Message for others Simulation training programmes facilitating safe return to work should be available nationally and within other specialities.

G524(P) JUNIOR DOCTOR ESSENTIALS: CRITICAL INCIDENT REPORTING

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Context The Junior Doctor Essentials (JDE) patient safety initiative was launched by a group of Junior Doctors, for Junior Doctors, in 2009. It has expanded across hospitals and specialties since.

Problem Despite national initiatives, the prevalence of inpatient iatrogenic harm remains high. Transition from student to foundation doctor is challenging; new job pressure, combined with clinical inexperience increases the risk of error. Transition from adult to paediatric medicine is equally difficult.

Empowering junior doctors to identify unsafe processes and implement mitigating solutions cultivates a patient safety culture. Junior Doctors Essentials, a junior doctor-led initiative, draws on their experiences to identify likely mistakes.

Assessment of problem and analysis of its causes At the project's inception, a focus group identified information foundation doctors considered would have eased transition into work. Their findings were augmented by organisational recommendations from The Medical Director. Since then, the model has been modified to place responsibility for designing the cards and gaining governance approval with locally nominated team leads, guided by the project team and informed by Critical Incident data. This has allowed the project to scale coherently across hospitals and departments nationwide.

Intervention Following review of departmental patient safety issues and Critical Incidents, ten double-sided 'credit-cards' highlight essential information. These are distributed to junior doctors at induction attached to a belt clip enabling portability and are immediately available for consultation in any situation.

Study design Junior Doctors are consulted annually to review each topic area's subjective effectiveness at protecting patient safety. More recently, the effect of the introduction of cards on Critical Incident rates was evaluated.

Strategy for change Survey results from the last four years have been presented to local, regional, national and international audiences. In presenting this formal critical incident data, we hope to expand the project further.

Measurement of improvement Local paediatric Critical Incident reports were evaluated pre- and post- JDE card introduction. We used strict inclusion and exclusion criteria to ensure we reviewed incidents that would involve the group of staff using the cards.

Critical Incident data from the year before the cards' introduction shows that 33% of incidents would have been covered by information on the cards. Over a one-year period since their introduction, only 1 incident (3.2%) was covered.

It was incidentally noted that some Critical Incidents reported were a result of errors made by other teams with regular contact with our group of paediatric patients. We are considering expanding the cards locally.

We also detected recurrent incidents regarding prescribing errors and use of the DKA protocol. These will now likely be included in the next update of the cards.

Effects of changes Objectively, our review of Critical Incident data suggests the cards have made a genuine clinical impact.

Subjectively, the cards are well received by their target audience. Significantly, 100% of doctors surveyed would recommend the cards to future cohorts.

Lessons learnt The culture of reporting critical incidents has changed over recent years and most members of staff are aware of the importance of this in enabling change. We therefore noted that total number of critical incidents reported has dramatically increased over the last few years. This may have affected our data.

Message for others By encouraging access to guidelines, policies and procedures the cards help prevent clinical errors and promote patient safety. They alleviate stress and improve efficiency, enabling increased patient contact and clinical decision-making.

This cost-effective project could be expanded nationwide across departments and specialties, and our work to identify an objective measure of success will help others in making the case for change in their own departments.

G525(P) CREATING A MEDICATION SAFETY CULTURE IN PICU

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Context Two paediatric intensive care units within the same trust.

Problem Medication errors are a common, avoidable, occurrence, with significant associated morbidity and mortality. The aim of this project was to define the extent of the problem in our units and institute measures to reduce it.

Assessment of problem and analysis of its causes An anonymous audit was performed, which found numerous medication errors, with significant underreporting of errors occurring.

It was felt that the busy nature of the units contributed to the error rate, as staff were often unable to prescribe or administer medicines without interruption, leading to mistakes. There also seemed to be a general culture discouraging incident reporting, as staff felt that they were a tool for blame, with no benefit seen in completing them.

These findings highlighted the need for a culture change, from a 'blame culture' to one of 'fair accountability', with incident reporting seen as a tool for change, and staff given feedback on its positive outcomes. Staff also needed to treat medicine safety as a priority, with time, space and resources dedicated to empowering staff to say no to interruptions during prescribing and administration.

Intervention A dedicated prescribing area was set up, equipped with drug monographs, a BNF, a calculator and headphones to block out extraneous noise. A prescribing guideline was developed, instructing prescribers to use the dedicated area to write prescriptions without interruption. The guideline also instructed nurses to wear special aprons while preparing and administering medicines, protecting them from interruption.

