G552(P) CHASING OUTSTANDING INVESTIGATIONS FOR PATIENTS DISCHARGED FROM THE PAEDIATRIC UNIT: SYSTEM CHANGE

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Context This project was undertaken in the paediatric department of a district general hospital. We involved medical, nursing and administrative staff.

Problem There were two previous systems for chasing outstanding results for discharged patients. Those for patients seen on the Paediatric Assessment Unit (PAU) were recorded at time of discharge in a folder. Those for discharged inpatients were added to the inpatient job list with allocation to a named individual.

We found these systems resulted in investigations being seen much later than date available with the prospect of adverse impact on patient care.

Assessment of problem and analysis of its causes Random selection and analysis of 50 entries from the old system showed that 31 (62%) of results had been chased/actioned. Only 9 (18%) had documentation indicating results had been seen/actioned within 24 h of availability.

Multi-disciplinary team (MDT) discussion concluded that a major contributory factor was that investigations were being listed in the order of generation without consideration of the potential result availability date. Consequently, if a colleague chased results which were not available within their time (typically one week) on shift, these investigations would not be routinely chased resulting in potential for numerous delayed results.

Our aim was to devise a single efficient system to address all of these problems.

Intervention Following further MDT discussion a jobs book was designed. This comprised of a page-per-day diary. Any patients discharged from PAU with outstanding results were entered on the page of the anticipated result date. Those discharged from the inpatient ward with results expected beyond 48 h would also be entered into the diary. Each entry would include: patient and clinician details (including bleep number); job details; and outcome and documentation. The responsibility of looking at the results expected on each day was that of the team on PAU. If a result was not available when expected, then a note would be added to a revised future date to ensure follow-up.

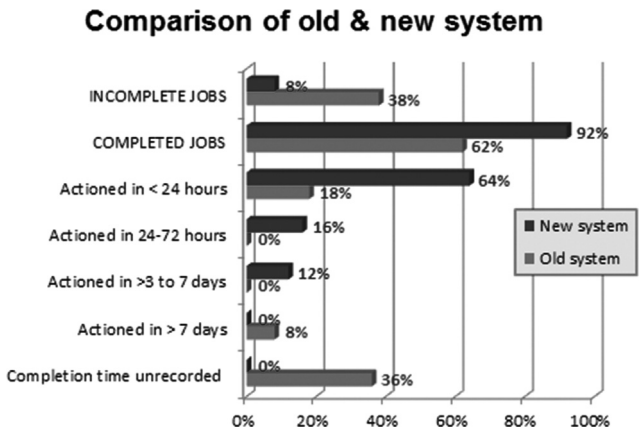
Study design Observational study to assess effect of intervention.

Strategy for change The MDT was apprised through circulation of emails and presentation at grand-rounds of the proposed new system, rationale, aims and rules of use. Feedback was sought via email and verbally. Proposed changes were agreed with key stakeholders and colleagues before implementation. A review was planned after 6 weeks of use.

Measurement of improvement We analysed a random selection of 50 entries from each system (total 100). The new system was shown to be superior with 46 (92%) of jobs completed (previously 62%), with 32 (64%) of total jobs acted upon within 24 h of results becoming available (previously 18%) (Figure 1).

Effects of changes There has been a significant improvement in the chasing, actioning and documentation of results, including dates and timings which improved patient care and experience.

The team has improved ownership, traceability and accountability of clinicians who have entered and completed tasks. This encourages and reinforces a culture of teamwork to meet common goals.



Abstract G552(P) Figure 1

The few results unavailable on the date expected are now routinely entered for chasing on an appropriate future date to ensure completion.

The new system acts as a record for future reference, audit or monitoring.

Lessons learnt Liaising with a wide variety of MDT colleagues of all grades and utilising a variety of appropriate communication methods were essential for successful system change.

Message for others We have proven that a relatively simple change in working can significantly improve patient care and foster good team working.

This system is readily replicable and can be implemented in any department to yield similar results.

G553(P) RESUSCITATING RESUS

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Context This project was based in a busy district general's Paediatric resuscitation bay. Doctors, nurses and the resuscitation team were involved.

Problem The Resuscitation Council states: 'Healthcare organisations have an obligation to provide a high-quality resuscitation service' and 'staff have immediate access to appropriate resuscitation equipment and drugs' with 'A reliable system of equipment checks and replacement in place'. It states that appropriate airway equipment should be immediately available and circulation equipment accessible within minutes.

The current Paediatric resuscitation bay was felt to not fully meet the above criteria. The resus bay was not an intuitive area and had no clear restocking guidelines with trust incident forms being logged for missing equipment during resuscitations.

Assessment of problem and analysis of its causes Two lists of equipment were devised: one of simple airway equipment and one of equipment required to gain IV access and give a dextrose bolus. We timed one SHO trying to find specific equipment in our current resuscitation bay. The results were discussed in departmental meeting to consolidate the opinion of the Paediatric team, the Anaesthetic team, the Resuscitation officers and the Paediatric nurses, an action plan was devised to address the failings noted by staff in the department.

