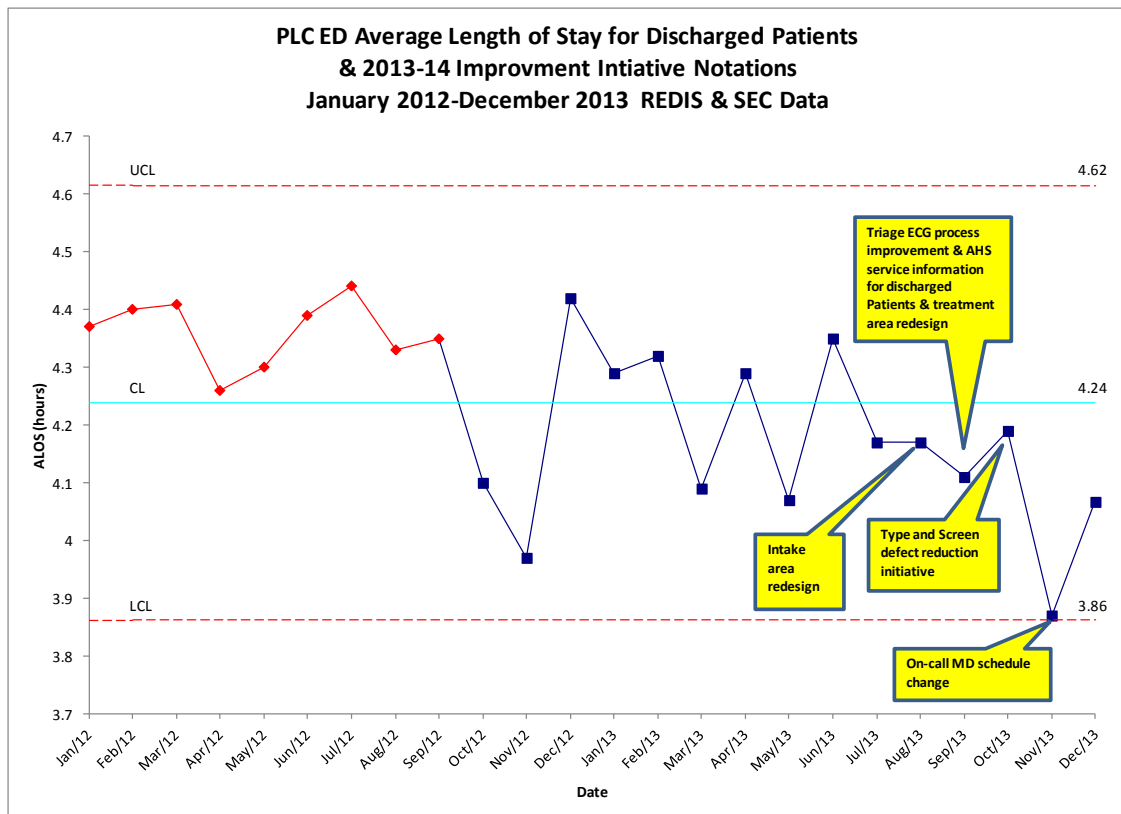
Average Length of Stay FMC – Discharged Patients



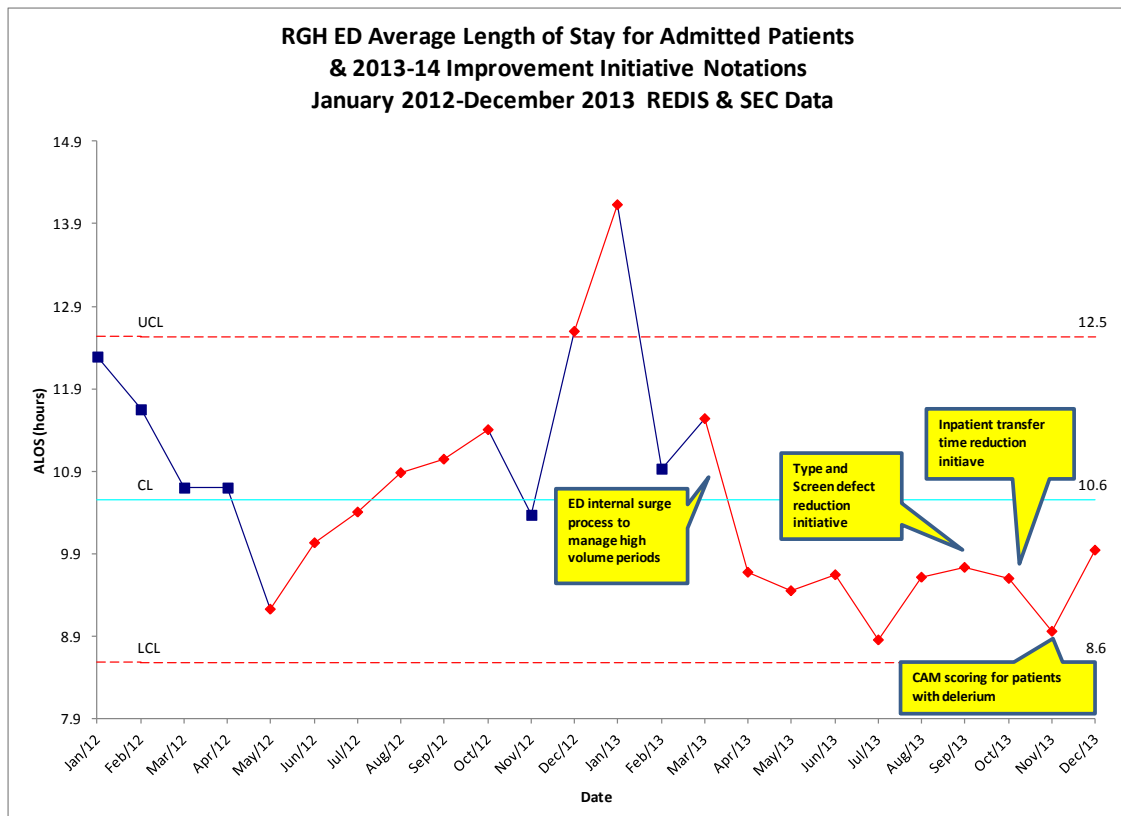
Average Length of Stay PLC – Admitted Patients



