Rescue Events: A mixed-methods study of how clinical staff escalate patients on the general hospital wards

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NRLS Adverse Events

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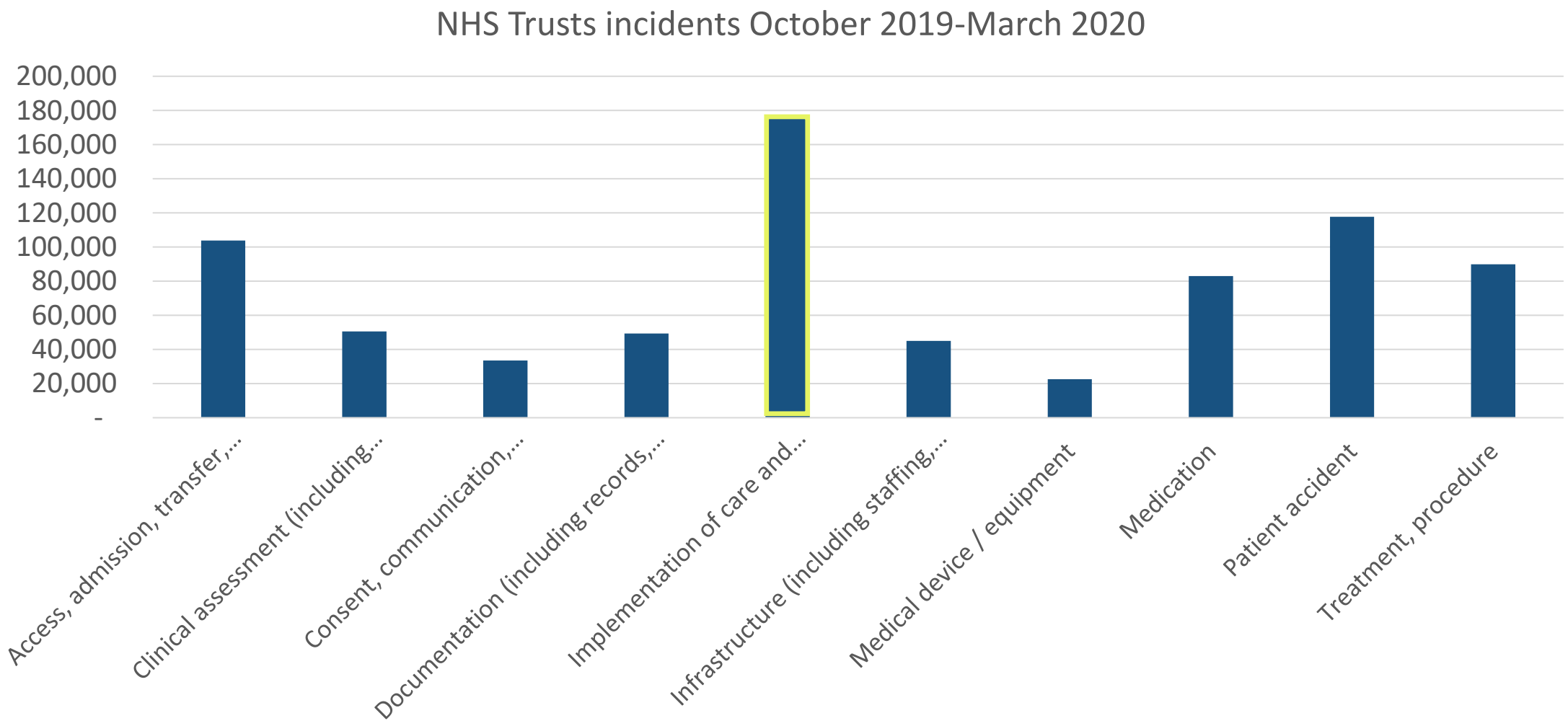
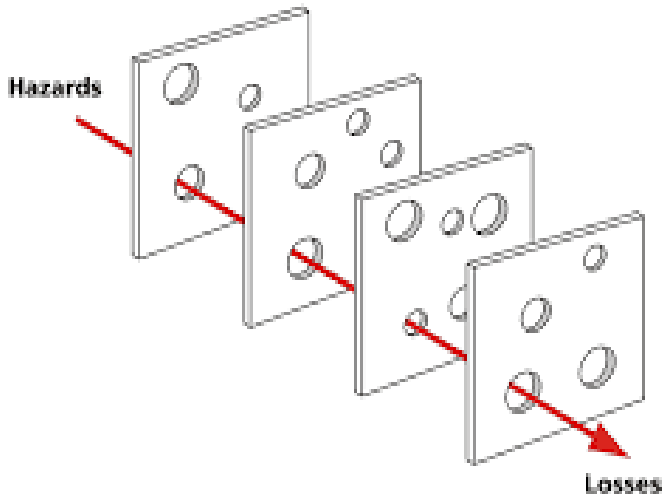
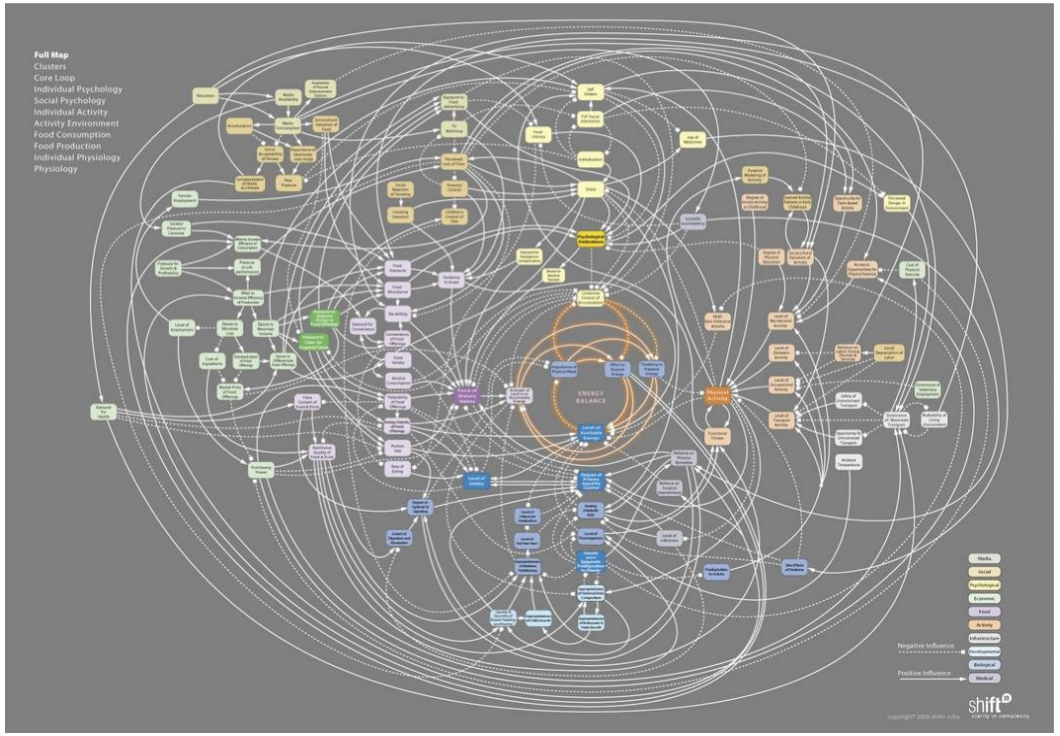