Intervention The main instigated changes involved creating uniform circulation trolleys containing all the required equipment for paediatric cannulation and giving a bolus of rescue fluid. The bay had 3 grab trolleys and all were identical. To aid restocking, a label was placed below each piece of equipment to state what should be there and photographic checklists were created. The same principle was used for the airway trolley which, while being organised for weight, had an identical layout in each drawer and the same labelling system and checklist.
Study design This was an observational study based on the time taken for SHO's to find emergency equipment pre and post changes.
Strategy for change The changes were implemented by a Paediatric SHO and F1 who redesigned, labelled and restocked the trolleys. This was organised prior to the new rotational doctors starting who were then inducted around the department by one of the study organisers.
Measurement of improvement We timed SHO's finding equipment pre and post changes.
Results

Abstract G553(P) Table 1 Time taken for SHO's to find equipment pre and post changes

	SHO 1 (pre changes)	SHO 2 (post changes)
Airway test	2 mins 34 s	1 min 49 s
Circulation test	6 min 31 s (incomplete)	1 min 7 s

Prior to the changes SHO 1 took a protracted amount of time to find a paediatric non-rebreath mask and during the circulation speed test searched multiple drawers, could only find half a culture kit and used the last bag of 10% dextrose in the paediatric resuscitation bay. After our implementation, SHO 2 found all of the airway adjuncts in the airway trolley and only required one grab trolley to successfully collate all the circulation equipment with a decrease in time.
Effects of changes Although two SHO's were used, both were of a similar grade and had had a similar amount of exposure and experience within the resuscitation bay. Simple measures, requiring no additional equipment or money, were taken to standardise the area. Substantial improvements in time were noted in both tests. Nursing staff and doctors reported finding the area easier to use, more logical and clearer to restock.
Lessons learnt Simple changes can make a demonstrable difference and improve patient safety.
Message for others We showed with no money or extra resources you can ensure a safer environment for patients by ensuring uniformity and clear labelling.

G554(P) IMPLEMENTATION OF AN INTEGRATED INPATIENT PAEDIATRIC MORTALITY REDUCTION INTERVENTION

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Background Based at a University teaching hospital in Northern Ethiopia, the author was placed through Voluntary Services Oversea's (VSO) as a Paediatric Senior. The department witnesses a high Paediatric mortality rate amongst inpatients (30%, non-neonatal). Ward level care is largely provided by junior doctors (Interns). A gap in knowledge and skills of up-to-date resuscitation practices was identified in this group.
Project design The project included an intervention to improve Intern knowledge and skills. The intervention comprised development of a resuscitation protocol package with suitable training. A baseline audit of all Paediatric admissions (excluding neonates) over a three month period provided mortality data including specifics of disease category. This highlighted the conditions with highest rates of mortality at our hospital: severe acute malnutrition, coma, meningitis, congestive heart failure (CHF), hypovolaemic shock and meningitis. The Paediatric senior faculty developed five, locally appropriate, protocols to address the acute management of these conditions plus added three complementary protocols based on those promoted by the Emergency Triage, Assessment and Treatment (ETAT), WHO. The final protocol package included: respiratory distress, hypovolaemic shock, septic shock, coma, CHF, airway emergencies, seizure and cardio-pulmonary resuscitation (CPR). The nuances of acute malnutrition were addressed in each protocol. The package provided readily available, locally appropriate guidelines to provide evidence based information for Interns.

The protocol package was implemented with a training programme of all Interns rotating through the Paediatric department during the study period (n = 21, September 6th to December 9th 2011). A full day simulation based training course was developed to introduce the concept and use of the protocol package plus development of key resuscitation skills: bag mask ventilation, CPR plus intra-osseous needle placement. Simulation based scenarios were developed to build on theoretical knowledge provided in short didactic lectures and allow practice of skills.
Results 474 patients were admitted in the baseline group and 432 following the intervention. No change was observed for overall mortality (crude OR=0.72, 95% CI 0.40–1.29, p = 0.265). No change was observed in first-24-hour mortality (crude OR 0.97, 95% CI 0.37–2.55, p = 0.959).

Total examination scores improved from median 32.6 to 73.5% ($p < 0.001$), with improvements observed for all tested skills. Median scores improved from 11.1 to 77.8% on bag mask ventilation, from 11.1 to 88.9% on CPR, from 40.0 to 100% on intraosseous needle placement, and from 21.7 to 87.0% in aggregate for all observed procedural skills ($p < 0.001$ for all parameters).
Evaluation Two aspects were evaluated to aid measurement of success. An audit of inpatient admissions was carried out pre and post Intern training. Data was collected from the ward log book and entered into an Excel spreadsheet. The primary and secondary outcomes included crude mortality plus mortality within the first 24 h and were expressed as a percentage of admissions. Odds ratios for these outcomes were calculated using univariable logistic regression.

Evaluation of Intern knowledge and skills took place pre- and post-training to assess the impact of the simulation based program. Testing took place in multiple choice format with videos of critically ill children to focus on pattern recognition and triage skills plus a theory paper to assess problem-solving in emergency situations. Procedural skills were tested by direct observation. Trainees were asked to demonstrate skills covered in the course while project coordinators applied a standardised, checklist-based marking tool to evaluate their performance. Median trainee examination scores were calculated as percentage answered correctly and pre- and post-training results were compared by Wilcoxon matched-pairs signed ranks test.
Conclusions Combining care standardisation, management protocols, and simulation-based training did not red uce mortality among non-neonatal Paediatric inpatients in this study.