

DEBATE: NURSE-LED OR MEDICALLY-LED TEAMS

Ramp Up or Ramp Down?

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WHAT ARE WE HERE FOR?

- Improving Patient Outcome (Saving lives)

Prevention of Cardiac Arrest!



UK and US studies of outcome for in-hospital cardiac arrests (N=1368 pts, N= 14 720 pts)

Overall Survival is 17.6% (UK) and 17% (US)

Gwinnutt et al. (2000) Resuscitation;47:125-35
Peberdy et al (2003)Resuscitation; 58: 297-308

WHAT DO WE WANT RRS TO DO?

Afferent (evaluation and response triggering) component
Selection/diagnostic
Human and technical
Mechanism for triggering response

Nurse And a Doctor
with alarm limits

Efferent (crisis response) component
Responsible for (triggering response)

Nurse And a Doctor
• P
• E

Education **Nurse** And a Doctor

Nurses are the common strand that make RRS function

**WE JUST WANT
TO BE CALLED
FOR THE RIGHT
PATIENT, AT
THE RIGHT
TIME.....**



BUT DOCTORS ARE FROM MARS, NURSES ARE FROM VENUS!

Nurses used Social, non-medical language causing Doctors to seek further information which was interpreted as stalling or antagonistic by the nurses.....

(Andrews & Waterman, 2005 , *JAN*, 52, 473-81)

Nurses would wait to see if patient's condition worsened before calling

(Cioffi, 2000, *Heart&Lung*, 29, 262-268)

The Doctor/Nurse interface is a source of conflict

(Cutler , 2002 *Intensive and Critical Care Nursing*, 18, 280-291)

EARLY OR LATE CALL CRITERIA

Workload vs. Specificity

- ◉ Wouldn't we rather see more patients and reduce the risk of missing those with real need ?
- ◉ Bell et al (2006) - see 3 X as many patients to identify 2 X as many patients at risk.
- ◉ Nurse-led teams with experienced critical care staff can pick up and/or monitor

Bell, M. et al. (2006) Prevalence and sensitivity of MET-criteria in a Scandinavian University Hospital, *Resuscitation* **70**, 66—73

WHAT CAN NURSE-LED TEAMS DO?

- ◉ ABCDE assessment
- ◉ ABCDE response based on the above
- ◉ Early advice and preventive measures - challenge management
- ◉ Support of ward (floor) staff
- ◉ Liaison with critical care
- ◉ Pull in and coordinate primary medical team/crit care team/ others as necessary
- ◉ Transfer to critical care

OR if the patient stays on the ward.....