COMPLEXITY OF HEALTHCARE

Systems that rely on error-free performance are doomed to failure

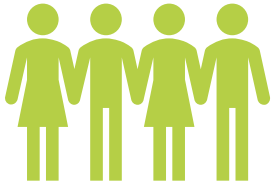




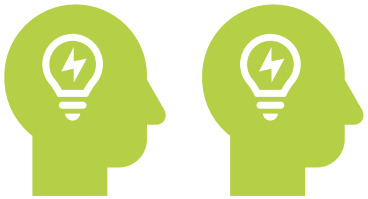
Reason JT. Understanding adverse events: human factors. Qual Saf Heal Care 1995;4:80–9.

Notes Review Methods

AIM: To understand the care and rescue of ward patients who scored EWS=>7, not admitted to ICU, and survived



METHOD: Review of 340 medical records from Survivors and 50 notes from Non-survivors (who were admitted to ICU and died)
Trauma, Medical or Surgical



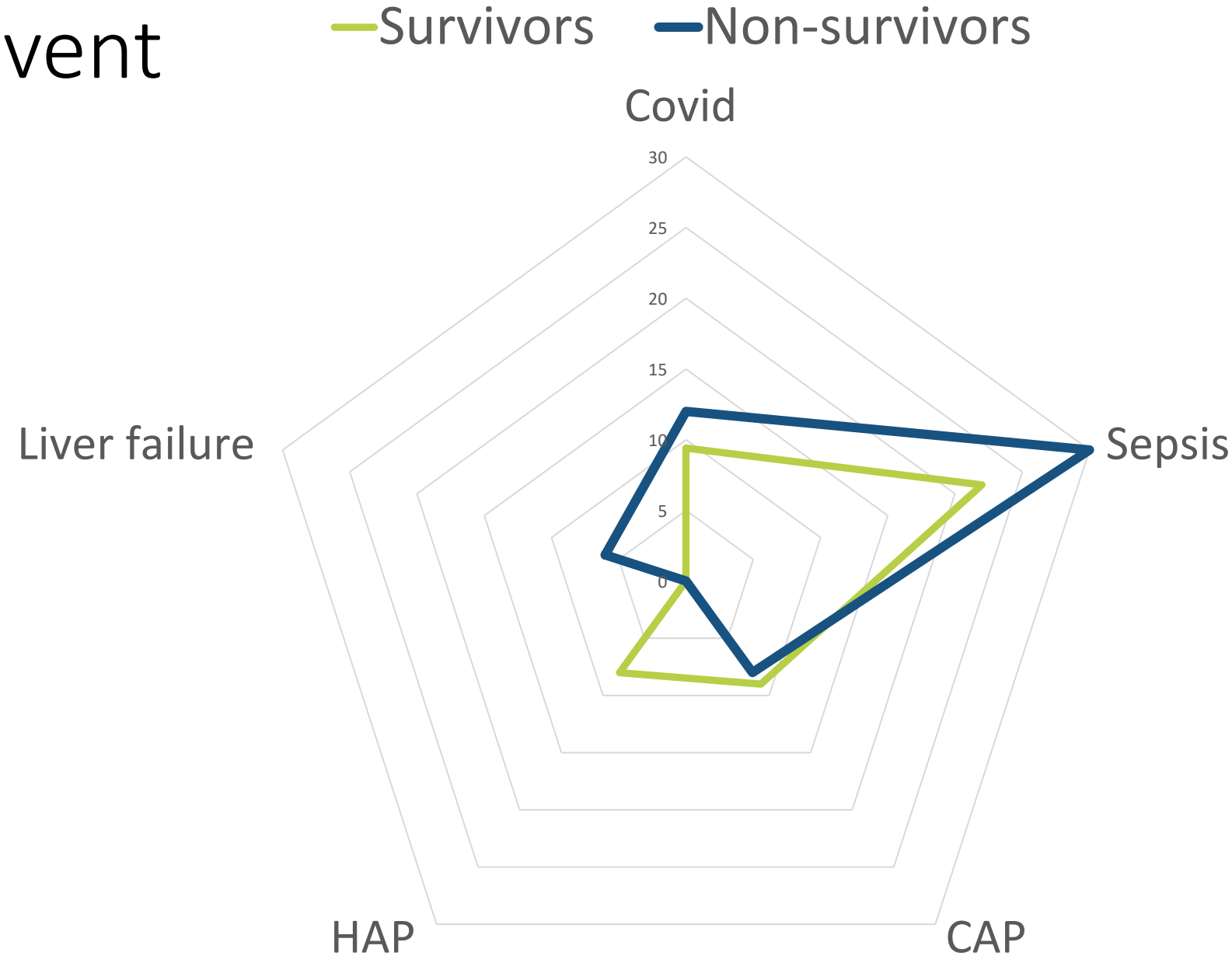
VALIDITY: Given Quality of Care Scores (1-5) centering around the trigger event
Two reviewers
Data extraction rules
Weighted kappa calculated

