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Bring on the weekend - Improving the quality of junior doctor weekend handover

Alan George Mackenzie Jardine, Tristan Page, Rob Bethune, Philippa Mourant, Priya Deol, Caitlin Bowden, Mark Dahill, Claudia Mische, Naomi Cornish, Victoria Sanders, Joanne Lee, Rob Bethune
RUH Bath, England, UK

Abstract

While it is widely recognised that communication and handover are a fundamental component in providing safe clinical care for hospital patients (1,2.3). The Royal College of Physicians found that the majority of hospital doctors are dissatisfied with the standard of their handovers (4). These findings were mirrored by the junior staff at the Royal United Hospital, who felt that the weekend handover was inadequate, and detrimental to patient safety.

A group of eight junior doctors at the Royal United Hospital, Bath utilised The Model For Improvement to systematically analyse and improve various aspects of the weekend handover system. Handover sheets from a subset of wards were assessed to observe direct effects of staged interventions over a nine month period, allowing small-scale testing prior to widespread implementation of a standardised intranet-based weekend handover. The effects of interventions were evaluated using a predesigned scoring system and data was collected continuously throughout the project.

Over a nine month period the quality of handovers improved significantly from 76% to 93% ($p < 0.01$): a success which was supported by a 100% improvement in formal feedback collected from hospital doctors and highlighted by the desire of senior staff and directors to implement the system throughout the trust. Using The Model For Improvement a group of junior doctors were able to introduce and develop a standardised weekend handover system that met their requirements. A structured, efficient and auditable system has been successfully produced which improves the quality and safety of patient care.

Problem

Weekend handover of ward based patients at the Royal United Hospital (RUH), Bath, lacked structure and organisation. Under the original system it was the role of the junior doctors working on each ward to generate a list of jobs to be completed over the course of the weekend - ranging from routine blood tests to patient reviews. These lists would be left in the medical or surgical admissions unit on a Friday evening, ready for the doctor covering the wards to collect on Saturday morning. There was neither a standardised form to be completed or guidance on what details to provide, nor was there any backup or record of the jobs to be completed. As a result handovers varied significantly in format, detail, appropriateness and ultimately safety.

Every weekend junior doctors working on ward cover were met with the same problems: lack of patient identifiers, insufficient detail to allow appropriate prioritisation, illegible handwriting, poor description of the job to be executed, inadequate guidance on how to act upon certain findings, incorrect location of the patient and excessive pieces of paper to carry (Fig. 4). As a consequence, doctors were finding that they had insufficient time to review all their patients and complete all their jobs. Many critical jobs were missed causing the doctors a great deal of stress and putting patients' safety at risk.

Background

Like any hospital, weekend ward cover shifts at the RUH are difficult and intense with three foundation year one (FY1) trainees and two senior house officer's (SHOs) providing ward cover to 25 wards and over 500 patients. Issues and concerns previously raised regarding the structure of weekend cover have been identified: insufficient number of doctors, inaccurate and inappropriate handover of patients and the suggestion that patient safety was compromised.

Both informal and formal questioning carried out revealed that all doctors working at FY1 level felt that a well structured, standardised handover to weekend staff would improve their ability to manage these difficult shifts and improve the level of care they could provide. Implementation of a structured proforma for weekend handover was previously attempted at the RUH with little success. Unfortunately we were unable to analyse why this was unsuccessful due to the small scale of the project. As a group the need for change was identified after experiencing several weekend ward cover shifts first-hand. This quality improvement project was embarked upon with the support and guidance of a senior registrar and two SHOs.

Baseline Measurement

Prior to making any change to the weekend handover system we agreed to take two baseline measurements. Firstly, a survey on all FY1 doctors, asking them how satisfied they were with the procedure for weekend handover, and how they felt it impacted on patient safety (Fig. 5 and 6). Secondly, a simple, standardised scoring system for each weekend handover job was constructed. (Fig.1) The elements of the handover deemed most important in outlining a concise, manageable job in a manner that allowed the weekend doctor to safely and efficiently interpret the urgency of the job and execute task, were scored. These elements were: patient identifiers (name, date of birth, hospital number), patient location, the background of the patients' past medical history and management, a clear description of the job and a clear action plan.