- ◉ Education of ward (floor) staff
- ◉ Follow up and preventive interventions

NUMBER OF MET CALLS/1000 ADMISSIONS - DOCTOR LED

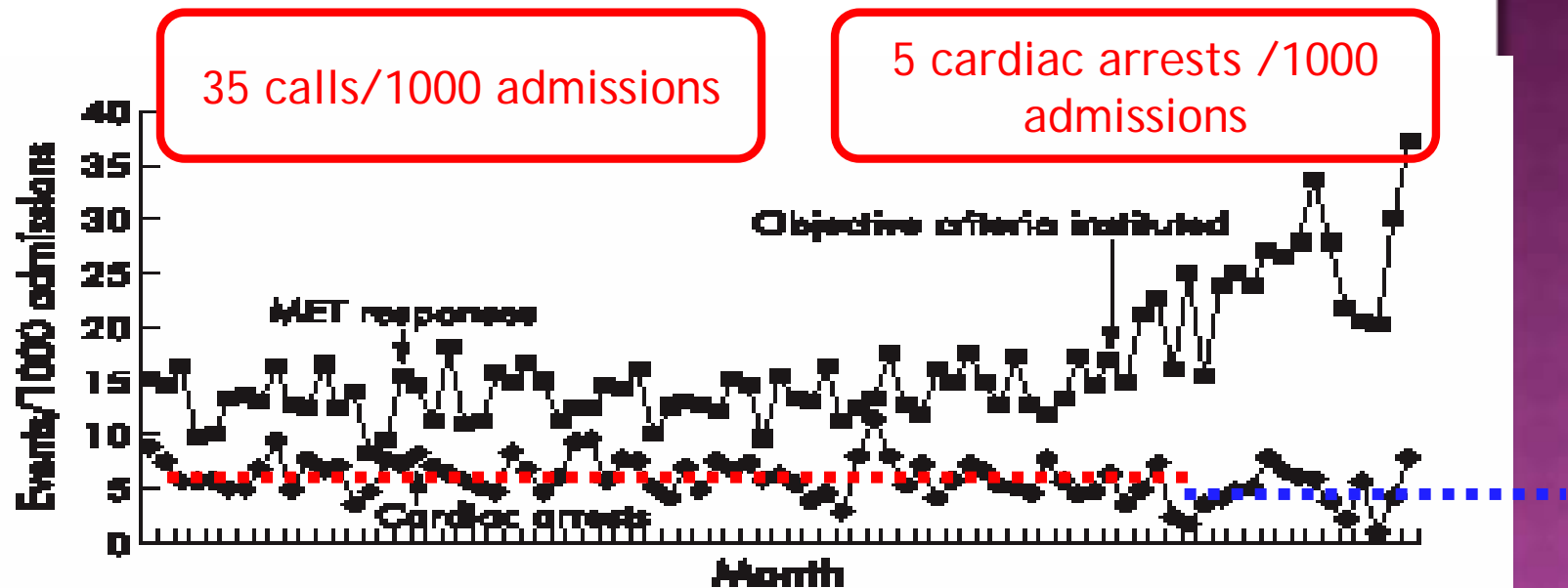
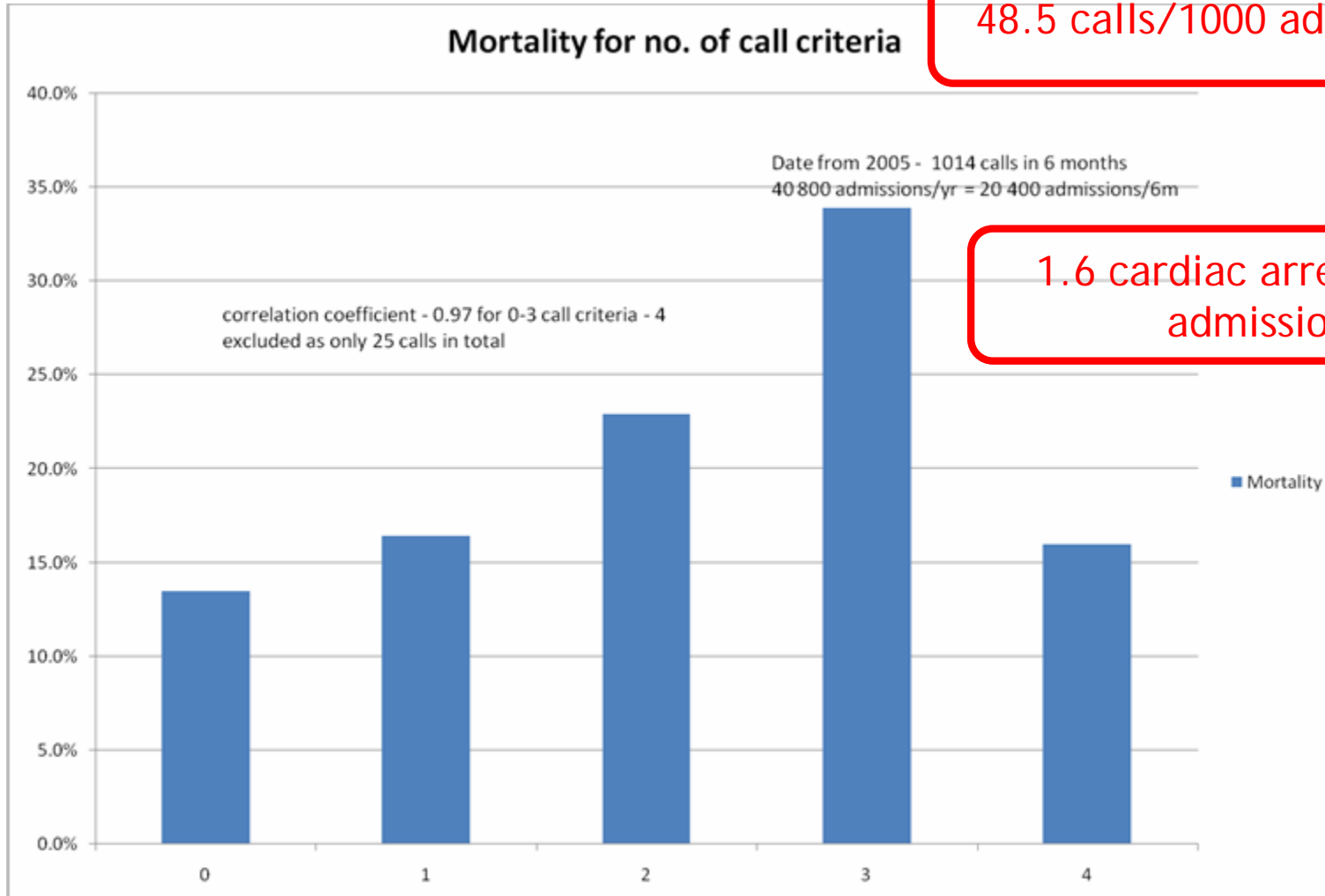