LIMITATIONS
- Data limited to completeness of medical records
- No ward context available
- Bias in reviewers

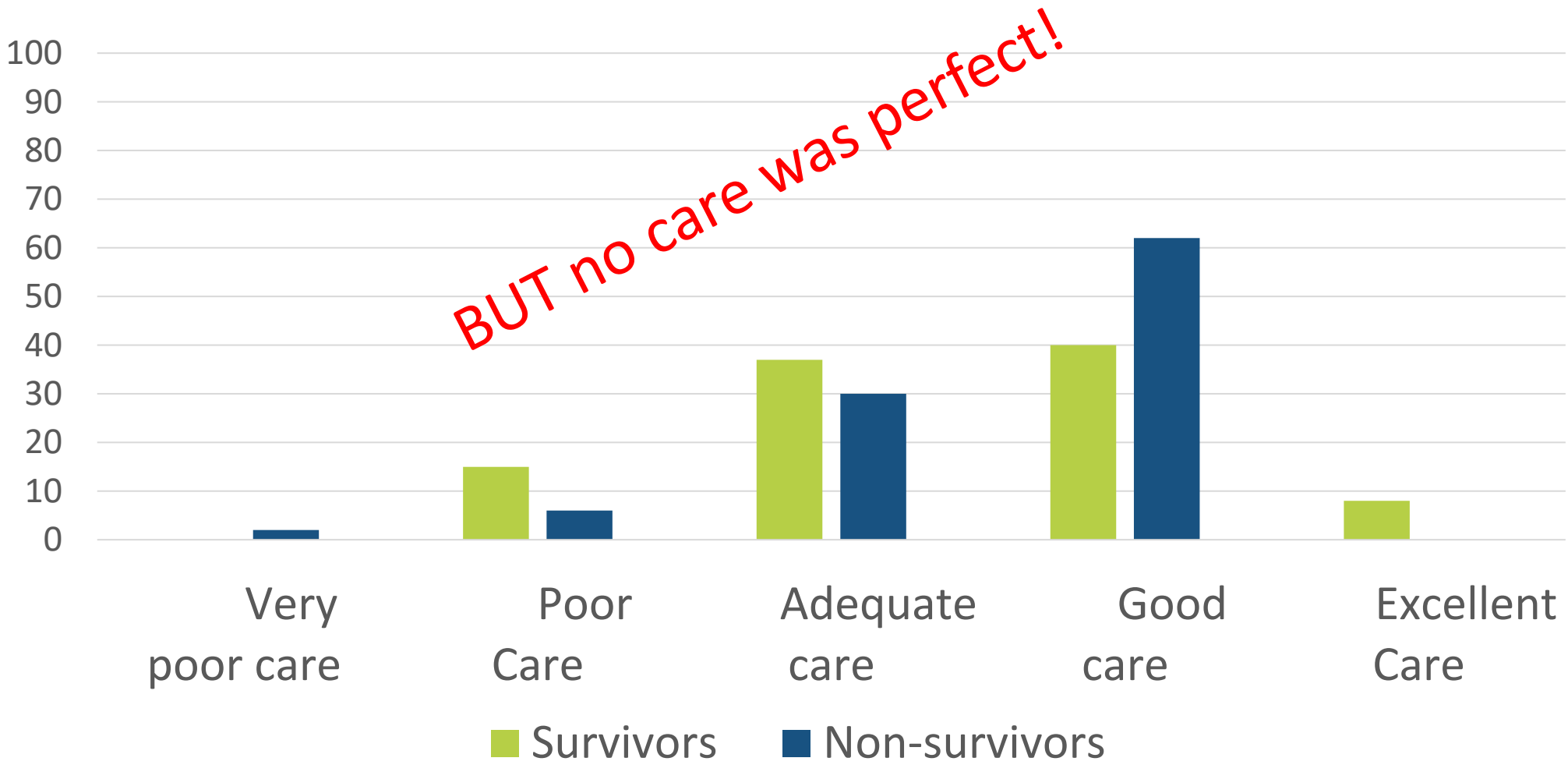
Results
Demographics

Characteristic	EWS >=7 Survivors n=340	EWS >=7 Non-survivors n=50
Age median (IQR)	58 (46-70)	64 (56-73)
Female n (%)	142 (42)	21 (42)
LOS median (IQR)	7.1 (4.1-11.5)	8.9 (4.9-14.1)
Charleston Co-morbidity Index median (IQR)	2 (1-4)	4 (2-6)
Clinical Frailty Scale median (IQR)	4 (2-5)	4 (3-5)
Hospital Admission Type n (%)		
Emergency	299 (88)	48 (96)
Elective	41 (12)	2 (4)
Admitting Team n (%)		
Surgical	105 (30.6)	14 (28)
Medical	216 (63.5)	35 (70)
Trauma	19 (5.6)	1 (2)

Results
Cause of Trigger Event



Results
Frequency of Care Scores



Weighted Kappa, 0.74, 95% CI 0.59-0.89

Results
Sub-analysis by Trust site (survivors only)

