CRITICAL CARE RESPONSE TEAM LEADERSHIP MASTERCLASS

Wednesday, October 29th, 2014
Sheraton Centre – Toronto, ON
8.30 am – 4.30 pm
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8.00-8.30  Light Breakfast

8.25-8.30  Welcome and introduction
Dr. Andrew C Steel  
Course Director

SESSION 1  POLITICS, PHILOSOPHY, AND ECONOMICS
Moderators: Niall D Ferguson & Brian P. Kavanagh

08.30-8.50  Engaging clinical leaders and stakeholders in patient safety – the system perspective
Robert S Bell, MD,
Deputy Minister for Health and Long Term Care, Ontario

08.50-9.10  A strategic approach to region-wide CCRT implementation
Bernard Lawless, MD MHSc
Provincial Lead, Critical Care and Trauma, Critical Care Services Ontario

09.10-9.25  The clinical and economic case for early intervention in critical illness
Derek Angus, MD MPH
Professor and Chair, Critical Care Medicine, University of Pittsburgh; Associate Editor, Journal
of the American Medical Association

09.25-9.40  Creating and motivating a local team for change
Thomas E Stewart, MD
Chief of Staff and Executive VP-Medical, Niagara Health System, Ontario

9.40-10.00  Panel discussion: CCRT – juggling the medical milieu

10.00-10.30  Morning coffee

SESSION 2  STRATEGIC MANAGEMENT
Moderators: Stephen Lapinsky & Kayode Adeniji

10.30-10.45  Root cause analysis – a fundamental of patient safety
Stuart F Reynolds, MD
Director of Critical Care, Spartanburg Regional Medical Centre

10.45-11.00  Does improving quality save money?
Antoine Pronovost, MD MBA
Director, Trauma-Neuro ICU, St. Michael's Hospital, Ontario

11.00-12.00  First break out session for small groups
Facilitated discussion and analysis of a “management consultant style” case of a failing
institution

12.00-13.00  Networking lunch
SESSION 3  OPERATIONS MANAGEMENT
Moderators: Stuart Reynolds & Philip Ma

13.00-13.20  Diffusion of responsibility – a caveat of success
Kayode Adenijil, MBBS
Medical Director, CCRT, Queen Alexandra Hospital, Portsmouth

13.20-13.40  Critically Connected Response Teams
Stephen Lapinsky, MD
Medical Director, MSICU, Mount Sinai Hospital, Ontario

13.40-14.30  Second break out session for small groups
Facilitated discussion and analysis

14.30-15.00  Afternoon tea

SESSION 4  EXPERT ANALYSIS
Moderator: Andrew C Steel

15.00-16.30  Return to larger group for the experts to discuss the management case.
Panelists: Kayode Adenijil, Derek Angus, Stephen Lapinsky,
Antoine Pronovost, Stuart Reynolds, Philip Ma

16.30  Closing remarks
Robert S Bell, MD
Deputy Minister for Health and Long Term Care, Ontario

Bernard Lawless, MD MHSc
Provincial Lead, Critical Care and Trauma, Critical Care Services Ontario

Derek Angus, MD MPH
Professor and Chair, Critical Care Medicine, University of Pittsburgh; Associate Editor, Journal of the American Medical Association

Thomas E Stewart, MD
Chief of Staff and Executive VP-Medical, Niagara Health System, Ontario

Niall D Ferguson, MD MPH
Clinical Director, Critical Care, University Health Network and Mount Sinai Hospitals, Ontario

Brian P Kavanagh, MB
Professor and Chair, Department of Anesthesia, University of Toronto

Stuart F Reynolds, MD
Director, Critical Care, Spartanburg Regional Medical Centre

Antoine Pronovost, MD MBA
Director, Trauma-Neuro ICU, St. Michael's Hospital, Ontario

Kayode Adeniji, MBBS
Director, Critical Care Response Team, Queen Alexandra Hospital, University of Portsmouth

Philip Ma, BSc. RRT
Co-Lead, CCRT, Toronto General Hospital, Ontario

Stephen Lapinsky, MD
Medical Director, MSICU, Mount Sinai Hospital, Ontario

Andrew C Steel, MBBS
Medical Director, CCRT, Toronto General Hospital, Ontario
In addition to an exciting series of lectures and round-table debates delivered by our world-renowned Faculty, there will be two sessions for break-out, small group, facilitated discussion. During these sessions delegates will become part of a management consultancy team who have been engaged to trouble-shoot and advise the board of a fictitious, failing hospital.

The management case was co-authored by Drs. Andrew Steel, Stephen Lapinsky, Antoine Pronovost, and Stuart Reynolds. It will test delegates analytic skills and their understanding of patient safety and risk management. Each “team” will be mentored by faculty members who will lead delegates through background information, budgets and finances, patient outcomes data, and the stakeholder politics that are vital for solving the issues of the institution.