Figure 1 Number of medical emergency team (MET) responses and cardiopulmonary arrests per month before and after objective criteria for MET activation were instituted. Note the rise in emergency events and the decline in cardiac arrests after implementation of criteria.

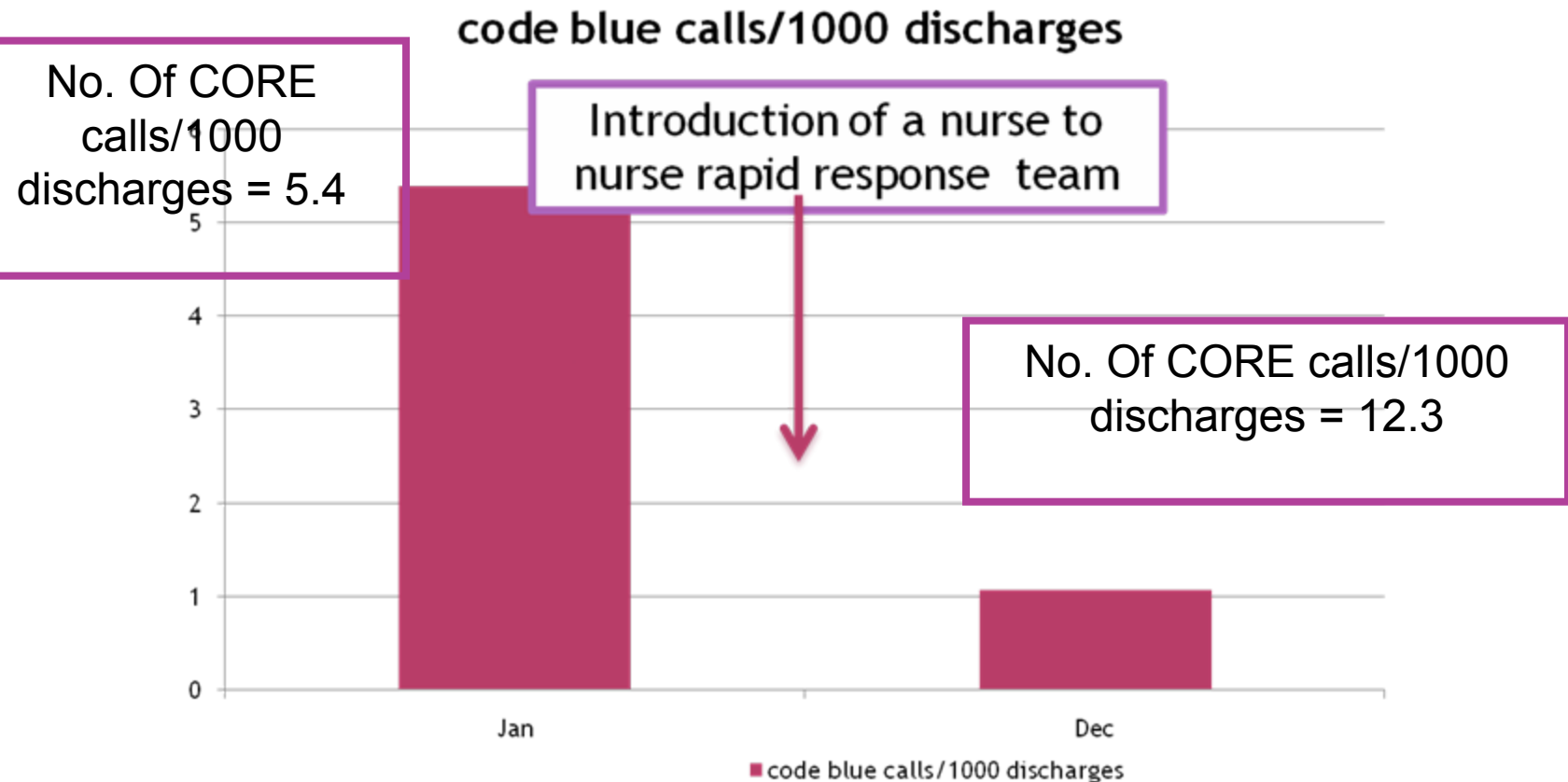
NUMBER OF CALLS/1000 ADMISSIONS - NURSE LED