SITE A

Medically provided ICU input

21% (34/165) of patients referred to and supported by ICU

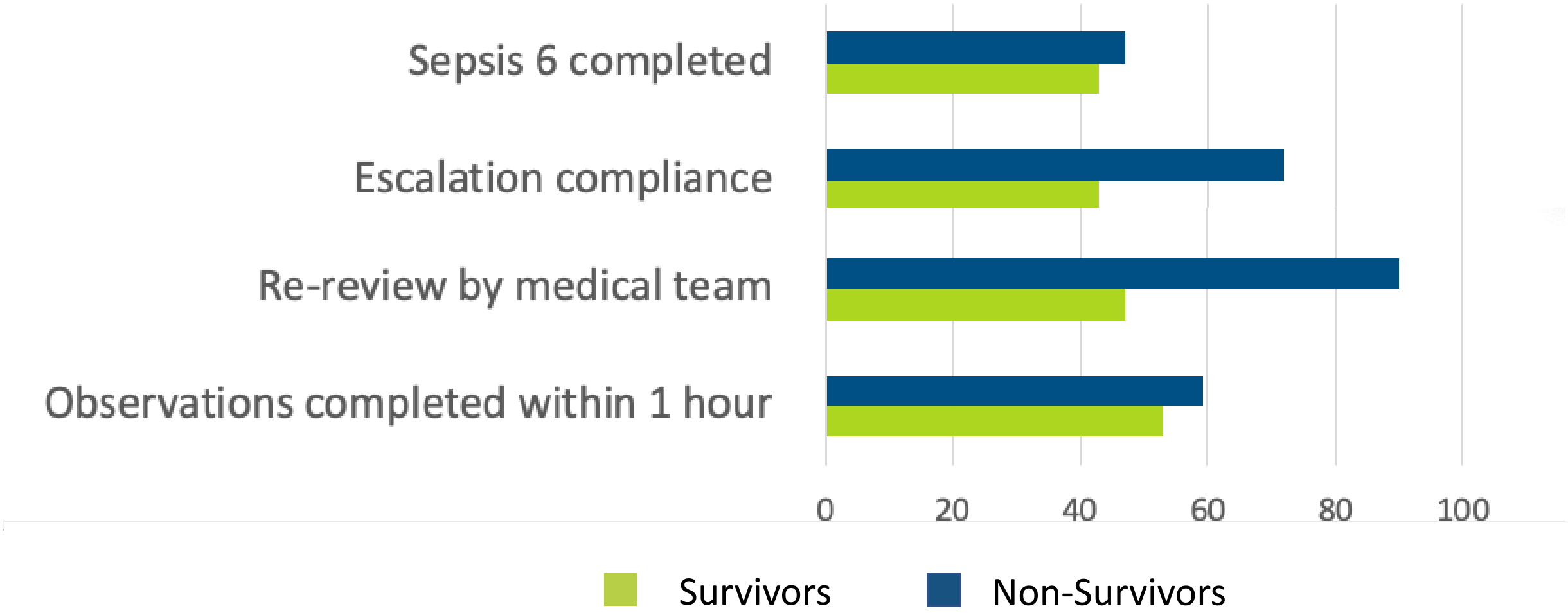
SITE B

