Rapid Response Systems: Quality Improvement Arm

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MET System is Complex

- Efferent Arm: Response system
- Afferent Arm: Triggering system
- Administrative Arm: Support system
- QI Arm:
  - The “glue”
  - Problem Identification
    - Patient level
    - Process level
  - Reflection
  - Continuous evolution

Why is QI so Important?

- Single therapeutic interventions are easy to evaluate cause and effect
- Process interventions are much more complicated to execute and evaluate
  - Numerous potential fail points
  - Outcomes related to how well you do “day to day”
  - Continuous illumination of system wide insufficiencies
- Improve the system
- Prevent more crisis events
- Prevent the need for RRS

Quality Improvement

Data Drives Change

Where to Begin: Creating a QI Process

Specific
- Event Review
- Individual Patient Level
- Save this Patient

Global
- Process Review
- System-wide Level
- Save Future Patients

Goal of QI

- Get rid of all the errors!
- Identify your boundary
  - Define calling criteria
    - Defines the population you want to follow
  - Define response process
    - What you want to do
    - How you want to do it
    - Who you need to do it to
Creating a QI Team

- Multidisciplinary
- Large oversight group
  - “Own it all” approach
  - “Spread the responsibility” approach

Creating a QI Team

- Meets regularly to review MET related issues
- Develops strategic plan to resolve issues
- Develops plans for the future of the program
- Identifies hospital wide issues that need governance
- Links to higher level administration
- Reviews monthly reports

QI Network

- Oversight team
- Area experts
- Local assessment of “issue”
- Define action steps
- Assist with implementation of recommendations
- Collect own data
- Change patient care thru improved processes

Global QI Process

- Human
- Equipment
- Data Management
- Environmental
- Leadership
- Communication

Data Collection and Review

- Minimize staff efforts
- Call log
  - Who, where, when
- Audit tool
  - Look for different types of error
  - Decide what events to audit
- Determine what can be prevented
- Start with decreasing errors that can cause death and disability
- Timely review (>24 hours)
- Feedback, feedback, feedback

What to Collect: Local and Aggregate

- Uniform reporting
- Consistent data elements
- Standardized definitions
- Individual hospital data allows effective and efficient review to improve individual programs
- Aggregate data allows for a rapidly expanding consistent data set to drive the science behind RRS
**Recommended Data Elements for Reporting of MET Data**


**Patient Demographics**

- Identifier
- Gender
- Age / Date of birth
- Date of admission
- Patient service category
- Patient location at time of event

**Activation Data**

- Date & time of team activation and completion
- Reason for team activation
- Transfer prior to event
  - Critical care area
  - Emergency Department
  - Operating Room / PACU
  - Another hospital
- Clinical status (vital signs) at time event called
- Clinical status for the 4-6 hours prior to the event

**Team Intervention Data**

- Sample forms for event data collection
  - NRCPR Website [www.nrcpr.com](http://www.nrcpr.com)
  - IHI website [www.ihi.org](http://www.ihi.org)
  - Hospitals share
- Medication and non-medication therapies
  - Assist in determining supply and training needs

**Patient Outcomes Measures**

- Patient status at end of call
  - Survival
  - Remained in same location
  - Transferred to ICU / telemetry
  - Transferred to intervention area
  - Patient status at discharge
  - Repeated RRS activations?

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**Choosing What to Data to Collect and How to Report It?**

<table>
<thead>
<tr>
<th>Important to determining clinical process and outcomes</th>
<th>Not really important to determining process and outcomes</th>
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<tbody>
<tr>
<td>? Difficult to collect</td>
<td>? Easy to collect</td>
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Hospital Outcome Measures (per annum)

- # Discharges
- #Response team activations
- # In-hospital cardiac arrests
- # Cardiac arrests not in an ICU, ED, or OR
- # In-hospital deaths
- # DNAR deaths
- # DNAR deaths not in an ICU, ED, or OR

Key Performance Indicators


- Unexpected cardiac arrests = total number cardiopulmonary arrests – arrests with a pre-existing DNAR order
- Unexpected deaths = total deaths – patients dying with a DNAR order in place
- Unplanned admissions to the ICU

Summary: QI Arm

- Multidisciplinary network
- Provides insight into causes of deterioration and error
- Rapid identification of potentially lethal system issues
- Glue that hold the RRS together