Strategy for change Junior doctor and nursing involvement was a necessity in implementing this change, as they did the majority of the prescribing and administering. "Safety Champions" at each site were tasked with disseminating information, promoting good prescribing and administration habits and leading on-going audits.

Plans were disseminated to staff by email, in clinical practice meetings and through a poster campaign, including messages empowering staff to say no to interruptions.

Staff were also encouraged to report any errors with the promise that incident reports were solely to be used to highlight systematic issues, and that staff would receive feedback on the outcomes of an incident form.

Measurement of improvement Monthly audits of medication errors were carried out, assessing the number and type of errors occurring, and comparing this to the number of electronic incident reports completed.

Effects of changes The audits showed an increase in the proportion of medication errors reported electronically, with an emphasis placed on blame-free reporting, and positive results obtained from resulting investigations, such as highlighting areas in which extra checks may be useful.

However, despite some improvement, underreporting of errors still continues. Staff have been empowered to prescribe and administer medications without interruption, but it remains difficult to accurately measure the effect of this intervention without a reliable screening and reporting method. The monthly audit process has resulted in fatigue from nursing staff, resulting in unreliable reporting, and therefore its usefulness has become limited - a new approach is currently being planned.

Lessons learnt Junior doctor and nursing involvement in attempting to create a medication safety culture has resulted in greater engagement with the process, highlighting the importance of involving all relevant stakeholders in a change project. However, ongoing projects can result in staff fatigue, so methods need to be considered to maintain momentum.

Message for others Incident reporting can be improved through a targeted programme including appropriate feedback and a 'no blame' approach. Successfully implementing this kind of culture change requires a multidisciplinary approach and trainee involvement.

Medication incidents are often related to distraction, but assessing the effect of a project to reduce interruptions requires a reliable method of measuring outcomes.

G526(P) QUALITY IMPROVEMENT PROJECT ON IRON INFUSION THERAPY IN A PAEDIATRIC HAEMODIALYSIS UNIT

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Context The QI project was conducted at the haemodialysis unit in the paediatric nephrology department at Noah's Ark Children's hospital, Cardiff. Stakeholders involved were the medical and nursing staff at the haemodialysis unit caring for children with chronic kidney disease CKD.

Problem Anaemia is prevalent amongst children with CKD. Iron infusion is administered to such children with chronic anaemia. Children on haemodialysis attending the Children Kidney Centre receive iron infusion if they satisfy the criteria based on haemoglobin and serum ferritin values in accordance with departmental guidelines. This involves measurement of C-reactive protein CRP and serum ferritin prior to iron administration. High iron exposure is detrimental to end organ function and hence warrants regular monitoring in conjunction with CRP, another inflammatory marker.

Abstract G526(P) Figure 1

We suspect that some children may be receiving iron infusions despite being iron replete. Also, we may be over investigating these children with anaemia.

Assessment of problem and analysis of its causes We identified all children receiving iron infusion in the haemodialysis unit over an 8 week period. We retrospectively enquired blood investigations done, prior to and after iron infusion. Blood investigations were noted to lag, during pre and post infusion times.

Intervention and Study design We devised a checklist for nursing staff to follow, which looked at set times for measuring haemoglobin, serum ferritin and CRP during the month (at the start of the first and third week of the month) and also tabulating the ferritin values that would trigger frequency of iron infusions. These were aimed to

- prevent iron overloading in patients with chronic anaemia
- regularise the checking of bloods in those receiving iron infusions
- empower the nursing staff to independently take decisions on iron infusion delivery

Strategy for change The following PDSA cycle was employed.

Plan - empower independent decision making on iron infusions by haemodialysis nursing staff

Do - setting up of iron infusion checklist to be followed for every patient who warrants iron infusion for chronic anaemia, with recommendations based on set values of ferritin, CRP and haemoglobin.

Study - analyse adherence to checklist in 3 months time

Act - make appropriate changes to workplace behaviour based on findings of PDSA cycle.

Measurement of improvement The measurement encapsulated all three domains of the Donabedian framework: Structure (investigating chronic anaemia of CKD) + Process (decision to administer iron infusion) = Outcome (blood investigations validity). We analysed 13 patient episodes at the commencement of the project and a total of 19 patient episodes at the end of the improvement cycles.