Established 24-hour Nurse led ICU Outreach Team

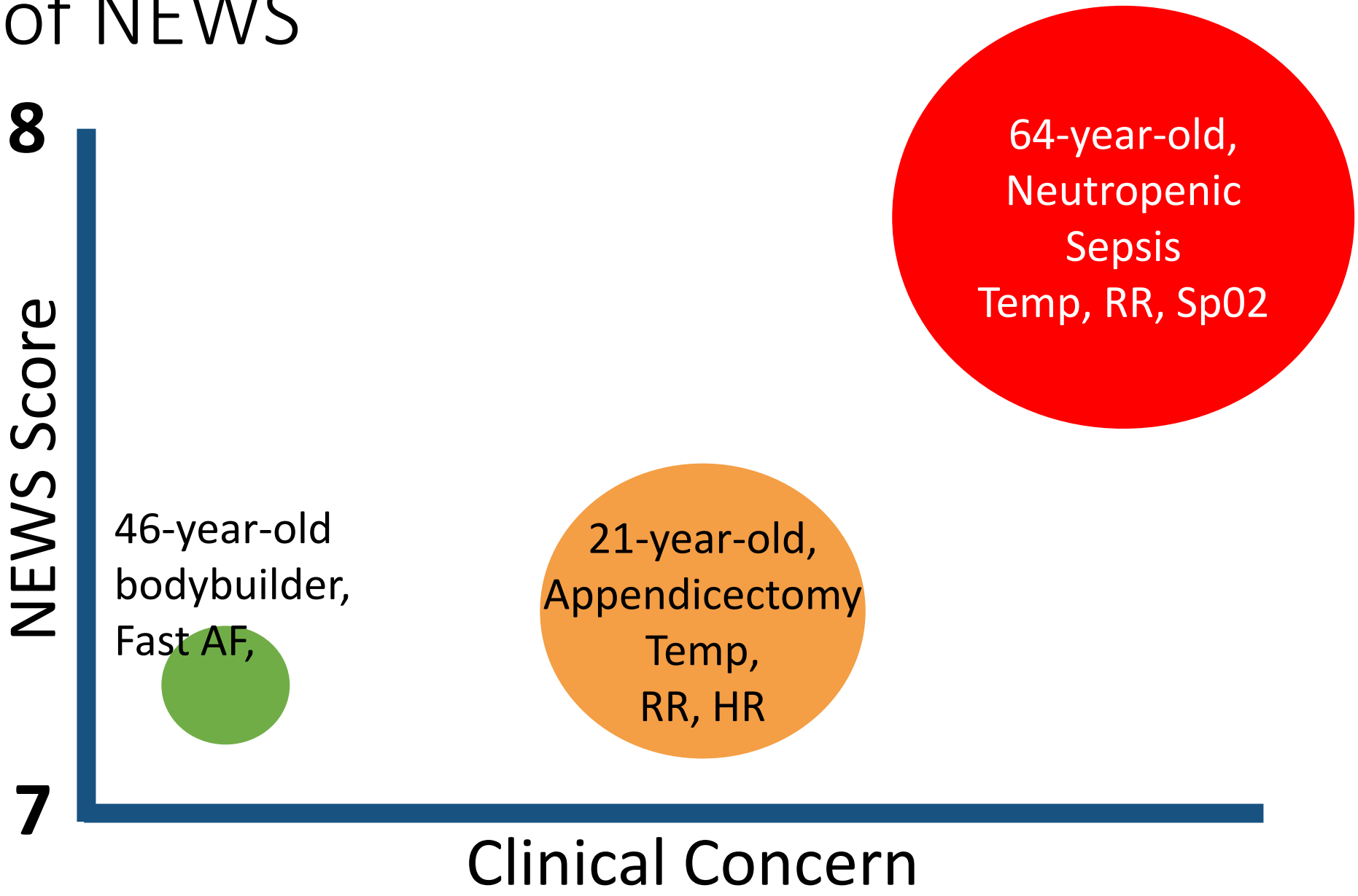
53% (93/175) of patients referred to and supported by ICU

