


Ensuring acutely ill patients get the right care from nurses

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Introduction

- Prevention of adverse outcomes for patients
 - Early recognition
 - Appropriate response
 - Effective expert support
- Whole hospital approach,
 - not just critical care,
 - not just peri-arrest or arrest situations

Preventing 'Failure to Rescue'

- Definition:
 - death from pneumonia, shock or cardiac arrest, upper gastrointestinal bleeding, sepsis, or deep venous thrombosis

Things patients shouldn't really die from unless there is a clear futility decision or advance directive



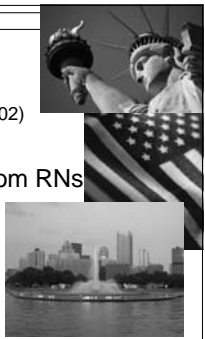
Background

Nursing in the UK

- 76% of the NHS nursing workforce is qualified
- 24% are Health care assistants (HCAs)
- There are no LPNs

Approx. 70% of the routine vital signs monitoring of patients is carried out by HCAs

Nursing and Midwifery council of the UK – statistical analysis of the register 2004-5



By comparison.....

- In the US (data from Needleman 2002)
- 68% of direct nursing care from RNs
- 11% from LPNs
- 21% from Nursing aides

Needleman et al 2002 NEJM; 346,1715-1722

Beneficial effect of qualified nursing


Needleman et al 2002
799 hospitals in 11 states

- Effect on Medical patients
 - A higher proportion and increased absolute number of hours of care/day by registered nurses
 - shorter length of stay (p=0.01 and p<0.001)
 - lower rates of urinary tract infections (p<0.001 and p=0.003)
 - Lower rates of upper gastrointestinal bleeding (p=0.03 and p=0.007).
 - A higher proportion of hours of care by registered nurses
 - lower rates of pneumonia (p=0.001), shock or cardiac arrest (p=0.007), lower rates of "failure to rescue," (p=0.05).
- Less effect on Surgical patients
 - A higher proportion of care provided by registered nurses
 - lower rates of urinary tract infections (P=0.04),
 - A greater number of hours of care per day by registered nurses
 - lower rates of "failure to rescue" (P=0.008).

Needleman et al 2002 NEJM; 346,1715-1722

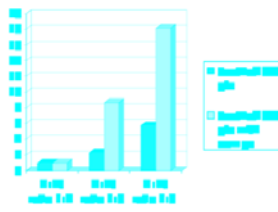
DNR Decisions

- Early decisions about the appropriateness of resuscitation
- Reduction in ICU admissions
- Reduction in prolongation of suffering and inappropriate intensive care



Beneficial effect of qualified nursing

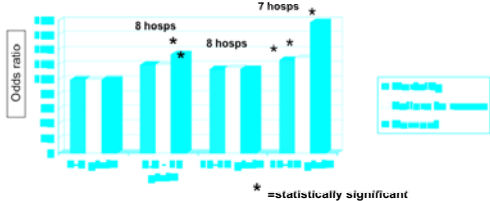
- Aiken et al (2002)
- 210 acute hospitals - Surgical patients (ortho, vasc, gen)
- 7% excess mortality / 1 extra patient / nurse
- 7% increase in failure to rescue
- N:Pt ratio 1:6 vs 1:4
- 2.3 additional deaths/1000 patients
- 8.7 additional deaths/1000 patients with complications
- N:Pt ratio 1:8 vs 1:6
- 2.6 additional deaths/1000 patients
- 9.5 additional deaths/1000 patients with complications
- N:Pt ratio 1:8 vs 1:4
- 5.8 additional deaths/1000 patients
- 18.2 additional deaths/1000 patients with complications



Job dissatisfaction 15% more likely with each additional patient

Beneficial effect of qualified nursing

- Rafferty et al (2006)
- 30 hospitals in England – surgical patient outcomes



* = statistically significant

Rafferty et al. International Journal of nursing studies, 2006, 44, 175-82

Qualified nurses will be in short supply in the next 15 years



NMC statistical analysis of the register 2004-5

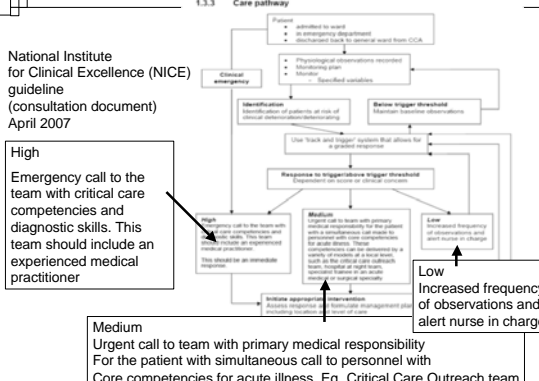
National institute for Clinical excellence guidelines

Principal recommendation 8

- Staff working with acutely ill patients should have the necessary competencies in monitoring, measurement, interpretation and prompt response to the acutely ill patient, appropriate to the level of care they are providing.
- Education and training should be offered to ensure staff can demonstrate they have these competencies.