The final session of the day will consist of the expert panel convening to review the case and discuss in detail how they would tackle the challenges posed to delegates. This session will afford delegates the opportunity to engage in open debate and share their own experience with other leaders in Rapid Response Systems and Patient Safety.
Trudeauville is a major Canadian city with a population of 1.5 million located in the southern part of Ontario, and approximately 85km north of Toronto. In summer the population of the city and surrounding suburbs rises to around 3 million with tourists but in the winter, it falls back to 2 million. It also serves a population of around 1 million from surrounding provincial hospitals and towns (5 provincial hospitals with around 200-300 beds within 40km). It nestles at the bottom of the Chretien mountains which are popular with skiers, hikers, mountaineers and paragliders.

Three principal highways intersect the city and there are also a major rail terminal and Ontario’s second largest regional airport. Every year there are around 300 major trauma cases from the mountain range and road system. In 1989 there was a major rail accident which resulted in 50 major trauma cases and 85 minor injuries.

Trudeauville currently has three major hospitals located within the city limits:

- **The Royal Ontario Hospital** (960 beds)
- **West Trudeauville Hospital** (780 beds)
- **Southfork Infirmary** (446 beds).

As part of a hasty, pre-election initiative to save money, raise quality, and improve efficiency, the Ministry of Health and Long-term Care (MOHLTC) has decided that hospitals must rationalize their services. The current national financial crisis with a public acceptance of the need to save money has proved a popular vehicle for managing to make changes to public services without vocal opposition from voters. Thus the opportunity to overhaul systems is upon the Ministry of Health. Services that are under particular scrutiny are: Trauma Surgery, Labor and Delivery, Vascular Surgery, and the Hyperbaric Oxygen Therapy unit located at The Royal Ontario Hospital. The Hyperbaric unit has long been regarded as a medical white elephant but politically difficult to axe because of the strength of the Ontario fireman’s union (OFFA).
THE SOUTHFORK INFIRMARY
The Infirmary was originally built in 1948 but has been extensively refurbished and upgraded since. Now the only parts of the original campus that exist are the medical block and the administration wing which have largely been kept because of their historical significance (and paucity of funding).

It is the smallest of the three hospitals in the city with 446 beds. It serves a very loyal local community providing general medical and general surgical care, child health, and emergency services. It has the following specialty services on site: Haematology-Oncology, Interventional Cardiology, Cardiac Surgery, Gastroenterology, Hepatobiliary Surgery, and Head and Neck Surgery. The Critical Care Department is large for the hospital with a 22-bed medical-surgical intensive care unit (MSICU), and a 16-bed combined coronary care and cardiac surgical intensive care unit (CICU). In addition to the 38 ICU beds there are two 8-bed high dependency units for adult medicine (MHDU) and surgery (SHDU), and 6 paediatric high-dependency beds (PHDU) - all of these are the responsibility of the Critical Care Department.

In the past fiscal year 2013-14 there were more than 16,000 inpatient separations and more than 8,000 surgeries, including 800 open-heart, performed. This represents an overall increase in activity of 3.5% on the previous year and is largely due to the significant increase in Cardiac Catheter procedures and Cardiology admissions.

Health Canada statistics reported that the hospital mortality (34 per 1,000 admissions) was somewhat higher than expected and expressed as a Standardized Mortality Rate (SMR) was 115. This has been investigated by the Board and the current CEO. Their recently published annual report did not express concern at this given the increased Cardiology activity and “the expected deaths that come with acute illnesses such as: myocardial infarction, dysrrhythmias, and heart failure”.

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Leadership Masterclass

CRITICAL CARE RESPONSE TEAM

The CCRT at Southfork Infirmary provides 24hr, 7 day support to inpatients from all programs, including the Emergency Room, Medical Day Unit, and Medical Imaging Departments. It is not a busy service by comparison with similar institutions, with an average activity rate of 450 new consults per annum, or 28 per 1,000 inpatient admissions. Its high-turnover MSICU and CICU provide much of its workload in the form of discharge follow-up. Together with new activations there are approximately 4200 inpatient visits per annum.

The 22 member team operates on a "ramp-up" model, with a Critical Care nurse accepting calls via the pager. After assessing the patient he or she will then call for back-up from the Attending physician (or resident) and the Respiratory Therapist covering the ICU that day.

The calling criteria for the team are as below:

Given the patient population at the Infirmary it is not surprising that the most frequent reasons for activating the team are as follows:

I. Dyspnoea
II. Hypotension
III. Desaturation
IV. Tachycardia
V. Worried

In addition to responding to individual patients the team has the capacity to extend its cover using a monitoring system that will automatically page them if calling criteria are met. The system is used for high-risk surgical patients from ENT that do not have access to the Surgical HDU and for certain medical patients that remain on the wards following activation. The team has two units currently and both are almost always in use at any given time.