Pearson Chi-Square p=0.00

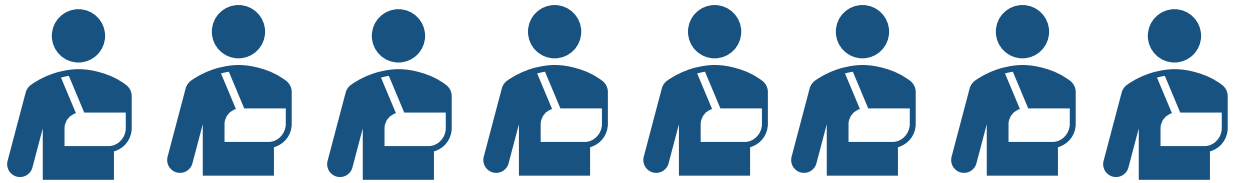
Results
Escalation of Care Metrics



50 Shades of NEWS

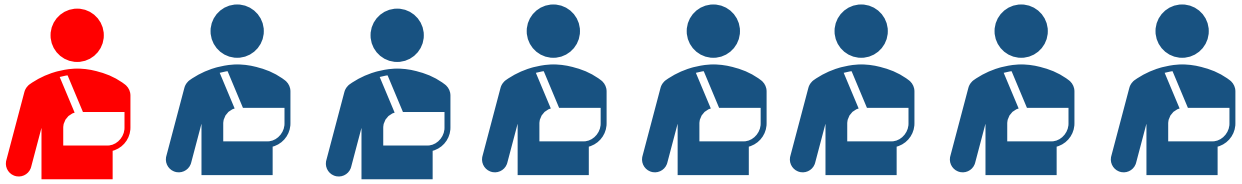


Observations completed within 1 hour



6 minutes 30 seconds per observation set

=52/420 (12%) minutes of nurse time per shift on observations



1 patient requiring hourly observations for 4 hours

= 72/420 (17%) minutes of nurse time per shift on observations

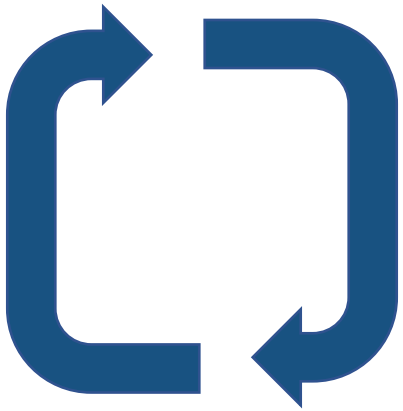
Rescue Vignette

Given treatment dose anticoagulation for multiple PEs.