48.5 calls/1000 admissions

1.6 cardiac arrests/1000 admissions

NUMBER OF CALLS/1000 DISCHARGES - NURSE LED



Bertaut, Y et al (2008) Implementing a rapid-response team using a nurse-to-nurse consult approach. J Vasc Nurs, 26, 37-42

COST OF TEAMS

Nurse-Led

(avg. length of call - 1hr)

- RRT or Crit care nurse
- Floor nurse
- ICU physician (as needed)

Salary cost/call - €31.05 ± ICU physician at 15 mins - €7.60

Based on Salaries at

S/N - €12.55/hr, £11.22/hr, DKK 93.69/hr

Sister -Team lead – €18.50/hr, £16.54, DKK138.11/hr

Specialist Dr - €30.5/hr, £27.28, DKK 227.79/hr

Airway asst. - €15.44/hr, £13.80, DKK115.23/hr

Cost/cardiac arrest call £195
(in 1999)

Medically-Led

(avg. length of call - 30 mins)

- ICU physician Team leader
- ICU nurse
- Floor nurse
- Anaesthesia or critical care
- Airway assistant
- Pts own Junior Doctor

Salary cost/call - €67.04

Training cost/call - ?

Cost per life saved in cardiac arrest =\$406605/life saved

NURSE-LED TEAMS ARE BETTER AT THIS BECAUSE.....

- ◉ Ward nurses will call them
- ◉ Nurse-led teams encourage calls and have a positive call culture
- ◉ Nurses are the ones doing all the nurse education
- ◉ Nurses can do most of what is needed in collaboration with the ward staff
- ◉ Nurses will call for help when they need it



EDUCATION, EDUCATION, EDUCATION

- The primary need is education of ward staff
- Proactive management - early recognition, appropriate response,
 - eg. sepsis care bundles,
- Prevention of Critical Deterioration
- Decisions re. End of life