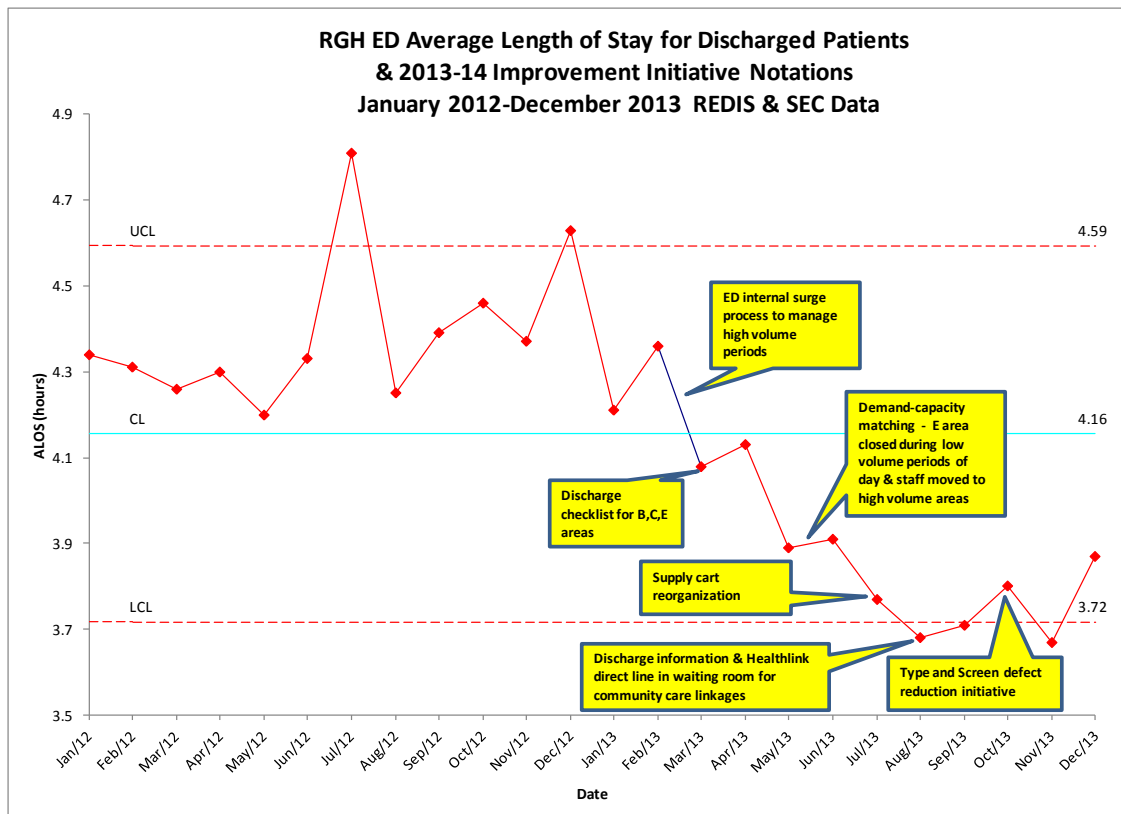
Average Length of Stay PLC – Discharged Patients



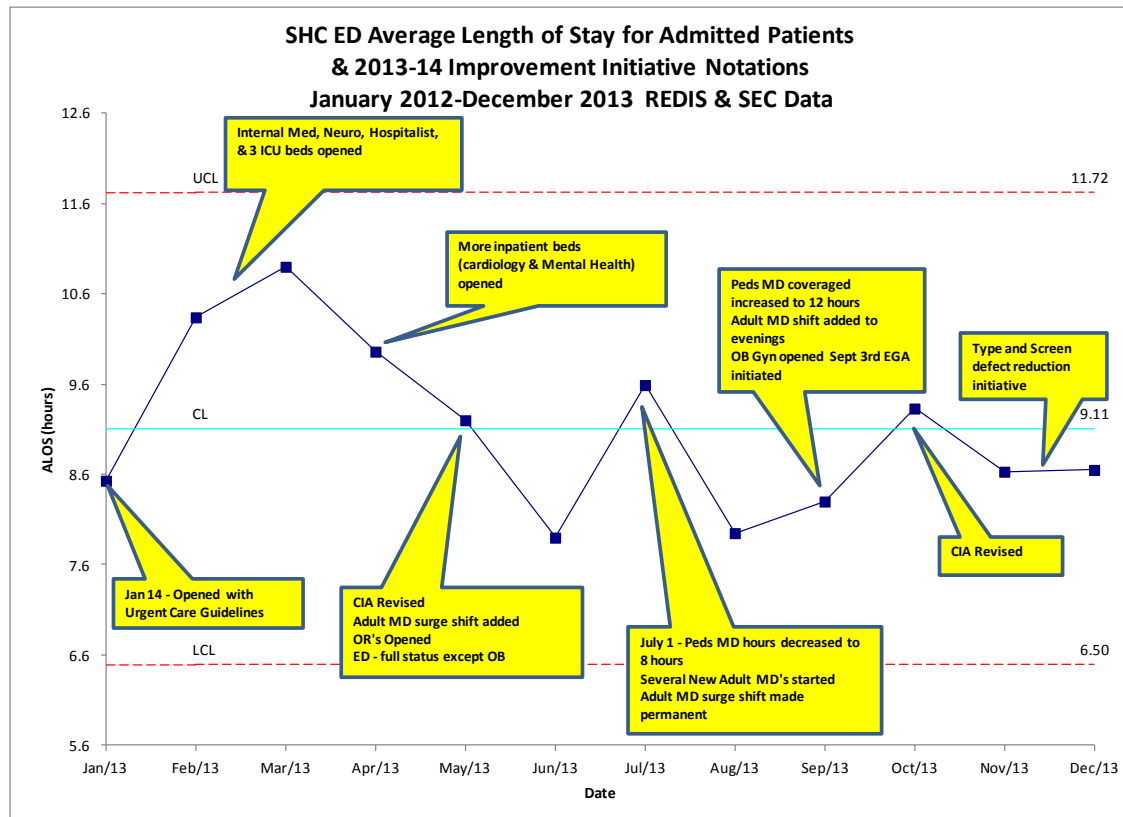
Average Length of Stay RGH – Admitted Patients



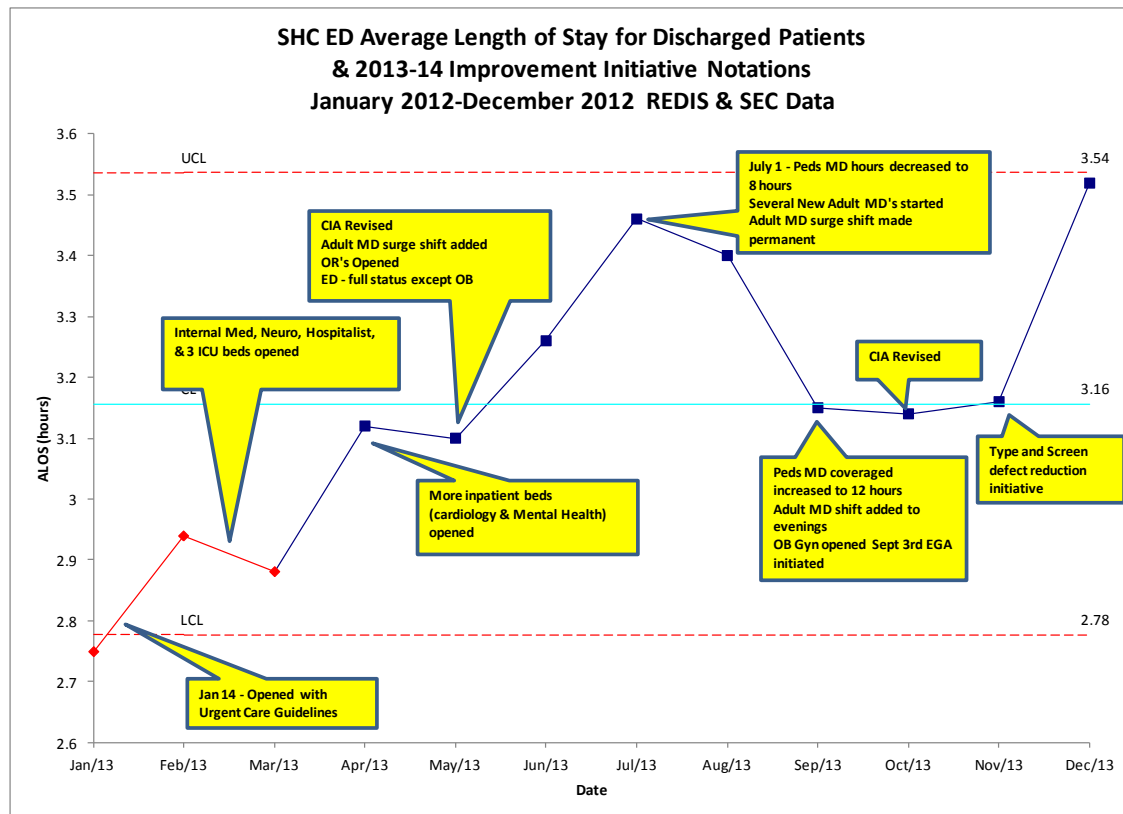
Average Length of Stay RGH – Discharged Patients



Average Length of Stay SHC – Admitted Patients



Average Length of Stay SHC – Discharged Patients



Site Updates

Peter Lougheed Center - PLC

One of four full service Emergency Departments in the City of Calgary, the PLC ED provides emergency services to the dynamic and rapidly expanding NE quadrant of the city. Our NE location and easy access via LRT dictates a unique and challenging mix of patients including low socioeconomic status inner city residents, refugees and recently arrived citizens, critically ill neonates and young children and walk-in penetrating trauma from gunshots or stabbings. Our biggest success has been our ability to compassionately and competently care for this challenging and important patient group while managing the highest volume of daily ED visits in the city, with the smallest ED in the city! The PLC ED was the innovator of the “waiting room care” initiative that is now used at both the FMC and Rockyview Emergency Departments. A small storage area was repurposed as three patient assessment beds and we now routinely see 30% of our daily patients in this area.

