Do Critical Care Outreach Teams Improve Patient Outcomes?

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OUR ROLE WITHIN THE HOSPITAL:

- Respond to any patient with an increased EWS
- Respond as part of the cardiac arrest team
- Manage patients requiring NIV
• Closely monitor patients awaiting admission to critical care
• Support and facilitate the weaning of tracheostomies
• Or if a staff member is concerned about a patient
• Follow up all patients discharged from critical care
• Provide education and support to ward staff
Purpose of the study- to examine the impact of the CCOT on:

- Hospital Mortality Rates
- Cardiac Arrest Rates
- ICU/HDU Admission Rates
- ICU/HDU Readmission Rates
- Outcome of all patients reviewed by the CCOT
- Reasons why CCO review patients
Methodology

- Single site Quant. Retrospective documentary review
- Six month period pre & post CCO
- 1 June – 30 November 2016 (Pre CCO)
- 1 June – 30 November 2017 (Post CCO)
Inclusion/Exclusion

Inclusion:
- All Adult patients (> 18 years)

Exclusion:
- Paediatric Patients
University Teaching Hospital
Bed Capacity 708 patients
- 11 Active General ICU Beds
+ 6 HDU Beds. 4 Cardio Thoracic ICU Beds
- Critical Care Outreach Team (CCOT) established in Dec 2016
Team comprises of 1 ANP & 3 Senior ICU Nurses

Coverage is provided 7 days per week & 24 hours at the weekend

No published Irish Studies surrounding CCO

Any member of the MDT can refer if criteria met
• Early Warning Score ≥3
• Mean BP ≤ 60mmHg
• Fluid bolus for BP for ≥2 hours
• GCS ≤ 14 or equivalent to patient baseline
• Heart rate > 100beats per minute
• Urine output ≤0.5ml/kg/hr for last 4 hours
• Respiratory rate ≥20 breaths per minute
• SpO2 ≤94%
• Oxygen requirements ≥ 50%
• LA ≥2.0
• Ethics approved pre study
• The Health Informatics manager extracted data relating to ICU/HDU admissions & readmissions
• Data relating to Hospital mortality & Patient Outcome obtained from hospital database
• Data relating to cardiac arrests obtained from Resuscitation Officer
Data Analysis

- SPSS – Wilcoxon Test
- A p-value of <0.05 was used
- A p-value <0.05 indicates a significant difference
- A p-value >0.05 indicates no significant difference.
Results

- **CCO Impact on ICU/HDU Admission Rates**
  - 391 patients admitted to ICU pre CCO
  - 396 patients admitted to ICU post CCO
  - No Significant difference (p=0.0531)
• 290 Patients admitted to HDU pre CCO
• 311 Patients admitted to HDU post CCO
• No significant difference (p=0.094)
Readmission Rates to ICU/HDU

Readmission Rates <72hrs

• 4 patients readmitted to ICU pre CCO
• 5 patients readmitted to ICU post CCO \((p = 0.500)\)
• 0 patients readmitted to HDU pre CCO
• 4 patients readmitted post CCO \((p = 0.125)\)
Patient Outcomes

- 1463 episodes of care – A total of 693 patients
Reason for CCO review

- Post ICU/HDU discharge
- Resp assessment & management
- Trachy Management
- CVC mgt
- Sepsis
- Reduced GCS
- Cardiac Arrest
- CVS instability
- Abdo issues
- Electrolyte disturbance
- High EWS
- Renal Issues including ↓ U.O
- Line insertion
- Pain
- Advice
- Percentages

0 5 10 15 20 25 30 35

Percentages
Impact On Mortality Rates

- Pre CCO 15,766 hosp. admissions (excluding electives)
  - 288 patient deaths
- Post CCO 15,960 hosp. admissions (excluding electives)
  - 256 patient deaths
- P = 0.047.
- Reduction in hosp mortality of 11.1% in 6 months
Impact on Cardio- Respiratory Arrests

- Pre CCO 71 Cardiac Arrest Calls
  - 9 of these were actual cardiac arrest calls
  - 62 were Calls For Help
- Post CCO 50 Cardiac Arrest Calls
  - 9 of these were actual cardiac arrest calls
  - 41 were Calls for Help
- Cardiac Arrest Calls significantly reduced 29.5% (p =0.047)
- Actual Cardiac Arrests unchanged (p=0.266)
Summary

- No significant differences in ICU/HDU admission rates
- No significant difference in readmission rates to ICU/HDU
- Significant difference in cardiac arrest calls - Cardiac arrest calls fell by 29.5% post implementation of CCO (p<0.047).
- Hospital mortality rates fell by 11.1% (p <0.047) post implementation of CCO.
Strengths

- Included all medical and surgical patients
- Seasonal Fluctuations accounted for
- No other initiatives started in the hospital
Comparisons to Other studies

- Some studies showed an increase in ICU/HDU admission rates
- Multiple studies showed a reduction in readmission rates
- Similar results regarding Cardio-resp arrests & mortality rates