Samples of handovers from five different wards were randomly selected and marked using our scoring system. This same scoring system was used to score handovers every weekend as interventions were gradually implemented.

See supplementary file: ds2326.docx - "fig.a"

Design

The principle intervention was to design a standardised paper proforma for weekend handover. This was discussed as a team and the content and layout of our provisional proforma was decided upon before creating it using an Excel file. Multiple hard copies of the standardised proforma were produced and distributed amongst a cohort of both medical and surgical wards.

Following the implementation of the proforma, data was collected using the scoring scheme and informal feedback from colleagues before holding further discussions on how best to improve the proforma. This was then amended and the document re-distributed amongst the wards. This cycle was repeated several times until near perfect scores and excellent feedback from peers was being achieved (Fig. 7).

The aim was to then make the proforma available on the hospital intranet, thus making it accessible to any doctor at any computer within the hospital and allowing patient information to be typed or copied from ward list documents. This was again met with positive feedback.

Reflecting on the success of the intranet-available proforma, a plan was developed to achieve an entirely computer based handover system using the hospital's own electronic patient record system, Millennium. This would improve several aspects of the weekend handover: handovers would be typed and therefore legible, less paper would be needed making it more economical and less cumbersome. Up to date patient identifiers and location would be updated automatically, jobs could be instantly organised in order of the ward on which they were located. Also, handovers would be easily reproducible if lost or damaged and importantly there would be a record kept of handover jobs for audit and safety purposes.

The hospital's IT team assisted and the handover proforma was integrated into Millennium (the hospital computer system). This had a huge number of benefits. Firstly it addressed all the issues listed above and in addition to this, allowed other doctors to view weekend lists; this was particularly well received by senior staff that are able to observe the proposed management of their patients over the weekend.

Strategy

Cycle 1:

Plan: Assess the current handover system and identify areas in need of improvement.

Do: Focus group held to generate ideas on how to improve handover system

Study: Analysis of outcomes and opinions focus group.

Act: Formation of the components that were deemed essential to the safe handover of a weekend job and how to improve the efficiency and safety of the weekend handover system overall

Cycle 2:

Plan: Generate a way to collect baseline data.

Do: (1) A simple questionnaire was distributed to all foundation year trainees within the trust asking 2 questions: 'How do you rate the weekend handover system?' and 'How do you rate the weekend handover with regard to patient safety?' (2) A standardised scoring system was created which marked each handover job out of a ten with a point allocated for ten separate components including patient identifiers, location, background, a clearly defined job and a clearly defined action plan. This scoring system was tested on a small cohort of jobs handed over on a single ward.

Study: Baseline data revealed that the vast majority of doctors felt that the weekend handover system was not acceptable and that patient safety was compromised as a result. The scoring system failed to assess legibility of the handover.

Act: Include legibility in the handover score. Get baseline data from a cohort of wards.

Cycle 3:

Plan: Score all jobs handed over on ten wards - these ten wards will represent our cohort and this would give us the baseline data.

Do: Scored all jobs on five wards

Study: Scores obtained revealed a large area for improvement

Act: First intervention – standardised paper proforma.

Cycle 4:

Plan: Generate a standardised proforma

Do: A paper proforma was generated with headings to direct the author to the information we had assessed to be essential to a good handover job. We then distributed numerous copies among the cohort of wards we were testing.

Study: Noticeable improvement in scores. Handover proformas being used on wards where we had not distributed them. Informal feedback revealed that the text boxes were not large enough for certain fields. Still concerns about legibility.

Act: Improve the layout of the proforma and adjust size of text fields to reflect the amount of information that would be likely to be inserted.

Cycle 5:

Plan: Improve the layout of the proforma.

Do: By producing a landscape format we found that more information could be included without increasing the amount of paper required. Text fields were adjusted to reflect the necessary amount of space.