Rising patient volumes combined with our inability to further expand our relatively small department is impairing our ability to meet AHS targets for timely patient care. This challenge is being met with innovation, creativity and caregiver flexibility on a daily basis as we strive to use our space as efficiently as possible. We look forward with great excitement to the possibility of moving into the new PLC ED “shell” created during the recent site expansion. The potential to create a new department that is able to provide excellent care to this patient population that is so important to the social fabric of the City of Calgary is eagerly anticipated.

PLC ED patient volumes rose 1% in 2013 with PLC volume the highest in the Calgary Zone Acute ED's. PLC continues to provide excellent care with only 34 stretcher spaces; 30% of the patient volume was seen in a 3 stretcher Intake area. In December of 2013 construction of a new 6 bed Intake area was initiated with a commissioning date expected in late March 2014. Construction hoarding presents a great challenge to all staff and patients when accessing Triage. This area is being constructed in the past ED Waiting Room.

Manpower:

Rising patient volumes required the addition of one more physician shift; this will be commenced in January 2014. All other ED staff is participating in AHS Rotation Optimization being lead by Workforce Edge with the goal of increasing full time employees and optimizing the workforce.

Committees:

PLC ED Flow Committee meets monthly with membership including Physicians, Management, Senior Leadership, QI consultants and EMS with the goal of enhancing and improving ED flow through QI initiatives. 2013 saw the implementation of full scope of practice for the LPN/ROT, Nursing Attendant dedicated to Triage, new roles and responsibilities for Volunteers in the ED, new ED MD process review and the planning for the introduction of a Triage Lead RN to start in January 2014.

PLC ED also participated in Zone and Provincial initiatives that included provincial orientation for RN's, Triage ECG's, PCN after hours referrals, Medication Reconciliation, Green Bar

improvement initiatives, Reducing lab defects project and the Inpatient Transfer project. All of these initiatives/projects were achieved through multidisciplinary collaboration within the ED, the PLC site, the Calgary Zone and provincial AHS networking including internal and external shareholders.

Rockyview General Hospital - RGH

The RGH Emergency department has enjoyed a decrease in patient volumes, which coincided with the opening of the South Health Campus. Throughout the Calgary ED Zone, we continue to see an overall increase in ED visits however distribution of this volume is now over four adult ED sites. The RGH has focused on a number of Quality initiatives to improve the quality of care to our patients. Our focus is to improve the quality of the patients, discharge experience, decrease recurrent use of patients to decrease ED volumes, and increase departmental efficiencies through demand capacity matching.

The discharge experience has been strengthened to include better quality discharge instructions and follow up teaching. Discharged patients are given a health care options sheet which outlines community resources and options for follow up. A direct line to Health Link was established in the department for patients wishing to book follow up appointments at a PCN clinic. Information sheets on family care clinics, primary care networks and other community resources are made available throughout the department for patients and visitors to take.

Appropriate emergency care: how do we decrease ED volumes? We are focused on supporting patients who visit the ED frequently. Patients are identified as frequent visitors with 12 or greater ED visits per year. In collaboration with our EMS colleagues, family MD's, patients and the Emergency department team we have established a goal of improved support and development of a pathway to decrease ED dependency. Our staff and Social Workers develop relationships with this patient population and refer the patients to the Community Paramedic Program. Patients who do not have a family MD are referred to the Family Care Clinics, whose mandate is to manage medically complex unattached pts.

Other highlights include the implementation of the early identification of the patient suffering with delirium, utilizing the CAM Score. Once a CAM positive patient is identified in the department their priority to be seen is increased (if still waiting to be seen by a physician) or if they are already awaiting an inpatient bed, bed placement is notified to assist in prioritizing bed assignment.

Additionally, we were also the proud recipient of a state of the art SIM mannequin to enhance training for our staff and physicians; funded by a generous donor in 2013. Plans to further develop this teaching adjunct and improve patient care will be continued with planned sessions throughout 2014.

South Health Campus - SHC

Operations:

The South Health Campus Emergency Department opened to Operations on January 14, 2013.

- The department initially accepted ambulance traffic under the Alberta Health Services Urgent Care stratification guidelines.

- Since then we have been very busy and are currently seeing 180 patients/day and a 9% admission rate. We saw just over 57,000 patients in our first year. The SHC is also fully operational with approx 270 inpatient beds and all major services are on site.
- The site phased in clinical operations between January 14 and September 3, 2013
- The last service to be commissioned for service was the Obstetrics and Gynecology team
- 2013 was a great year for the South Health Campus. After years of planning, we finally opened on Jan 14th 2013. The SHC ED continues to see a large volume of pediatric patients (approx 25%) and has 2 shifts/day staffed by ACH ED Pediatric Emergency physicians.
- The SHC ED Psych assessment team continues to provide Outreach services to patients discharged from the SHC which ensures timely follow up of patients who present to the SHC ED with mental health concerns
- The SHC ED also continues to embrace a great culture of collegiality. Our first annual SHC ED Children's Christmas party was a huge success with a visit from Santa, Christmas carols and gifts for the over 50 children that attended. Our staff Christmas Party was also very well received with over 100 members from all the various disciplines within the SHC ED attending.
- As we move forward, the SHC ED continues to plan to evolve and innovate. We recently restructured our Intake area, which has been very successful. We are also hoping to develop the remaining two pods (B and C pod) to prepare for our continued growth.

Demographics

- Consistently 20 – 30 percent pediatrics
- Attending to the needs of 180 patients per day
- Admission rate of 9 percent
- First twelve months of operations attended to 55,000 patients

Impact on Calgary Zone Emergency Departments

- Though not known if a direct influence on volumes at other sites, since the SHC ED opened,
 - RGH ED decreased by 6000 visits in 2013 vs. 2012
 - ACH ED attended to 500 less EMS Patients in 2013 vs. 2012

Innovative service delivery

- Podding of Physicians to contribute to increased physician efficiency
 - Fewest number of physician shifts per 24 hours of any Calgary Zone ED
- Pediatric Emergency Physicians 12 hours per day in the SHC ED working alongside the SHC ED "Adult" Physicians
- RRTs intubating
- Paramedics in the Emergency Department
- Full Scope of Practice LPN-Ortho Techs
 - Sharing of LPN-Ortho Techs between the ED and the Bone & Joint Clinic
- RN staffing at 70 percent full time; 30 percent part time
- Simulation training
- The Early Gestational Assessment Clinic that allows the ED to triage first trimester patients with vaginal bleeds upstairs to see the Gynecology service if they meet criteria

- ‘Pods’- physicians and nurses are assigned to pods with an emphasis on enhancing communication between care providers on the Pod team and minimizing time spent by physicians moving between patients
- A DI reading room within the ED
- Specially trained Patient Care Techs who are available to help physicians with various ‘non-value added’ tasks
- 24/7 Pharmacy coverage: the pharmacists assist with medication reconciliation and abnormal lab follow up

Manpower and Workforce Planning

Highlight of the Year: MD Recruitment and Staff Hiring:

Early in 2011, we began an aggressive nursing staff recruitment campaign to staff the SHC ED.