1.3.3 Care pathway

National Institute for Clinical Excellence (NICE) guideline (consultation document) April 2007



High: Emergency call to the team with critical care competencies and diagnostic skills. This team should include an experienced medical practitioner

Medium: Urgent call to team with primary medical responsibility. For the patient with simultaneous call to personnel with Core competencies for acute illness. Eg. Critical Care Outreach team

Low: Increased frequency of observations and alert nurse in charge


Early Recognition and Response

- Simple observations identify "at risk" hospital patients
 - Respiratory rate
 - Heart rate
 - Systolic blood pressure
 - Level of consciousness

Cioffi (2000) - 4 patient characteristics =, "seriously worried about a patient."
 (1) feeling "not right,"
 (2) color,
 (3) agitation,
 (4) observations marginally changed or not changed at all.
Cioffi, Heart & Lung, 2000, 29: 262-268

- RESPONDING makes the difference

Monitoring is not enough



- Watkinson et al 2006
 402 patients – 201 monitored, 201 usual care
 Alarms set on monitor
- No sig. diff. for number of major events between groups
- No sig. diff. for cardiac arrests or mortality at 96h

Watkinson et al. Anaesthesia, 2006, 61, pages 1031–1039

Time taken to notify medical staff of physiological changes in pts prior to cardiac arrest

Variable	Time taken (SD) – mins.
Overall mean time	21.4 (32.9)
Blood pressure	28.4 (42.7)
Heart rate	31.0 (40.2)
ECG rhythm	22.3 (34.8)
Respiratory rate	27.5 (32.0)
Chest pain	7.3 (6.8)

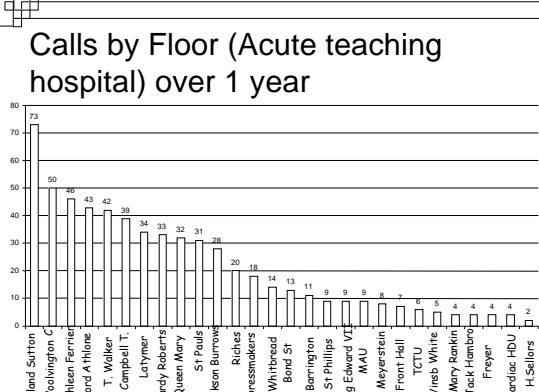
Time to notification	mins
Mean time in survivors	14.3
Mean time in nonsurvivors	25.7

Rich 1999 Clin Nurs Spec, 13,147-53

Recognition and Response

- Cioffi (2000)
 Nurses rely heavily on past experiences and knowledge to detect differences in the patient's condition.
 How much experience of acutely ill patients do ward nurses get?

Calls by Floor (Acute teaching hospital) over 1 year





Evaluating CCO contribution

- What is the role of Critical Care Outreach?
 - Action
 - Focus and vision
 - Orchestration
 - Expertise

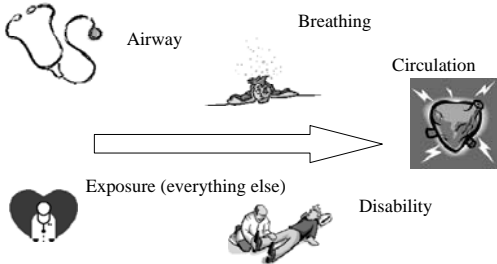
20 cases studied using responsiveness model and case study
Chell, Higgs and Scholes, 2006, Nursing in critical care, 11, 42-51

What do general nurses need to know to be effective in acute situations?

- What is normal
- Interpret abnormal changes
- Skills to respond
- Know when to get help




Skills-based education




Airway Breathing Circulation

Exposure (everything else) Disability

Observed Changes in Behaviour





Previously - nasal cannulae
(with flow turned up to 15 L !)



Non-rebreathe bag -
Able to deliver 85 - 90% O₂

In conclusion



What we need is

- Enough qualified nurses (1:6?)
- The right education for these nurses – scenario based/skills based
- Support from experts eg. Critical Care outreach