Study: Positive feedback regarding changes to the proforma. Further feedback reported that there were often no proformas to be found on the wards, exacerbated by the fact that they were finding their way onto other wards. Only a minority choosing to type their handover.

Act: Upload a copy to a computer on each ward to improve accessibility and allow jobs to be typed with the aim to achieve improved legibility. Encourage typed handovers.

Cycle 6:

Plan: Upload copy of the proforma to a computer on each ward.

Do: A copy was uploaded onto one or two desktops on each ward.

Study: Improved accessibility. Requests from other wards to have a copy on their desktop.

Act: Improve accessibility.

Cycle 7:

Plan: To make the handover proforma available on the hospital intranet and therefore accessible to everyone in the trust.

Do: Discussions with the IT department were held and the document was uploaded onto the intranet. This was then communicated across the hospital by distributing posters, sending mass emails and speaking at junior doctor teaching.

Study: Increased uptake of the improved weekend handover proforma throughout the hospital. Still concerns about legibility and lists being lost with no back up.

Act: Improve legibility, further improve accessibility, efficiency and provide back-up.

Cycle 8:

Plan: Incorporate handover proforma into the Hospital's electronic medical system 'Millennium' which contains patient details, live location, past medical history, allergies, their previous paper work including discharge summaries, copies of histology results and radiology reports.

Do: The IT team incorporated the handover proforma into the internal system allowing users to create a handover job for any patient from any hospital computer. These jobs are then automatically ordered by ward and organised into groups based on the doctor who is responsible for them.

Study: This system is due to go live in October 2013.

Results

Using the standardised scoring system throughout measurements of the quality of the weekend handover were made across a range of inpatient wards over an eight month period to the point of implementation of the Millennium-based system (up to and including PDSA cycle 7) . The quality of weekend handover improved significantly from 76% to 93% ($p < 0.01$) (Fig. 8). At this stage a re-survey was carried out to assess the opinions of fellow foundation year one doctors revealed a stark improvement in the perceived efficacy and safety of the weekend handover (Fig. 9 and Fig. 10). The Millennium-based handover will go into circulation towards the end of October 2013, its success will be monitored and developments with the system will continue.

See supplementary file: ds2359.doc - "BMA_Quality_Improvement figb"

Lessons and Limitations

This project was started as a group of new foundation doctors and under the guidance of mentors they developed an array of skills and learnt some important and useful lessons.

Initially, there were reservations about whether the structure of the hospital handover could be influenced and developed by a group of junior doctors. Over the course of the year skills have been developed with particular reference to identifying a key problem, assessing areas for improvement and most importantly implementing change. A greater understanding of hospital management and who is responsible for the implementation of change has been achieved and ultimately it has become evident that junior doctors can be a part of that change.

It is easy for junior doctors to accept the faults in the system and to adapt practice to accommodate for these. It seems daunting to challenge the practice of seniors and predecessors, however, it is important to challenge these faults and improve practice in order to

provide the best quality of patient care.

The value and importance of gaining constructive feedback from colleagues involved in the weekend handover in order to make useful changes was a key lesson learnt by carrying out this project. Involving colleagues early on helped to highlight potential problem areas with any changes made so these could be rectified before implementing further change.

This project has given us all the opportunity to develop our team working skills and our ability to work as a unit has driven our motivation and has been key to the success we have achieved.

There were several limitations encountered during the project. Data was collected every weekend by alternate authors and a system was required which could be accessed by all team members where data was kept and update from remote sites were possible. In order to do this Google account was used, however this was not accessible from hospital computers, which meant that data had to be updated from home. This also meant the data could not be viewed and discussed at meetings.

The authors own time was used to complete this project and with shift-based rotas it meant the team were not able to attend all focus meetings and inevitably some information may not have been communicated to the whole team. An attempt to overcome this was made by emailing up to date and accurate minutes of each meeting promptly after.

Time constraints meant that collection and analysis of data could only be done on a limited amount of wards. Although it may have been more statistically significant if data had been collected on a larger scale, the time constraints did not prevent identification of key areas of improvement with handover.