The recruitment process:

- Unit Managers interviewed over 400 prospective staff
- Educators provided orientation to nearly 200 staff

Changes in Recruiting Practice:

- Massive scale hiring
 - Developed rigorous tracking mechanisms
 - Met repeatedly with Union reps to establish collaborative relationship between SHC ED and reps from UNA, AUPE, HSAA
- large scale reference check process developed and adhered to
 - reviewed all employee files of current AHS employees
 - minimum of two documented references for all Employees

Future Needs:

- expansion of 30-bed ED to 60-Bed ED
 - requires capital to build two more pods and one trauma/Resusc room
 - requires operating dollars for all personnel
 - no time line established

FMC

Manpower

FMC ED overall patient volume in 2013 was similar to 2012, with a total of 79,709 patients registered. Acuity of this patient population remains high, with 34% CTAS 2 patients and an overall admission rate of 24%. Triage to MD time for CTAS 2 and 3 patients were similar to 2012, at 63 minutes and 103 minutes respectively. Median length of stay for both admitted and discharged patients showed modest decreases, at 8.1 hours and 3.7 hours.

Department

Delivery of care in FMC ED occurs in three areas. ED1 is for patients who require a bed for the duration of their ED stay, including all monitored, unstable or non-ambulatory patients. ED2 employs an Intake model of care, and is for ambulatory, stable, CTAS 2 and 3 patients. Minor

Treatment continues to see CTAS 4 and 5 patients, predominantly skin and soft tissue, orthopedic, ophthalmologic and ENT issues.

We continue to be challenged in our delivery quality and timely care by use of temporary spaces and ongoing renovations, being completed in four phases.

Phase 1, construction of our new Minor Treatment area is now complete, however will not be available for use until construction of adjacent areas is complete.

Phase 2 construction began in September 2013, encompassing our previous entrance way, waiting room, admitting area and a portion of the ambulance bay. A temporary entranceway has been created. Construction occurring during this second phase includes our new Intake area, waiting room, entrance way, main unit clerk desk and triage. This area, as well as the new Minor Treatment area, is slated to open in April 2015.

Following this, construction of Phase 3 will begin, and will time encompass 13 of our main department beds. This is slated for completion in April of 2016.

The fourth and final phase of renovation will encompass our current Minor Treatment and Intake areas (temporary space, previously the FMC ICU and DI areas). Development of the Functional Plan for this area is currently underway.

Physician Manpower

Start times of physician shifts were once again adjusted in 2013 to best match hourly patient arrival with MD sign-up capacity. Despite this, patient arrival continued to exceed sign-up capacity for many hours of the day. Ongoing MD Manpower shortages prevented addition of further scheduled shifts and so the voluntary surge shift was continued. . In 2013 FMC ED had 14 or 15 shifts/day with a total of 103 scheduled MD hours/24 hours.

Dedicated ED2 MD coverage occurs 1000 – 2200 using the first two hours of MD shifts beginning during this period. Dedicated MET MD coverage occurs 1000 – 2400 with two shifts of seven hours. Future manpower plans include addressing large patient volumes in ED2 through addition of two full shifts of dedicated ED2 MD coverage.

Committees and Initiatives

The FMC Operations Committee: meets once per month. Multidisciplinary representation includes MD's, RN's, Unit Clerks, RT's, IT and pharmacists.

The Change Team: Meets every one to two months. Members that include admin and non-admin front line staff identify required QI projects, and see to completion. Current projects include prevention of delirium in the department. Successful projects have included co-location of ED triage and admitting. Ongoing work continues to keep ED2 processes efficient.

The ED/DI committee: Includes admin teams from ED and DI that meet once a month to improve mutual processes. Recent and on-going projects include improving after- hours ultrasound flow, timeliness and processes for discrepancy and abnormal results, and out-patient MRI ordering process.

The ED/ICU working group: Initiated in February of 2013, made up of ED and ICU MD site chiefs as well as ED MD and ICU MD's, meets on a as-needed basis to discuss mutual patient issues and develop processes to provide optimized care for our shared patients. Completed projects include design of ED ICU sepsis and ED ICU Altered LOC consultation frameworks, and Disposition Dispute Resolution framework. Ongoing projects include development of an algorithm for investigation, management and disposition of massive and sub-massive PE.

Over the course of 2013, the FMC ED has had ongoing monthly orientation of several new RN's and various Support Staff to the department, contributing to the overall staff count of 430. The

orientation of RN's to the Emergency Department has had some growth and change over the last two years, moving towards a standardized Provincial Orientation. We have also had the opportunity to take advantage of the CTAS courses offered by CAEP, in order to standardize and promote best practise of triage RN's. As well, there has been good collaboration between the CNE's and ED Physician group, as several Adult & Pediatric Sims have been offered to the staff to help facilitate learning in a simulated context. This has become a standard in orientation of new staff, as well as continued learning for our more experienced staff.

Retention is an element of manpower that has contributed to the overall dynamic and change in ED culture and is a focus as we look at rotation optimization and a more regular relief staffing model. There have also been changes made to the staff rotation in terms of start times and baselines, allowing the department to more accurately meet the demand of patient volume over the 24hr course.

Quality Improvement within the Department

Since the early part of 2013 we have had a regular fulltime Quality Improvement Nurse, who has been able to have concentrated time and effort on the matters of quality improvement within the department. Initiatives that the QI Nurse has been involved with include improved discharge time and consequent decreased 4hr LOS for patients, work towards improved care for the elderly in the ED, improved greenbar times for the admitted patient population, and more recently a focus on those patients who frequent the Calgary-zone ED's on a very regular and over abundant frequency.