Southfork Infirmary
Critical Care Response Team

Airway
- Secretions
- Stridor

Breathing
- Resp rate <10 or >25

Circulation
- Sys. BP <90mmHg
- HR <60/min or >120/min

Neurological
- GCS <10/15
- Seizures

Urine output
- Urine output <0.5ml/kg/hr

Worried

All other reasons for concern
LABOR AND DELIVERY
As part of the drive for efficiency and improving patient care the MOHLTC has amalgamated three labor and delivery suites into one for the downtown core. A new stand alone unit has been constructed on the former site of the children's playground located next door to the Southfork Infirmary.

The new unit, the Queen Mary Maternity Hospital has a 20-bed delivery suite and two 32-bed inpatient wards for antenatal and postnatal care respectively. There were plans for a 6-bed HDU to be located within the delivery suite. The hard-wiring, gas supply, and plumbing is all in place but the funding stream has not yet been identified. The hospital has independent medical imaging services but will share cardiology, pathology, and transfusion with the Infirmary.

The combination of the three units is expected to result in the Queen Mary managing more than 7,000 deliveries per year many of which will be “high-risk” mothers because of the grown-up congenital heart disease population at the Royal Ontario Hospital, the IVF/multiple births population from the West Trudeauville Hospital, and the heart failure and pulmonary hypertension patients at the Infirmary.

VASCULAR SURGERY
Surgical procedures have been dropping over the past 18 months since one of the surgeons took early retirement. The vascular service at the Royal Ontario Hospital have appointed two new endovascular surgeons and are keen to become the regional referral unit for all major vascular surgery.

Moving the Infirmary vascular unit to amalgamate with that of the Royal Ontario makes both financial and strategic sense. Higher volumes should result in better patient care and outcomes however it will be unpopular with the patients and staff at the Infirmary. It will represent a significant risk to those patients needing urgent intervention from their expertise, e.g. cardiac patients requiring arterial repair following balloon pump removal.

RAPID RESPONSE SYSTEM
The Queen Mary Hospital with more than 7,000 deliveries per year will frequently need critical care support from the Infirmary. The proposed high dependency unit will have 24/7 cover from the Obstetric physicians and the Obstetric anesthesiology team, however the funding stream is not yet identified and there is no level 3, ICU capability. In addition to this there will not be the manpower, amongst other resources, to support patients at risk on the wards. With the incidence of complex grown-up congenital heart patients, pre-eclampsia, and postpartum hemorrhage; this is a significant risk.
It makes strategic sense for the Critical Care Response Team at the Infirmary to extend its cover for the Queen Mary unit. However this part of the proposal will pose some logistical difficulties - which need to be formally considered. A team of consultants is engaged by the Director of the team to advise regarding this.

**CLINICAL GOVERNANCE**

The Ministry have set aside some funding to support the CCRT in order to conduct data collection for a mandatory, Province-wide, database. The funding will allow the purchase of a central desktop computer and unto three tablets for the team leaders and responders to use to enter information. There will not be sufficient funding for salary support for an analyst. This will have to come from hospital's budgets.

The data are to be publicly reported on a quarterly basis and will form part of the Ministry’s “Safer Hospitals” campaign. The following data points will be mandated:

- patient demographics
- CCRT activation date and time
- calling criteria
- outcome

In addition to this the software will allow individual units to have site-specific data collected through the Provincial database. However these need to be outlined before the database goes live.
OVERVIEW
- Queen Mary Hospital is adjacent with easy access
- It is a high volume, tertiary referral, and high-risk OB unit
- There is considerable difference in the case-mix, patient acuity, staffing, and population turnover compared with that of the Southfork Hospital
- It is unfortunately underfunded or at least the distribution of funds could be reviewed

STRATEGIC QUESTIONS
Issues to be established in setting this up:
- CALLING CRITERIA
  - Incidence of complications and likely CCRT calls – does this data exist?
    - Adjusted for OB diseases and physiology
    - q12h vital sign problematic: introduce Early Warning Scores/automated monitoring?
- TRAINING
  - OB-specific conditions
  - Geography and processes in new hospital
  - EMR
- DATA COLLECTION, REVIEW, ANALYSIS
  - Cost-effectiveness of CCRT?

OPERATIONS MANAGEMENT
- RESPONSIBILITY
  - CCRT v. OB hospital staff?
- PRIVACY
  - Access to EMR
- COMMUNICATION
  - phones, pagers, contact numbers
- DATA
  - Who collects, analyses, reviews? CCRT v OB?
  - Staffing time, equipment, drug cost recovery
  - Risk management and root cause analysis
  - management case data
The following data are included for discussion.

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