There is a possibility for measurement bias when the authors were completing the weekend handover proformas due to awareness of the scoring criteria. However, the authors were only a small proportion of the people completing the proformas so bias should be minimal.

The electronic integration of the proforma is specific to the electronic patient record system used at the RUH, however the key issues identified and the proforma created could be translated to other areas and trusts.

Conclusion

This foundation doctor led project was embarked upon because a significant problem with the junior doctor weekend handover was identified and there was a strong desire to address this to improve communication and patient safety.

This has resulted in the creation of a robust and highly improved system of weekend handover at the RUH, Bath. A potentially harmful system has been successfully altered to a safer, more efficient and more accepted handover. The integration into the electronic patient record, which will be implemented Trust-wide, has allowed it to be easily accessible to the on call team members from any trust computer, provided secure storage of data and will remain a permanent part of the electronic patient record. Its role is at the core of patient safety and good communication and its positive effect is certain to ensure its sustainability and success in the future.

The feedback received from all hospital staff has far exceeded our expectations. This project has the approval of the Quality Board at the RUH and further resources have been allocated to it to ensure the system was implemented in time for the arrival of new staff.

This project demonstrates how quality improvement projects undertaken by junior doctors can improve quality and patient safety and the efficient handover tool created will assist in providing excellent communication and ultimately a higher standard of patient care and safety.

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Declaration of interests

Nothing to declare

Acknowledgements

Mr Rob Bethune for his continued guidance and support throughout this project.

Are there three patient identifiers: Full name, date of birth, hospital number
Is the job fully legible?
Is the patient background outlined?
Is the specific job outlined?
Are there clear instructions or a plan of action based on the job request?
Is it time specific? i.e day/degree of urgency
If job is a blood request-has a blood sticker been printed?

Figure 1: Scoring scheme used for the baseline data

Weekend Date	**10 – 12th November**	**15th – 16th December**	**22nd-23rd December**	**19th – 20th January**
	%	*%*	*%*	*%*
3 Patient identifiers: Full Name, DOB, Hosp No.	**50**	**53**	**57**	**46**
Job fully legible	**100**	**78**	**91**	**82**
Patient background	**25**	**67**	**36**	**39**
Specific job outlined	**75**	**71**	**73**	**93**
Instruction/Plan based on job request	**0**	**64**	**55**	**54**
Time Specific, i.e day/degree of urgency	**100**	**89**	**89**	**93**
If job is a blood request-has a blood sticker been printed?	**75**	**93**	**86**	
Mean score as a percentage	**60.7**	**73. 6**	**69.6**	**67.8**

Figure 2: Baseline data from the surgical wards

Weekend Date	**10th-12th November**	**15th-16th December**	**12th-13th January**	**19th-20th January**
	%	*%*	*%*	*%*
3 Patient identifiers: Full Name, DOB, Hosp No.	**50**	**61**	**58**	**49**

List fully legible	**90**	**97**	**100**	**85**
Patient background	**60**	**95**	**82**	**62**
Specific job outlined	**60**	**82**	**93**	**72**
Instruction/Plan based on job request	**20**	**58**	**64**	**69**
Time Specific, i.e degree of urgency	**100**	**95**	**93**	**100**
If job is a blood request-has a blood sticker been printed?	**43**	**89**	**98**	
Mean score as a percentage	**60.4**	**82.4**	**84**	**72.8**

Figure 3: Baseline data from the medical wards

Fig. 5: Survery question 1: 'How do you rate the weekend handover system?'