Operational Changes within the Department

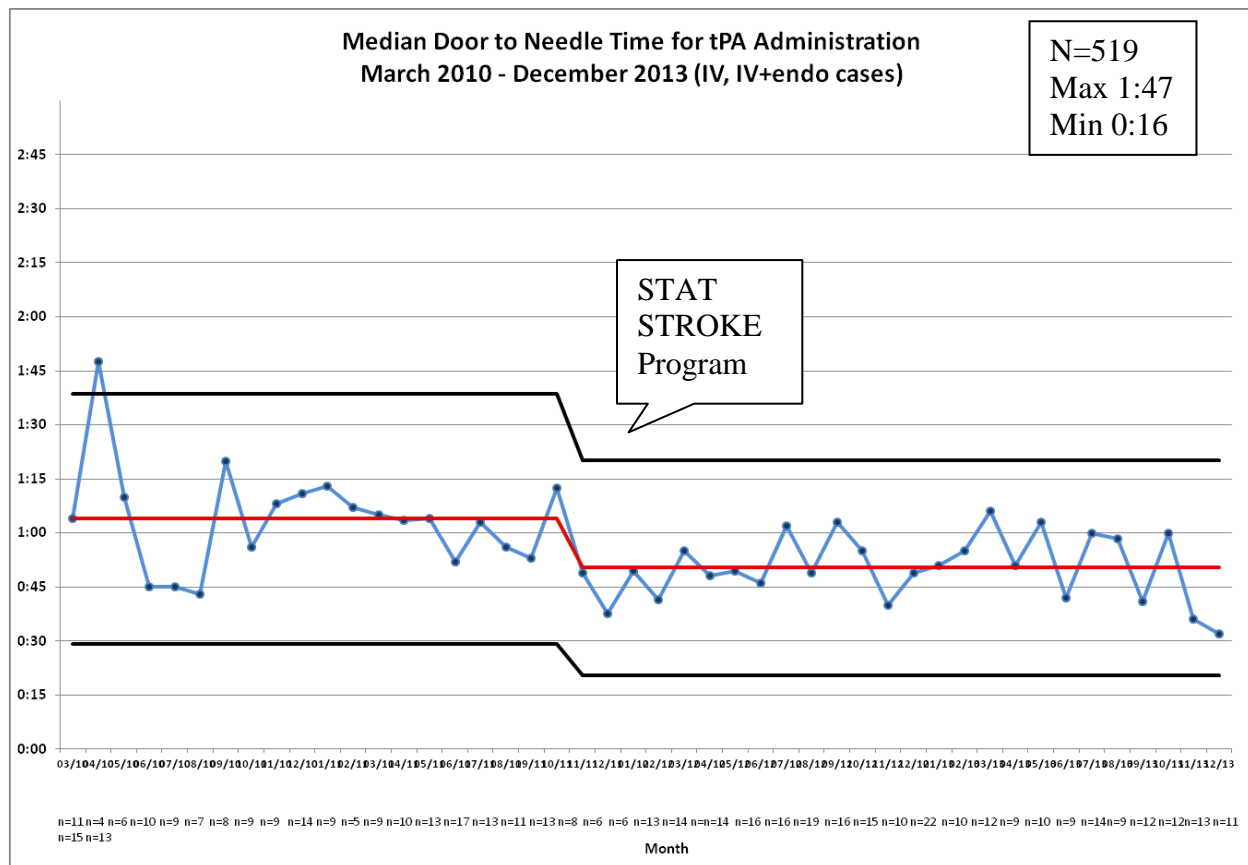
We have had several operational changes in the ED throughout 2013, not unlike all other ED's in the zone. Implementation of the SEC & SUNRAY systems in May of 2013 along with ongoing process changes in our ED2 area has had a tremendous impact on not only patients & families, but on the staff as well. There has been stabilization of the 8hr LOS target for the admitted patients and an improvement in the 4hr LOS target for the discharged patients.

The implementation of Medication Reconciliation in October of 2013 has brought to the forefront collaborative efforts from both the ED & Pharmacy staff alike. The current target population for Med Rec is the admitted patient group, along with a focus on those individuals who are at higher risk of medication error.

In working together with the Surgical Portfolio, specifically the FMC Trauma Services group, there has been successful implementation of McCaig's OR 3-6. There were several real-time simulations, as well as table-top educational simulations ongoing throughout the year.

In the latter part of 2012 into 2013, the FMC ED implemented a change to have a permanent Palliative Care room, complete with participation in the site-wide White Rose Program. While death is always difficult, it is even more so in a busy department, where the focus is primarily preservation of life. The addition of this new room and White Rose Program has been instrumental in being able to better support the grieving family and dying patient.

Together with the Stroke Team, the ED has implemented the STAT STROKE initiative wherein those patients who meet the criteria of STAT STROKE, are expedited through the initial ED intake process, to have their CT scans completed in record breaking time, and lytic treatment initiated prior to reaching the inpatient unit. We have had tremendous success in this endeavour, with our best door-needle time being 16 minutes.



In an emergent response to the 2013 Alberta Floods in June, the Calgary Foothills Primary Care Network (CFPCN) together with the FMC ED developed a protocol to help offset the patient demand on the ED. Following this great success, collaborative work began again with the ED and CFPCN groups, and we are currently involved in a pilot project wherein patients who meet specific criteria are being referred to the PCN Clinic directly from the ED. The pilot project was implemented in December 2013, and is ongoing until March 2014, at which time comprehensive evaluation will be completed and the longevity of the project will be determined.

Employee Development

Several of the ED staff has been working toward enhancing their own professional development by way of enrolment and participation in various areas. We have a number of staff working toward their MN, NP, and ACCN, along with those who have taken a keen interest in participating in conferences and other continuing education opportunities. This is a far greater interest now than ever before in the ED.

Emergency Department Clinical Informatics in the Calgary Zone:

2013 was a banner year for Clinical Informatics in the Calgary Department of Emergency Medicine. The many highlights include:

1. Implementation of Sunrise Emergency Care to all Acute Care hospital Emergency Departments including Alberta Children's Hospital, as well as the 2 urban Urgent Care Centers (Sheldon Chumir and South Calgary)
 - a. New tracking board to replace the old REDIS system
 - b. Enhanced functionality and information on the tracking board including improved patient information, better isolation information, improved new order notification, improved consultation tracking, custom built views to support MD, RN, and unit clerk work flow
 - c. Flow views designed with timers to assist with department flow, surge triggers, and over capacity management
 - d. Improved data flow to REPAC for EMS destination and redistribution of patient demand
2. Implementation of a Structured Triage note with standardized presenting complaint and computer facilitated CTAS (Canadian Triage and Acuity Score).
 - a. Improved standardization of CTAS score
 - b. Better data and electronic recording of detailed presenting complaint enabling site to site comparison
 - c. Mandatory ILI screening (and appropriate isolation requirements)
 - d. Coordination with ARTSSN (Alberta Real Time Syndrome Surveillance Network) on real time data extraction and analysis to see ILI outbreaks earlier as well as other disease patterns within the Calgary zone
3. Implementation of Sunray card system in the ED's
 - a. Allows session persistence of key informatics systems in the ED (SCM, SEC, Impax, MUSE, NetCARE) improving efficiency and flow by reducing time spent logging into systems
 - b. Enhances security as removing the card, darkens the computer workstation enhancing privacy
4. Ongoing work within ED order sets to optimize use, implement evidence based practice, and enhanced Clinical Decision Support
 - a. This work has been coordinated with internal ED experts, other services, provincial guidelines, and provincial Clinical Networks
 - b. Includes work with CLS (such as adding hsTnT and removing CK/CKMB, addition of proBNP)
5. Improved data collection and analysis
 - a. Implementation of SEC as well as the structured Triage Note allows much more robust data collection and analysis around:
 - i. Patient flow and wait time indicators/barriers
 - ii. Individual physician performance information
 - iii. Utilization / research data

Flood Response:

During the early summer of 2013 Calgary experienced one of the worst floods in recent memory. As a result Canada Task Force Two, a provincial disaster response team, was called into action. The team consists of firefighters, paramedics, EMT's, engineers and physicians. The role of the team is provide a response whether it be medical, rescue, search, or logistics to any and all disasters.

Within the Calgary region there are 4 physicians presently active members on the team. Drs Hanrahan, Tourigny, Lendrum and Da Silva. All four were deployed at various stages during the floods of 2013. Interestingly, we were utilized in completely non-medical roles. For example, Dr. Hanrahan became the "Operations Chief" responsible for 100 plus firefighters and paramedics per day organizing where and when to send them throughout the city. Other activities that they physicians were involved in were anything from sweeping floors to manning sump pumps to pump out basements and businesses. However, while the jobs being performed were not medical by any stretch we still were responsible for the health and well-being for the entire Task Force when on shift.

It was remarkable to see what people would do to help their fellow Calgarians. It was also an extremely exhausting and tiring experience. Organizing and responding to hundreds of calls per day to help with flooded basements and car parks while keeping track of where all your teams were and needed to be was an exercise in mental toughness. In fact, it wasn't very long before we were eager to return back to our clinical ED shifts in order to just have a "break"!

What we learned was that because we are physicians used to dealing with busy emergency departments and under stress that we can contribute in other non-medical ways. This is due to the fact that the same interpersonal skills and organization that is needed in the ED transfers to many different areas of leadership. All four of us are excited about the opportunity to be involved with this team and happy that our department supports our efforts.

