IMPACT OF RAPID RESPONSE TEAMS DURING THE CARDIAC ARREST CYCLE

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Objectives

• Describe the role of Rapid Response Team in the clinical setting at University of Kentucky Chandler Medical Center

• Relate the role of Rapid Response Teams to cardiac arrest care
Rapid Response Roles

- Clinical Roles
  - To prevent cardiac arrest outside of the ICU (OICU)
  - Assist in early recognition of patient decline
  - Resource to clinical staff

OICU Code Per 1000 Patient Days

Overview

- Early Recognition
- Initial Interventions
- Clinical Management
- Outcomes & Data
Early Recognition

• Track and trigger
  • 60 y/o female PMH COPD with 2LNC @home, 2 PPD smoker, DM, HTN, CAD, HLD, CHF, admitted to telemetry floor for COPD exacerbation and acute decompensated HF
  • SCM alert of 7 (HR 112, RR 31, SBP 92, temperature 99.8, BMI 38, age 60)

Early Recognition (cont)

• Track and Trigger
  • EMAR review reveals:
    • Baseline HR 90, RR 20, SBP 110’s, temperature 97.8
    • ABG: pH 7.4, PCO₂ 51, PaO₂ 68, HCO₃⁻ 35
    • BNP: 900, troponin negative, H/H 17/51%, K⁺ 3.5, WBC: 14
    • CXR: bilateral infiltrates
    • 12 lead EKG: SR with RBBB and occasional PVC’s
    • Receiving 40 mg furosemide PO daily, 12.5 mg carvedilol PO BID, 10 mg lisinopril PO daily
    • Per MD note, supposed to wear CPAP at night but refuses
Early Recognition (cont)

- Track and Trigger
  - Per primary RN, pt baseline oriented and anxious; currently increasingly lethargic and disoriented to time
  - Per primary RN, respirations are tachypneic and shallow with breath sounds diminished with fine crackles
  - Per primary RN, UOP diminished 20 ml/hr
  - RN has already notified primary service regarding current presentation; orders received for CXR, hemogram, and FSBS and will be by for rounds

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Early Recognition (cont)

- Track and Trigger
  - Upon RRT arrival to bedside, patient:
    - Lying in bed with HOB 30 degrees, skin pale, warm, and diaphoretic
    - EMV 2-6-4
    - Respirations shallow and labored at 35 with abdominal accessory muscle use
    - Breath sounds diffuse crackles with diminished bases
    - Weak, congested, nonproductive cough
    - Repeat VS: HR 120, BP 86/54, temperature 100.2, SpO2 86% on 2L/NC
    - Increased consolidation noted in RLL of recent CXR
    - Hemogram resulted with WBC 25
Early Recognition (cont)

• Track and Trigger
  • Place on 40% venturi mask
  • RRT obtains ABG via EPOC
    • pH 7.22, PCO2 83, PaO2 52, HCO3- 28, H/H 13/39%, K+ 2.8, lactate 2.2, glucose 250 mg/dL
  • Orders 12 lead EKG
    • Sinus Tachycardia with RBBB and multifocal PVC’s
  • RRT notifies primary service of decline and request MD to bedside
  • Primary service to bedside; aware of results, orders:
    • BiPap 50%, 15/8, RR 22; repeat ABG 1 hr
    • 40 mg IV furosemide
    • Empiric antibiotics
    • Progressive care unit orders; HOA notified

Early Recognition (cont)

• Track and Trigger
  • Outcomes:
    • Repeat ABG 1 hour post intervention: pH 7.38, PCO2 60, PaO2 83, HCO3- 31, lactate 1, glucose 175 mg/dL
    • EMV 4-6-5
    • Skin pink, warm, and dry
    • Breathing assisted with Bipap, Vt 450, RR 22 with breath sounds fine crackles with stronger, productive cough
    • Able to wean from Bipap while awake and with meals; continue to use with sleep
    • Educated pt on adherence to Bipap and pulmonary hygiene
Initial Interventions

• Role of RRT
  • Team leader until physician team leader present
    • Provide direction during code utilizing ACLS protocols
  • Ensure resuscitation roles fulfilled
    • Crowd/noise control
    • EPOC labs
    • Ensure etCO2 utilized
    • Administration of ACLS drugs in outside of ICU environments
  • Provide ICU level of care until disposition to ICU
Initial Interventions

• Role of RRT
  • Documentation
    • Ensure time of interventions and medications administered per ACLS protocol
    • Communicates these to the Team Leader (and team) via closed-loop communication
    • Interventions
    • Cardiac rhythms
    • Timekeeper
    • Document personnel
      • Obtain signatures of key personnel
      • Physical and electronic documentation of entire code events

• Debrief
  • What went well?
  • What could be improved upon?
  • What could have been prevented?
  • Emotional support to staff
**Initial Interventions**

- **Role of RRT**
  - Disposition
    - Provide ICU level of care until disposition to ICU
    - Transport to appropriate diagnostic areas and/or level of care upon ROSC

**Clinical Management of the Peri-Arrest Cycle**

- **Education**
  - Patient deterioration classes
  - Teach new resident’s on RRT’s role

- **Mock codes**
  - Scenarios in identified nursing areas not frequently involved in resuscitation and/or areas with identified needs
  - Emphasis placed on nursing staff’s role in resuscitation prior to code team arrival
Outcomes & Data

- Get with the Guidelines (GWTG)
  - Input raw code data into database for the American Heart Association
- UK Healthcare is benchmarked against comparable teaching institutes
  - Time to Epinephrine
  - Time to defibrillation for pVT and VF
- UK Healthcare maintains GWTG Gold Status

Monthly Patient Days
Out of ICU Codes per 1000 Patient Days

References