Recognise and Rescue:

A hospital-wide collaboration to improve response to the deteriorating patient at Nottingham University Hospitals NHS Trust

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Summary

Failure to recognise, respond to or escalate clinical deterioration has well documented consequences for patient experience and outcome. At Nottingham University Hospitals (NUH) NHS Trust (1900 beds) 'failure to rescue' had been identified as a high clinical risk, but improvement work was being performed 'in silos' without consistently benefitting from shared learning or goals. In March 2012, a new programme called 'Recognise and Rescue' was formed which brought relevant pre-existing clinical focus groups together to collaborate alongside key stakeholder departments.

Our aims were to improve care of the deteriorating patient by improving recognition and reducing delays to treatment or escalation through a data driven, multidisciplinary and trust-wide strategy. Through shared learning, analysis of critical incidents and review of Trust-wide audits (including severe sepsis, Acute Kidney Injury , Early Warning Score policy (EWS), and emergency theatres) common themes that crossed previous boundaries were identified. Through direct dialogue with Trust board members and commissioners an ambitious programme of work was set out with clear goals with defined timescales.

By devising a set of measures for improvement, a 'Recognise and Rescue' (R&R) dashboard was developed. Since 2012, a number of trust-wide indicators have improved dramatically including EWS policy compliance (notably nursing escalation improved by 46%), sepsis bundle compliance (improved from 25% to 80%), paediatric cardiac arrest incidence (none since April 2013) and CCOT activity (increased by 72%). These have been achieved through shared learning and use of improvement tools across previously disparate clinical groups. Education programmes in 'acute care skills' have also now been embedded in nursing and medical education at NUH, supported by the clinical network created by R&R.

The profile of R&R issues at NUH has been raised at Trust and commissioner level. Our work has been shared regionally and nationally, as well as through open disclosure of data through Twitter and public presentations.

Our future plans remain ambitious, with the introduction of mobile eEWS, eHandover and escalation at NUH during 2014 which will drive further improvements in patient safety.

Recognise and Rescue has created a hub for 'failure to rescue' improvement work which has allowed our teams to work synergistically towards common goals. Shared learning, robust audit and a data driven strategy have led to quantifiable improvements in patient care.

The Problem

Failure to recognise, respond to or escalate clinical deterioration has well documented consequences for patient experience and outcome. Evidence from the Global Trigger Tool, NCEPOD reports and NICE Clinical Guideline 50 all points to 'Failure to Rescue' being a significant cause of patient harm in the NHS and yet service improvement work is often uncoordinated.

At Nottingham University Hospitals (NUH) NHS Trust (a 1900 bed acute hospital on two sites) 'failure to rescue' had been identified in multiple incident inquiries and was implicated in 5 of the top 10 NUH clinical risks. Prior to 2012, multiple clinical groups were working on service improvement initiatives but lacked shared goals and were failing to benefit from shared learning. In March 2012, a new programme called 'Recognise and Rescue' was formed which aimed to improve our response to the deteriorating patient across all inpatient departments at NUH by linking key clinical groups and stakeholder teams together towards a common goal.

Collaboration and Aims

Relevant pre-existing clinical focus groups were invited to collaborate on this Trust-wide project alongside key stakeholder departments:

Reporting Groups:	Sepsis Action Group Acute Kidney Injury Team Early Warning Score (EWS) Steering Group Resuscitation Committee Emergency Theatres Pathway Team Acute Medicine Case Review Group Critical Care Outreach Team (Adult and Paediatrics)
Stakeholder Departments:	Emergency Department Acute Medicine Critical Care Obstetrics and Gynaecology General Surgery Paediatrics

By bringing these teams together alongside invited experts in education, patient safety, and service improvement, Recognise and Rescue has truly become a multidisciplinary, wide-reaching, Trust-wide endeavour. Clear aims were set at the outset and included:

> To improve the recognition of the deteriorating patient at Nottingham University Hospitals NHS Trust
>
> To reduce harm from deterioration by reducing avoidable delays to urgent treatment and appropriate escalation of care.
>
> To develop and monitor quality assurance metrics that provide meaningful information in evaluating service improvement.

Data Driven Strategy

Each stakeholder and reporting group was required to present progress reports to the Recognise and Rescue (R&R) committee every 6 months. Initial meetings involved sharing problems, reporting on past experiences and determining common themes.

We benefited from a number of existing robust trust-wide audit programmes which were asked to present data centrally for the first time. This led to the development of a number of key indicators that drove subsequent improvement work, including:

Sepsis bundle compliance
Early warning score policy adherence
Acute kidney injury (AKI) bundle compliance
Learning from surgical, medical and paediatric case reviews
Incident thematic analysis
Critical Care outreach (CCOT) activity

R&R also reviewed all high level and serious untoward incidents relating to failure to rescue, from which key learning was determined and actioned.

The interaction between clinical groups (e.g. AKI vs Resuscitation vs EWS) became clear early on, with EWS policy adherence, poor escalation pathways and sepsis care being evident common themes. Having identified key 'measures for improvement', clinical groups devised rolling audit programmes to populate an 'R&R Dashboard'.