Simulation:

The Emergency Medicine simulation program incorporates weekly interdisciplinary sessions with Emergency physicians, Emergency nurses and respiratory therapists. The sessions are a unique continuing medical education opportunity that focuses on enhancing teamwork skills, procedural skills and knowledge base. Over 80 Emergency physicians and 300 nurses have participated in the last 3 years. The team is exposed to critical care scenarios and is encouraged to practice in real time the skills they will need to use in their daily practice of Emergency Medicine.

Emergency Ultrasound Program:

We are very excited about the strides our department has made over the past year to further our point of care ultrasound program! A few highlights include:

Administration

We are very excited to introduce Danny Peterson as the new ultrasound Co-Director. Danny brings a strong skill set having completed a focused year of point of care ultrasound at Western University, RDMS (Registered Diagnostic Medical Sonographer) certification and strong research interests! We are also pleased to have Dr. Kip Rodgers, FRCP EM resident completing a focused year of point of care ultrasound here in Calgary currently. He is a talented sonographer and we look forward to his leadership within the department!

US Education

Congratulations to our newly certified Independent Practitioners - IPs! Having so many skilled sonographers has allowed us to implement a Junior Resident Ultrasound Block. This rotation allows our residents to consolidate basic ultrasound skills with the goal of having each of our residents achieve IP status by the end of their first year.

We ran a very successful EDE I course this past summer (18 attendees comprising EM residents, Pediatric EM fellows and one faculty) and look forward to the EDE II course next month. To supplement these formal courses we have developed “advanced training modules.” These open access tutorials allow staff and residents to push their sonography skills to the next level. The pneumothorax module is now available for download (<https://www.dropbox.com/sh/j10c9b7bc716c11/a-HoWRNohQ>) and the LV function module can be viewed at (<http://westernsono.ca/tutorials-3/lv-function-tutorial/>). In the spring we hope to release the gallbladder, IVC, peripheral nerve block, MSK, and peripheral vascular access modules.

US Research

At present we are working on a number of research projects. Data collection is complete on the ultrasound fracture study, and there is an LV Function Paper nearing completion with Calgary as a contributing site. We are also preparing an ethics submission for a study looking at nurse-performed ultrasound guided peripheral access.

Future directions

We are actively working towards equipment upgrades, including acquiring new machines and docking stations to improve battery life and machine access. Our needs assessment survey indicated this was a priority for the group.

Finally, we have been working with the departments of Intensive Care and Trauma Surgery to acquire software and server space to facilitate an ultrasound QA process. This will have significant educational, safety, and efficiency advantages.

It has been an exciting year, and we look forward to the improving the ultrasound experience in Calgary.

Clinical Pharmacology and Toxicology:

2013 was a successful year for the Poison and Drug Information Service (PADIS) and for Clinical Pharmacology and Toxicology in Calgary. We welcomed 30 residents from Emergency Medicine, Internal Medicine, and Critical Care Medicine for our popular Medical Toxicology rotation. This rotation involves a combination of bedside medical toxicology consultations in Calgary hospitals and small-group teaching sessions on management of common poisonings. In addition, 2013 marked the launch of our new outpatient Medical Toxicology Clinic at the Rockyview Hospital. This monthly clinic was developed to provide evaluation, diagnosis, and management of adult patients in Alberta with toxic exposures, adverse drug events, follow care after hospitalization for poisonings, and interpretation of toxicology tests performed in the community. Finally, 2013, saw Drs Ryan Chuang, Fiona Garlich and Mark Yarema (PADIS toxicologists and emergency physicians) have 4 abstracts accepted for poster presentations at the annual North American Congress of Clinical Toxicology in Atlanta, GA.

A recent Health Canada-commissioned assessment entitled "Human Resource and Educational Inventories to Support the Life Cycle Approach to the Regulation of Therapeutic Products" found that Canada is lacking in individuals with scientific training in regulatory science, including basic and population science, as well as clinical pharmacology and toxicology. To meet both local and national needs, an interest group comprised of members of the Departments of Emergency Medicine, Medicine, Pathology and Laboratory Medicine, Pediatrics, and Physiology and Pharmacology has begun work on the development of a Royal College residency program in Clinical Pharmacology and Toxicology at the University of Calgary, with the goal of having such a residency in the next five years. This would be the fourth such program in Canada, and first in the Western provinces.

RDEM Quality Assurance:

The Quality Assurance Committee reviews patient safety events that have occurred in the any of the 4 adult EDs with a view to identifying system level contributing factors and making recommendations when applicable to address system failure.

2013 was a very active year for the QAC with a record number of safety events to review (this is good!) and a record number of actionable and measurable recommendations made. All recommendation are tracked by an external group to ensure that they are being implemented in a timely manner.

2013 also saw the implementation of a novel pilot project termed Sharing Lessons Learned. This pilot project is placing recent Quality Assurance Reviews online on the RDEM website <https://my.calgaryhealthregion.ca/http://insite.albertahealthservices.ca/9150.asp>

There are also paper copies in binders in the ED Physician and Nursing Staff rooms. One goal of the pilot project is to share with front line staff the important changes that are made to improve patient safety based on front line staff identifying safety events in the department and reporting these to the RLS system.

<https://my.calgaryhealthregion.ca/http://iceberg.crha-health.ab.ca/datix/Managers/index.php>

Fostering an open and trusting culture regarding the identification and reporting of patient safety events is an important pillar in patient safety.

Please consider contributing to the QAC as a physician reviewer. There are CME events to train physicians and other health care workers in this area.

<http://www.patientsafetymanagement.ca/>

Calgary Emergency Department Multidisciplinary Pain Management Working Group:

The Calgary Zone Pain Management in the Emergency Department (ED) Working Group was formed in September 2013 in response to a recommendation from a safety review.

Membership consists of representatives from Foothills Medical Centre, Rockyview General Hospital, South Health Campus, Sheldon Chumir Centre, and Peter Lougheed Centre. Well represented are ED physicians, ED pharmacists, and ED nurse clinicians and educators. As a working group, the members have participated in the project outside of attending meetings. The group meets once monthly, currently the last Wednesday of each month, with each site acting as a host site on a rotational basis.

The group objectives include examining what is being done well and how and what can be done better. This has generated some new ideas and initiatives to manage pain in the ED and also led to fostering an environment for credible research in the ED.

Accomplishments to date include critical evaluation and change of opiate dosing and opiate analgesic order sets for the ED, alternative analgesic use, including ketamine and NSAID's based on best possible evidence, and methadone prescribing in the ED. The committee is working with a provincial initiative examining the use and dispensing of acetaminophen/oxycodone (Percocet equivalent) and acetaminophen/caffeine/codeine (Tylenol #3 equivalent) "to-go" packs. The group supports the use of the triplicate prescription program in the ED and is examining solutions to enable prescribers to efficiently access this system. The group is also looking at the possibility of a pilot project of patient controlled analgesia in the ED. The group has also enjoyed the benefits of team building and networking, and is looking forward to achieving even more in 2014.

The working group is also the setting for a Knowledge Translation project funded through Alberta Innovates Health Solutions.

ACADEMICS / SERVICE / HONORS

University of Calgary CCFP-EM Program:

The U of C CCFP-EM continues to be a top program in the country as identified by prospective and incoming residents. In 2013, in recognition of increasing demand the program added 2 spots for a total of 8 training spots. We reviewed over 110 applicants for these spots in the fall of 2013 and successfully filled all our spots in the last CaRMS match.

New to this academic year was the extension of our academic half-day into a full-day. We have been able to add academic programs such as EKG rounds, Tintanelli review sessions, and monthly HPS (Human Patient Simulation) case rounds. This is done, in concert with the royal college emergency medicine residency program. We are very fortunate to have a large group of very dedicated teachers and educators. Finally, in 2013 our training sites expanded to include the new state of the art South Health Campus (SHC) which offers a diversity of adult and pediatric patients.