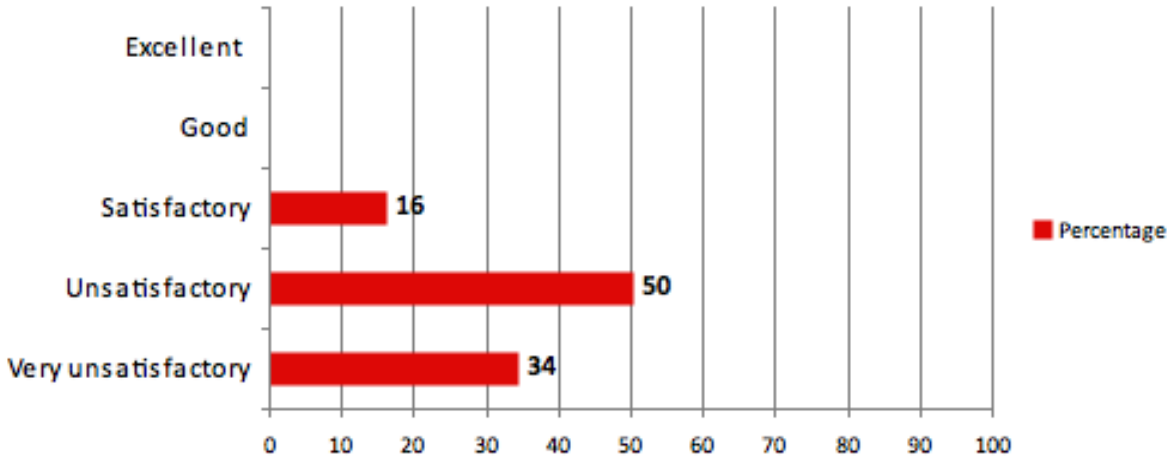


Fig. 6: How do you rate the weekend handover with regard to patient safety?

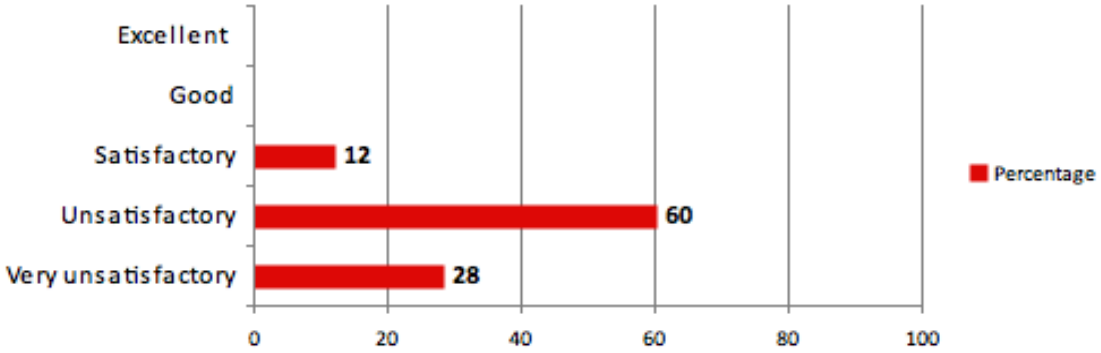


Fig 7: An Example of the new handover proforma.

Ward: Waterhouse **Name**: WB	**Cover 1** **Hospital Number**:1178430	**Date 15/03/13** **DOB 12/03/1934**	**Bed No:2.4**
BACKGROUND	**CURRENT PROBLEM**	**SPECIFIC JOB**	**ACTION PLAN**
COPD Ischaemic Heart Disease – MI 2010	Admitted with infective exacerbation of COPD On IV co-amoxiclav and clarithromycin	Please take bloods – FBC, U+Es, CRP	Please check that inflammatory markers are improving – if not please, r/v and discuss with microbiology Prescribe more IV fluids
Day Scheduled: (delete as appropriate)	Sunday	**Time Scheduled:** (delete as appropriate)	Any time Specific Time:

Fig 8. Results of standardised scoring system over time

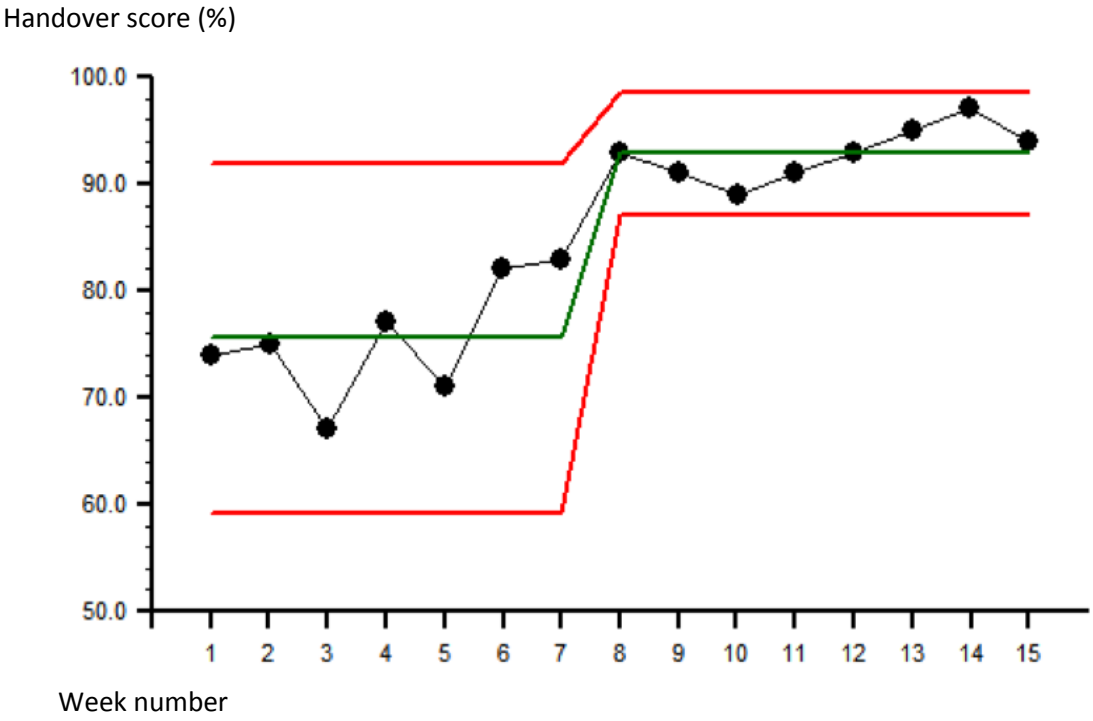


Fig. 9: Re-survey, question 1: 'How do you rate the weekend handover system?'

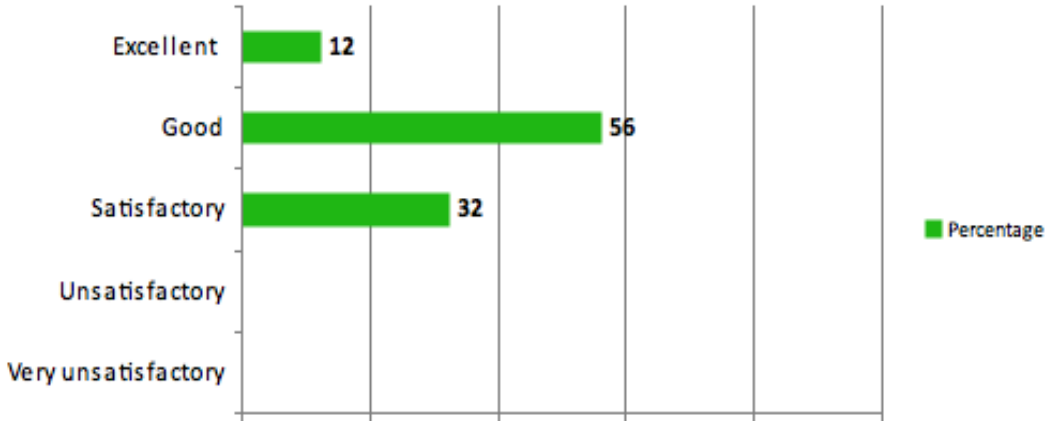
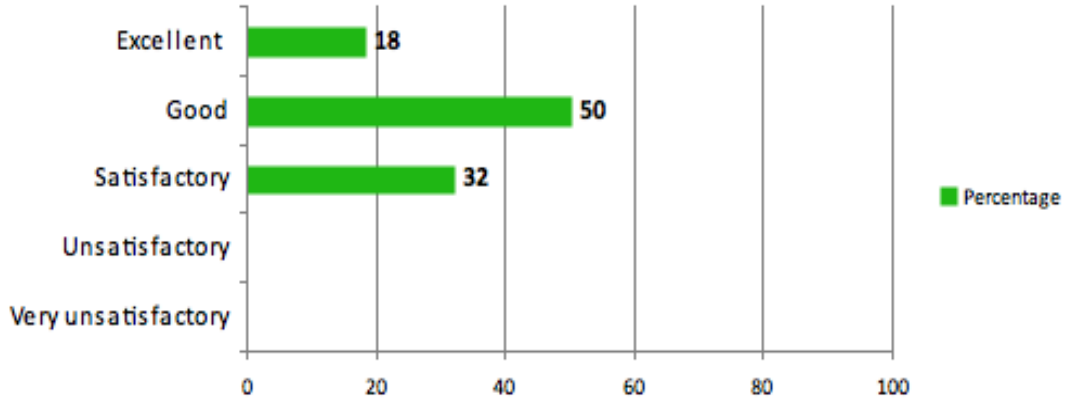