Intervention

By working together and learning from each reporting group a prioritised programme of work was set. Interaction with Trust Board members and commissioners was a key task in raising the profile of R&R issues and has ultimately led to a target driven 'From what? To what? By when?' strategy using the Commissioning for Quality and Innovation (CQUIN) framework.

R+R has now proposed, devised and negotiated five CQUIN targets based on our prioritised aims:

2012-13	Root Cause Analysis of Cardiac Arrests and National Cardiac Arrest Audit (NCAA)
2012-14	Severe Sepsis Bundle compliance
2013-15	EWS policy adherence
2014-15	Emergency Theatre Pathway
2015-16	Acute Kidney Injury (Proposed)

From thematic analysis of serious incidents, the R&R team has also tackled fluid balance policy, recurrent failure of intravenous access and failure to escalate to consultant level. R+R has also devised novel 'Datix' reporting categories, so that it is easier to report a failure to rescue incident.

Measurement of Improvement

The R+R dashboard provides data on a range of performance metrics related to failure to rescue. These include:

EWS Policy: Since February 2013 quantified improvement has occurred in all aspects of escalation from accurate recording of observations through to timely senior medical review. The greatest improvement has been in standards of nursing escalation where there has been a 46% increase in compliance with the escalation policy (62% Feb 2014 vs 13% Feb 2013).

Severe Sepsis: Administration of antibiotics in <1hour has improved from 40% to 90% since December 2011. Compliance with our 'pre-icu' care bundle has increase from 25% to 80% over the same period. Direct individualise feedback to clinicians is now embedded.

Cardiac arrest: 90% of cardiac arrests now receive a root cause analysis and NUH submits all data to the NCAA.

Paediatrics: There have been no unexpected cardiac arrests in the Children's Hospital since April 2013. Analysis of Medical Emergency calls has revealed a drop in 'failure to rescue' cases from 24% to 9.5%.

CCOT: Activity has risen by 72% in the past year due to improvements in escalation

Incidents: Failure to Rescue incident reporting has increased three-fold since introducing new categories and thematic analysis.

Qualitative review of R&R also reveals the extent of shared learning, with individualised clinician feedback (originally used in sepsis) now being used for EWS, AKI and resuscitation improvement programmes. Equally 'time-lining' care pathways is being used to illustrate emergency theatres and EWS care having originally been devised by R+R.

R&R has also helped to drive improvements in education and training across the hospital. Through direct links with the School of Nursing, undergraduate and newly qualified nurses now receive defined 'Acute Care Skills' training. Direct teaching of Foundation doctors also occurs for EWS, sepsis and AKI with accompanying web-based podcasts for other trainees or locums.

Effects of change

The profile of R&R issues has increased at NUH with prominent coverage in the Trust Quality Account and direct reporting of metrics to the NUH Board. R&R now represents a central conduit for improvement work and acts as a problem-solving hub that is gaining increasing awareness locally and nationally.

Obtaining meaningful patient outcome data is difficult but, for example, our unadjusted ICU mortality for severe sepsis has improved from 42 to 26% with standardised mortality ratio falling from 119 to 86.

Nationally, this work has been shared with a number of local trusts, through the BMJ International Forum and directly with the Patient Safety team at NHS England.

Public and Patient Involvement

Due to the nature of many of the incidents involved in this programme, direct patient involvement in the workings of the committee have been difficult to achieve. However, where possible, we have used our active acute medicine patient group to review information leaflets and we have presented our work to an NUH public members event. Recognise and Rescue also now has its own Twitter feed (@RecogniseRescue) on which we publish our latest news and data.

The Future

This is, however, only the beginning.

Our EWS, Emergency Theatres and AKI programmes all have ambitious goals for the next two years and our compliance with the severe sepsis bundles has been embedded into our Quality Contract.

Our most ambitious task, however, is to roll out one of the most advanced electronic EWS and eHandover systems as part of NUH's plan to become paperless. Driven clinically from within R+R, we have worked with software partners to develop mobile EWS with automatic escalation through text messaging which we aim to pilot in 2014 and roll out across the Trust by April 2015. It is hoped that this will lead to more robust patient monitoring, better communication and data quality that will further drive patient safety.

Lessons Learnt

System failures are rarely isolated to individual departments. Through shared learning and common goals we are better able to improve services through synergy. The use of a data driven strategy with individualised audit/feedback has been crucial.

By aiming to improve R+R issues Trust-wide, the project's scale was initially daunting leading to strict task prioritisation. Equally, adult/paediatric integration was challenging but has led to fruitful shared-learning that was previously unexploited.

To improve R&R, we would integrate trainee doctors, frontline nurses and administration support more reliably and seek more learning from external organisations.

Message for Others

Hospitals need a single hub to coordinate a multidisciplinary response to the deteriorating patient. Shared learning is needed to create evidenced-based common goals, supported by a data-driven, motivated team. By creating an environment committed to patient safety, standards can only improve.