Rapid Response Systems (RRS)

Peter Morris, MD
Wake Forest School of Medicine
The Problem:
Unrecognized Deterioration of Patients on General Hospital Wards

• Question –
  – Could better examination of Vital Signs (VS) predict deterioration?

• Do these predictors (VS) coupled with activation of a “response team” improve outcomes?
Early Warning Scoring Systems

• >100 now in literature
• Many by expert opinion
• More recent “derived scores”
• Limitation –
  – “how often are vital signs obtained?”
Rapid Response Systems (RRS)

• Strong face validity
• Support of Hospital Administrators
• 2001-Institute of Medicine –
  – Crossing the Quality Chasm: A New Health System for the 21st Century
  – Failure to Rescue (FTR)
• 2007 – National Institute for Health & Clinical Excellence recommends
  – Physiologic track & trigger systems to monitor adult pt in acute hospital settings
• 2009-Joint Commission National Pt Safety Goal-implement RRS’s
Benefits of EWS/RRS

• RRS associates with reduction in non-ICU cardiopulmonary arrests but not lower overall hospital mortality (adults)
Limitations of Literature

• DNR patients not excluded from analyses
• None have used a randomization methodology or concurrent control group
• Few (2) have studied multiple centers simultaneously
• Few have attempted to control for other safety improvements and practice change over time
  – (nurse to pt ratio, increased density of hospitalists)
• No study has included a blinded outcome assessment
Harms?

- “de-skilling” of ward staff
- dependence on RRTs
- Diversion of ICU staff from high acuity ICU pts
- Communication errors by introduction of new team members urgently
Cost Analyses of RRTs

• 11 reports with quantitative methods evaluating effect of change
• Overall, implementation processes differ widely
• Local needs, local resources dominate the process (eg, cost of education 2° to variable investment)
RRS – Optimal Team Composition

• Unknown
A Plausible Role for RRTs
End of Life Care

• Many ward arrests occur in “terminally ill” pts
• Training, training, training
• Relief from distressing symptoms
• Communication - “what are patient’s goals”
• Avoid “there is nothing else we can do for you”

Integration of Palliative Care in the Context of Rapid Response.
A Report From the Improving Palliative Care in the ICU Advisory Board.
CHEST, 2015; 147: 560-569
What Are Better Ways?

• Multiple Modality Approaches (RRTs plus.....)
• Nurse Ratio in Ward
• Hospitalists
• Communication across levels of nursing unit acuity (ED to floor, ICU to Floor, OR to floor)
• Electronic Vital Sign Monitoring Systems – every patient, every hospital?