81-year-old, upper quadrant pain who underwent laparoscopic cholecystectomy

Developed post-operative delirium despite normal NEWS scores

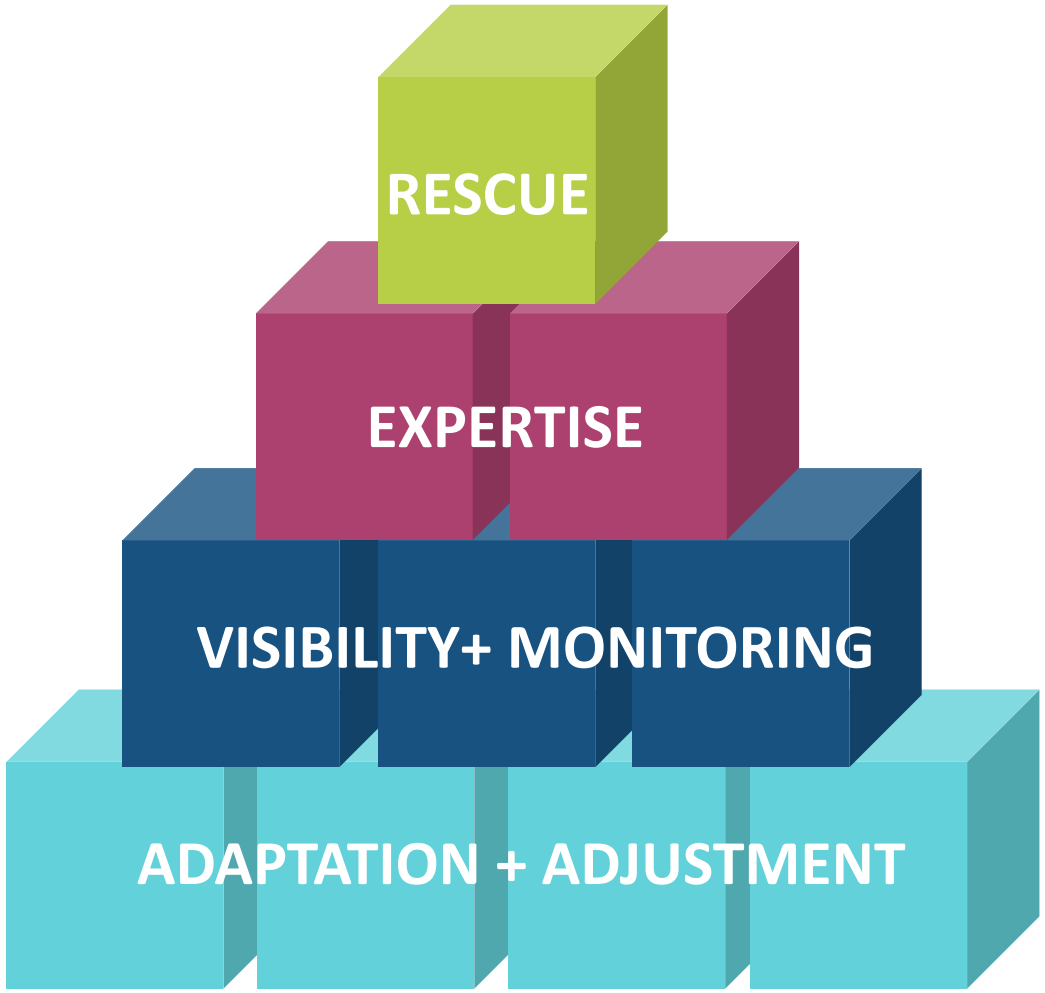
Midnight-NEWS score increases to 7, low BP, needing IV fluids and had a CTPA and chest x-ray



Nurse notes a change in mental state and escalates to night medical cover.

Reviewed by SHO.

Results
Themes



- Avoidance of ICU
- Early admission to ICU

- Predicting consequences
- Teams that seek out the sick

- Patients who died had higher frequency of monitoring than those that survived
- Overall, escalation was better in those that died than survivors

- Is not doing one hourly observations a failure or a success?
- Some observations far exceeded local policy
- Care is clearly diverted to those most at need
- We need better prediction models to ensure resources are appropriately diverted

Definition of ‘Rescue’

‘This can include recognising a patient death event. It is as much about avoiding ICU or being admitted to ICU early, as it is about being on the right care pathway’

Conclusion and Implications

- There are subtle nuances to a ‘EWS’ score and, until predictive models can incorporate multiple elements of patient history, this needs to be done by nurses
- Care in patients who died was globally better than those that survived
- Meeting or not meeting the 1 hourly observations may be as much ‘success’ as ‘failure’ when viewed in a whole patient load context
- ICU involvement was significantly higher in the Trust that had a nurse-led ICU Outreach team