Off-Service & Elective Medical Education in the Department of Emergency Medicine:

Rotations in the Calgary Zone adult emergency departments continue to be highly sought after by University of Calgary residents and their training programs. The Department of Emergency Medicine hosted 97 mandatory off-service learners during the 2012-2013 academic year, representing approximately 10,000 hours of direct 1:1 learner supervision by our teaching faculty. The majority of these resident physicians were from the family medicine residency training program (52 learners), while the remainder came from internal medicine (20 learners), orthopedic surgery (6 learners), general surgery (6 learners), neurology (4 learners), pediatric emergency medicine (3 learners), dermatology (3 learners), dental medicine (2 learners) and cardiac surgery (1 learner). Due to an expansion of the family medicine residency program, the number of off-service learners is expected to increase in the 2013-2014 academic year to 113 resident physicians, representing an additional 2,000 hours of direct clinical bedside teaching.

As the popularity of the specialty of emergency medicine continues to grow among Canadian medical students and family practice residents, the demand for medical student and resident electives in our Department also continues to rise. In the 2012-2013 academic year the Department of Emergency Medicine hosted 35 family medicine elective residents from the University of Calgary (13 residents), UBC (11 residents), U of A (5 residents), U of T (2 residents), McMaster (2 residents), U of S (1 resident) and UWO (1 resident). So far in the 2013-2014 academic year the department has received 46 resident elective requests and electives have been offered to 36 residents, or 78% of applicants. On the medical students side, in the 2012-2013 academic year the Department of Emergency Medicine hosted 52 elective students from the University of Calgary (22 students), U of A (15 students), Queen's (4 students), as well as 2 students from each of U of M, McMaster, U of T, and Dalhousie, and 1 student from each of UBC, U of S, and NOSM. At this point in the 2013-2014 academic year the department has received 180 medical student elective requests and electives have been offered to 126 clerks, or 70% of applicants. The 87 elective learners we hosted in 2012-2013 represent over 5,000 hours of direct 1:1 learner supervision by our teaching faculty.

Overall, both the mandatory and elective adult emergency medicine rotations are highly regarded by our learners, who appreciate the diversity of patients, high quality bedside teaching, and one-on-one direct staff supervision around the clock. In total our teaching faculty provided well over 15,000 hours of direct 1:1 learner supervision in the 2012-2013 academic year, and this figure does not include the hundreds of hours our faculty spent on the supervision of 34 pre-clerkship level students through the University of Calgary summer pre-clerkship elective program as well as the many U of C medical students who request informal shadowing of an emergency physician throughout the year.

U of C Emergency Medicine Clerkship:

The Emergency Medicine Clerkship course was again a rousing success. Students have shown overwhelming support for the program, and consistently rate the clerkship among the top of all clerkships offered in medical school.

Highlights include the breadth of patient care as well as the direct preceptor interaction of academic faculty with students. Students are involved in the investigation and treatment of acutely unwell, often critically ill patients. They also have the demonstration of procedural skills essential to competent physicians (i.e. suturing, casting, fracture reduction, EKG interpretation, etc...).

The number of students participating in the EM clerkship continues to grow. The graduating class of 2013 had 175 students, and the class of 2014 had 187 students. We are anticipating a class size of 185 students for the graduating class of 2015.

Royal College Emergency Medicine Program:

The 5 year Royal College accredited Emergency Residency training program continues to grow and benefit from the increasing popularity (top 5 nationally) of the specialty across the country. Under the leadership of Drs. Bryan Young and supported by Dr. Sarah McPherson and an administrative team made up of Stacey Dickinson, Judy Mackay and Tris Talasali the program is currently training a pool of 21 residents.

Highlights of the academic year include the joint retreat held in January in Kananaskis with the University of Alberta EM residents and the end of year awards BBQ where teaching awards and other accomplishments are recognized. The academic half-day for residents has expanded to a full day of educational offerings and weekly grand rounds have expanded to two hours. Residents in the program are avidly pursuing areas of special interest including ultrasound, research and international EM.

Global Emergency Medicine:

Emergency Department members have been involved in many global health projects in the past year.

Haiti

Multidisciplinary teams from Calgary including emergency physicians, residents, and nurses under the NGO of Broken Earth have become involved in working and teaching at Bernard Mevs Hospital at Port au Prince in Haiti. We introduced simulation teaching to the paediatric residency program in the fall of 2013, and have been invited to return in the fall of 2014 to become involved in their curriculum. We have also established links with University of Miami for research into trauma in Haiti.

Malawi

A multinational team involving Canada, United States, and the United Kingdom have begun work on introducing simulation as an educational tool to foster interprofessional care in paediatrics. Our initial needs assessment was presented in an award winning poster at the recent IMSH conference in San Francisco last week.

Laos

This is an ongoing project involving fostering and mentoring family medicine residents in Laos. Multiple disciplines involved including internal medicine, surgery, and now emergency medicine under the guidance of Gwen Hollar, surgeon at PLC. We have also had recent success in establishing local CME conference.

Tajikistan

Involvement in ongoing collaborations with the University of Calgary aimed at continuing to develop medical school curriculum with a Swiss counterpart.

Kazakhstan

World Bank project mediated through the Canadian Society for International Health and focusing on health care reform and capacity development.

Philippines

One of our emergency physicians joined a Red Cross team providing emergency care to survivors of the disaster in Indonesia.

Nepal

This year marked the beginning of an emergency medicine fellowship at Patan Hospital in Kathmandu. This is the first such training program in Nepal, and it relies heavily on international faculty spending one month periods in Kathmandu to provide training and education. Several of our faculty members have participated this year, with more planning to be involved going forward. Approximately 8-10 department members will support this initiative in its first 18 months. Within three years the program should be essentially self sufficient, with the local faculty providing ongoing training. This model will ideally be a framework for future projects.

Future goals:

We plan on developing a division of global health within the emergency department. This would facilitate the coordination of existing projects supported by our members and hopefully development of departmental projects, including incorporating resident involvement and research initiatives.

Challenges for the future:

We see two major challenges going forward. One is to establish funding for a division chief in global health. The other is to find programs, such as the one in Kathmandu, that are looking for help developing an emergency medicine training program or help in optimizing emergency care. We believe the model of helping to provide a sustainable local program is the most effective, and we will try to build on our experience on Nepal.

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Toxicology Abstracts:

Chuang R, Lee V, Busche K. Progressive Myelopathy Associated with Elevated Erythrocyte Selenium Levels.

Fitzpatrick K, **Yarema M**, Mink M, McVittie L, Dias V, Gaudet J. Cardiopulmonary arrest and death in a patient with iatrogenic amantadine toxicity.

Garlich F. Bradycardia and respiratory depression from suicidal overdose of veterinary products.

Nicol J, **Yarema M**, Pursell R, Buxton J, Jones G, Martz W, Wishart I, MacDonald J, Elliott C, Durigon M, Tzemis D, Persaud S. Para-methoxymethamphetamine (PMMA) fatalities in Alberta and British Columbia, Canada.

Research Funding:

Project: External validation of three emergency department rapid rule-out protocols for myocardial infarction using a high sensitivity troponin assay.

Principal Investigator: James Andruchow

Funding Source: Industry (Roche Diagnostics).

Type: Investigator-initiated unrestricted research grant.

Competitive: No

Award: \$83,710

Date: January 2014 - January 2015.

Project: Improving the Stewardship of Diagnostic Imaging Resources in Alberta Emergency Departments

Principal Investigator: Eddy Lang

Funding Source: Alberta Innovates Health Solutions (AIHS): Partnership for Research and Innovation in the Health System (PRIHS).