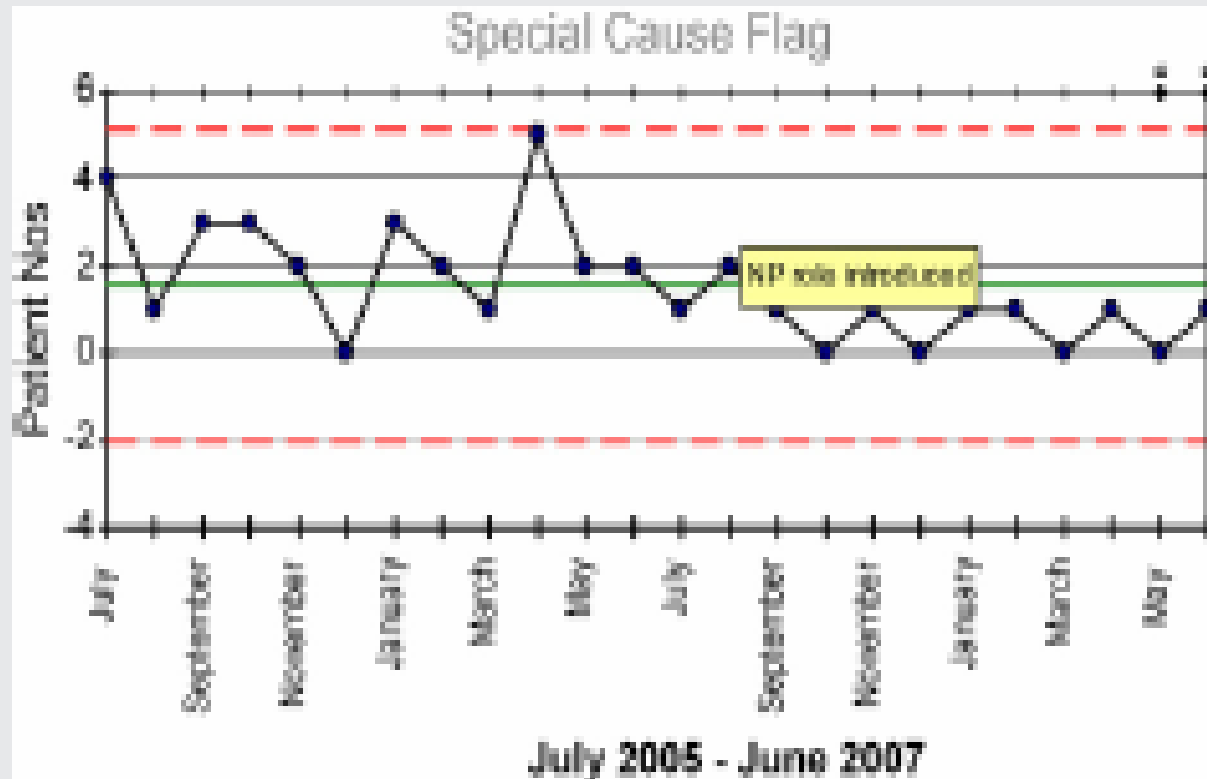
BUT CONVERSELY MORE CALLS CAN BE A SUCCESS STORY

- **Table 6** Serious adverse events during the first three days on the general wards and 30-day mortality (expressed as absolute numbers and as events per 100 patients in brackets).

	Surveillance phase N=319	Intervention phase N=345
Sepsis	19 (6.0)	14 (4.1)
Acute myocardial infarction	13 (4.1)	25 (7.3)
Renal impairment	11 (3.5)	6 (1.7)
Unplanned ICU admission	10 (3.1)	10 (2.9)
Return to operating theatre	8 (2.5)	1 (0.3)
Reintubation	4 (0.9)	2 (0.6)
Cardiac arrest	3 (0.9)	0 (0)
Acute pulmonary oedema	3 (0.9)	2 (0.6)
Death	2 (0.6)	1 (0.3)
Stroke	0 (0)	1 (0.3)
Pulmonary embolus	0 (0)	0 (0)
30-day mortality	29 (9.1)	24 (7.0)

IMPACT ON ICU READMISSIONS

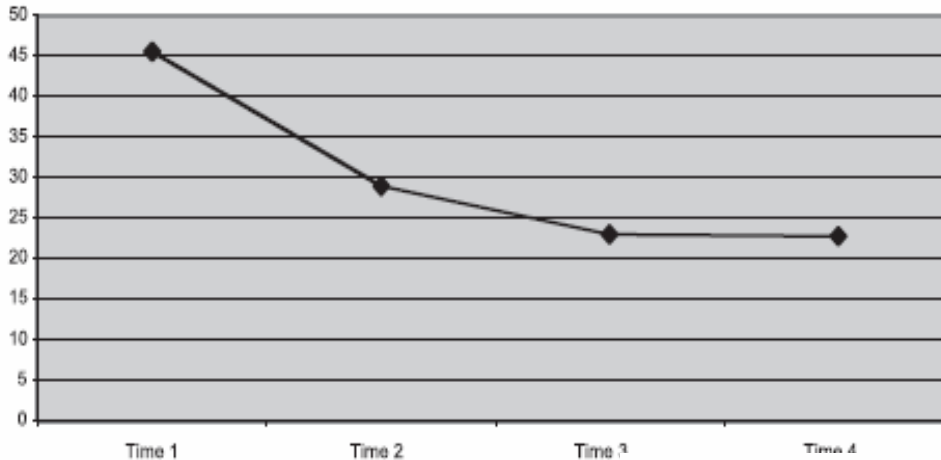
Table 3 ICU readmissions <72 h (N = 37)