Type: Unrestricted research grant

Competitive: Yes

Amount: \$ 748375.29

Date: April 2014-March 2016

Grants:

2013/10 - 2015/9 - Dr. McRae and Dr. Eddy Lang

High-sensitivity troponin T: Associations with mortality and optimal assay utilization in emergency department patients – CIHR funded.

Project Description: Identifying patients with heart attacks (MI) in the emergency department is challenging. One of the most important diagnostic tests for an MI is a blood test for cardiac troponin, a protein released into the bloodstream during an MI. Higher levels of troponin in the bloodstream are associated with a higher risk of death in patients with MI. A new troponin test, known as high sensitivity troponin T (hs-TnT), has recently replaced older troponin tests in many Canadian hospitals. Hs-TnT is much more sensitive than previous tests: It can detect much smaller levels of troponin in the blood. This means that MIs may be diagnosed earlier, doctors will miss fewer MIs, and patients with chest pain or breathing problems can have the diagnosis of a MI excluded faster than before. The downside of this high sensitivity is that some patients with naturally high troponin levels may be misdiagnosed as having had an MI, and be subjected to risky additional tests without the prospect of benefit.

Research Supervision:

Simon Berthelot – Master's thesis - Community Health Sciences, University of Calgary.

Christopher Lipp - Master's Equivalent - University of Calgary **Development of an Evidence Based Order Set for Acute Analgesia in the Emergency Department; a GRADE based approach.**

Funded National and Locally-Led Research Collaborations:

ViaValve: A Post-Market, Randomized Study Evaluating the Clinical Performance of the ViaValve Safety Intravenous Catheter

Sponsor: Smiths Medical

CETI: Completion of the Derivation of a Clinical Decision Rule to Predict Mobility Decline among Independent Seniors with Minor Injuries in the Emergency Department (Phase IB)

Sponsor: Centre de recherche du CHU de Québec

CARE: A Multicenter Prospective Cohort Study of Adverse Events Among Patients Discharged with Sentinel Cardiovascular Emergency Department Diagnoses

Sponsor: Ottawa Hospital Research Institute

Syncope: Clinical Decision Rule to Predict Serious Outcomes in Adult ED Syncope Patients

Sponsor: Ottawa Hospital Research Institute

Rad2: Study to Validate Canadian Heart Failure and COPD Risk Scales in the ED

Sponsor: Ottawa Hospital Research Institute

Wrist Fracture: Emergency Ultrasound Assisted Colles Fracture Reduction

Sponsor: University of Calgary

Elbow Fracture: Randomized, Double Blind, Placebo Controlled Trial of Ketotifen in Patients with Elbow Fractures or Dislocations

Sponsor: CIHR

PI: Dr. Kevin Hidebrand, University of Calgary

Asthma: Emergency Department Directed Interventions to improve Outcomes After Asthma Exacerbations

Sponsor: CIHR

PI: Dr. Brian Rowe, University of Alberta Department of Emergency Medicine

MRSA: A National Emergency Department base Infectious Disease Surveillance Study: An EMERGENT Working Group Study

Sponsor: North York General Hospital

Honors and Recognition:

Dr. Laurie-Ann Baker: Canadian Certified Physician Executive (CCPE) credential

Dr. Ian Wishart: Canadian Association of Medical Education Certificate of Merit

Dr. Eddy Lang: Hellbender Medical Teaching Award

Advocacy:

Dr. Joe Vipond, as a member of the Canadian Association of Physicians for the Environment, has been actively advocating for the phase out of coal-fired power generation in Alberta. This began as participating as an advisor on the report A Costly Diagnosis: Subsidizing Coal Power with Albertan's Health, and has continued as part of a group committed to pursuing the goal of eliminating coal over the next 10 years. He hosted a political panel discussion in January 2014, involving all four Alberta political parties, which garnered substantial media interest. This has evolved into multiple media appearances on the issue, including CBC's the 180, CTV2's Primetime Alberta, and other print and radio interviews.

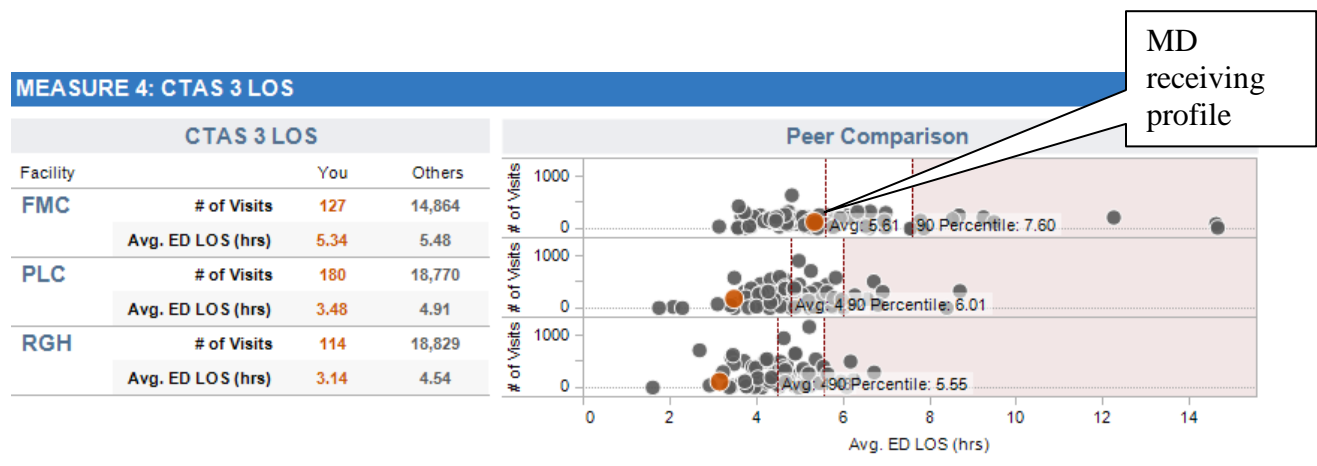
Departmental Challenges:

While steady and impressive gains have been made on the operational and academic fronts the Department faces a number of challenges and these include:

1. Size – Sense of team, belonging and integration are lacking at times
2. Interdisciplinary learning – Similarly improved collaboration between physicians and nurses is needed in the zone.
3. Variation in practice – Mechanisms to ensure that variations in care are measured reliably and are provided as feedback to providers
4. Cost containment – Victims of the success of operational efficiency the increased demand for care will strain budget and threaten the fee for service envelope
5. Extra-clinical engagement – Absence of an ARP and a fee for service environment means that some department members contribute minimally outside of patient care commitments.

Strategic Plan to Meet Challenges

1. Developing an awards night and more interdisciplinary learning to foster teamwork and collaboration
2. Development of physician feedback profiles that offer blinded peer review of clinical performance metrics
3. Creation of a 24 hours of service reporting program for extra-clinical activities
4. Active engagement with the Emergency Strategic Clinical Network and Gastroenterology to focus on admission avoidance.
5. Regular town hall meetings for MDs to enhance communication.



Acknowledgements:

This report was made possible through the contributions of the following individuals to whom I am very grateful

**Madhavi Talasali
Amy Graham
Dongmei Wang
Tiffany Junghans
Scott Banks
Judy Mackay
Andrew McRae
Neil Collins
Cathy Dorrington
Colin DelCastilho
Laurie-Ann Baker
Mary Baines
Terry Smith
Gordon McNeil
Bryan Young
Dona Kelly
Pam Holberton
Mark Bromley
Tom Rich
Bob Ford
Don Bethune
Todd Peterson
Margriet Greidanus
Mark Yarema
James Andruchow**