Pirret ,A (2008) The role and effectiveness of a nurse practitioner-led critical care outreach service. *Intensive and Critical Care Nursing*, 24, 375-82

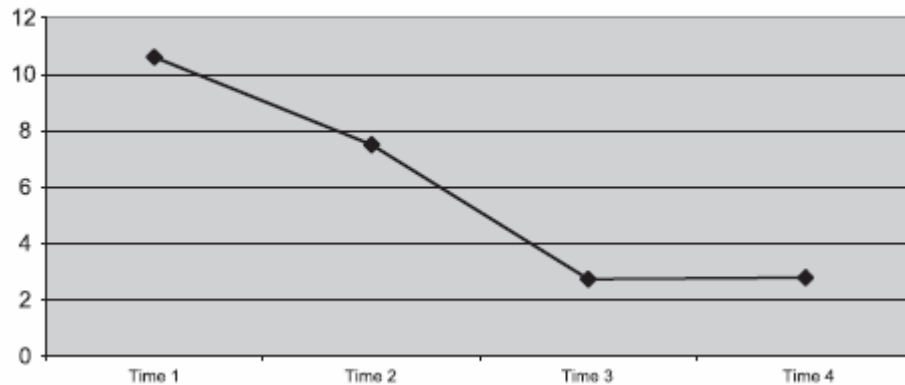
PHYSICIAN'S ASSISTANTS

Unplanned Admissions to the ICU Across Time



3 cardiac arrest/1000 discharges

Cardiac Arrests Across Time



- Unexplained tachycardia (>130 beats/min \times 15 mins)
- Unexplained bradycardia (<50 beats/min \times 15 mins)
- Elevated respiratory rate (>30 breaths/min)
- Depressed respiratory rate (<8 breaths/min associated with altered mental status \times 15 mins)
- Unexplained alteration in mental status
- Seizures
- Hypotension
- Chest pain
- Unexplained subjective dyspnea
- Bedside nurse concern about overall deterioration in patients' condition without any of the above criteria

Dacey, MJ. Et al (2007) The effect of a rapid response team on major clinical outcome measures in a community hospital Crit Care Med 2007; 35:2076-2082

CONCLUSION

- ◉ Early intervention/prevention (story et al 2004)
- ◉ Education and support of ward (floor) staff (Richardson et al 2004)
- ◉ Experts in managing sick patients in wards
- ◉ Excellent relationships between ward and nursing team (Richardson et al 2004)
- ◉ Experts in ward (floor) capability
- ◉ Ability to challenge patient management
- ◉ Excellent role models
- ◉ Ability to enhance standards of care (Ryan et al 2004)

BENEFITS:

REDUCTION IN HOSPITAL MORTALITY

Critical Care Outreach benefits for Ward patients

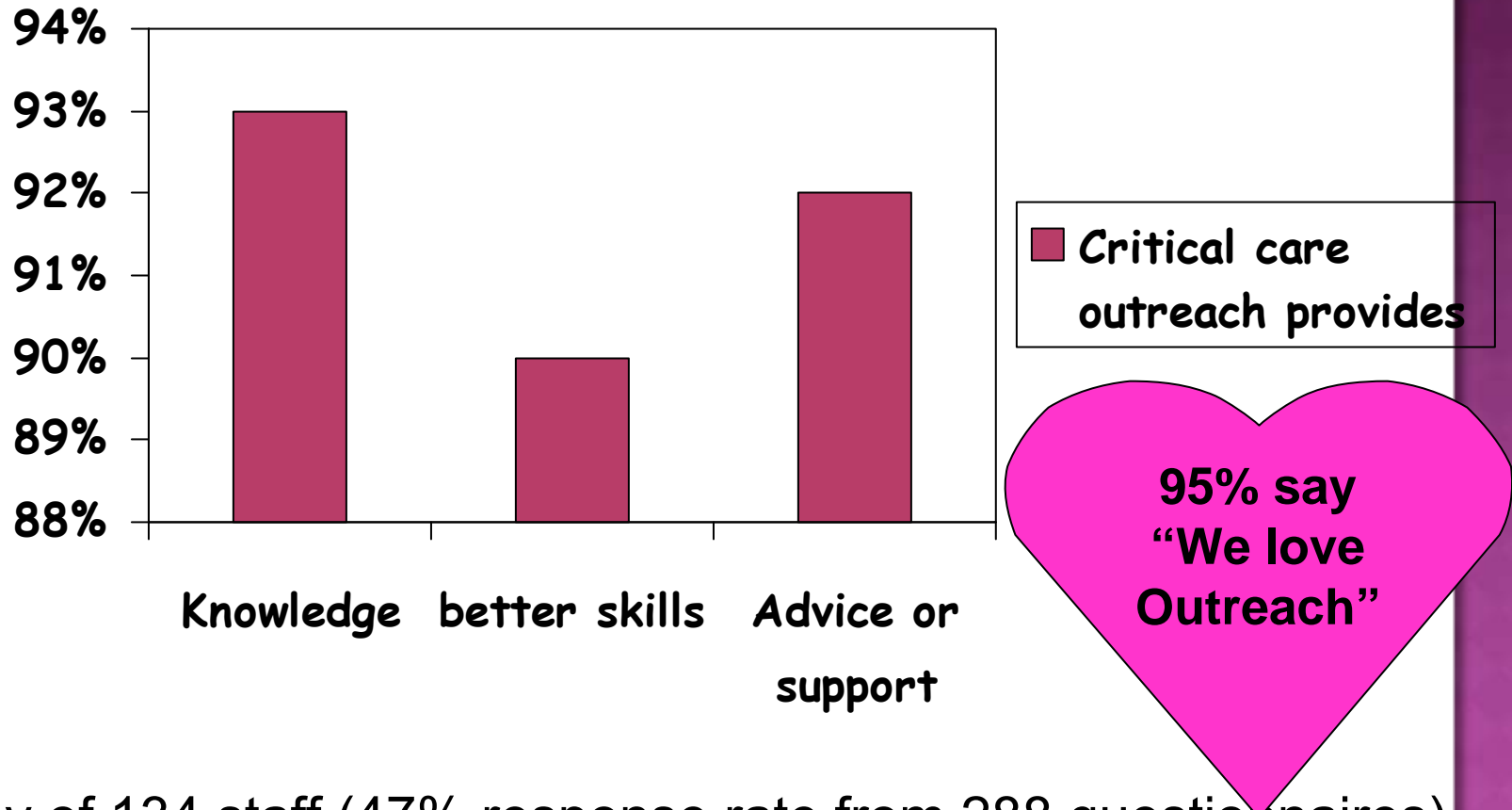
- ◉ Matched randomised trial - 16 Wards (medical, surgical, elderly care) over 32 weeks (N=7450 pts)
- ◉ Sequential introduction of Outreach service
- ◉ Used matched wards as controls/intervention and before - after in 2 different data sets

Result - stat. significant reduction in mortality for patients within the intervention wards (two-level odds ratio: 0.70; 95% CI 0.50-0.97).

INTRODUCTION OF MET (MERIT STUDY)

- 23 Hospitals in Australia
- No MET (N=11) vs. MET (N=12) for 6m
- No significant difference in :
 - cardiac arrest, unexpected deaths, & emergency ICU admission
- Decline in:
 - rate of cardiac arrests and unexpected death (from baseline)
 - increase in emergency calls
- MET group showed increased unplanned ICU admissions from baseline

WARD STAFF OPINION OF CRITICAL CARE OUTREACH



Survey of 134 staff (47% response rate from 288 questionnaires)

Richardson et al (2004) Nursing in Critical Care, 9, 28-33