Fig.10: Re-survey, question 2: 'How do you rate the weekend handover with regard to patient safety?'



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Emergency suction equipment: barriers to use and effective interventions

Alexander Carpenter, Laura Glenn

Abstract

Both investigators had personally experienced situations when they were let down by emergency suctioning equipment on the wards: due to either lack of, or operator inability to use, equipment. Failings in emergency suction have been highlighted in a recent National Patient Safety Agency signal.

We focused on improving the usability of cardiac arrest trolley suction: a complex process involving turning a small, hidden lever. We produced three clearly visible bright labels which provided simple prompts to the operator.

Two wards and two sampling periods were used in a randomised controlled design. Medical, nursing and allied healthcare staff participated. A scenario of a vomiting patient was given and staff were asked to use emergency suction. This was timed.

On the control ward, 5/10 staff members were able to successfully suction on day 1 and the mean time spent trying to activate suction was 43 seconds. On the second sampling day 6 were able to successfully suction and the mean time taken was 50 seconds. On the intervention ward, 7/10 staff members were able to suction with a mean time of 53 seconds spent. Post-intervention, all 10 staff members successfully suctioned with an average time of 30 seconds. The intervention gathered strongly positive feedback. These interventions are being incorporated into sustainable systems changes.

Poor equipment design is a needless distraction during an emergency in a busy ward setting. Simple, innovative solutions provide assistance in a pressured situation. Ideally these would become uniform and lead to a culture shift towards simple, intuitive design.

Problem

Emergency suction is a fundamental item of equipment which should be readily available for use to all healthcare professionals in the hospital setting. Use of emergency suction can be vital in an emergency, for example when dealing with vomit or secretions. It is natural to assume that emergency suction would be maintained in a state of readiness and that the equipment would be, by its nature, intuitive to use. Both of the investigators however had had personal experiences where they were let down by the inability of ward staff to effectively use emergency suction, either due to deficiencies in equipment readiness or operator inability.

Background

In 2011 the National Patient Safety Agency(NPSA) released a signal highlighting 104 serious incidents between 2005-2009 involving emergency airway suctioning systems. Common causes included incompletely or incorrectly set up equipment.

In most hospital ward environments, there are two types of airway suctioning devices: wall-mounted suction and emergency suctioning equipment usually located on the cardiac arrest trolley. It was our observation that the vast majority of wall-mounted suction units were not kept in a state of readiness. The protocol for preparing the bed space required nursing staff to replace suction and oxygen fittings "if necessary" only; and what qualified as "necessary" was not stated. Equally, operating the cardiac arrest trolley emergency suction involved several different complex steps, which were not inherently obvious to the operator.

Baseline Measurement

Initially, the investigators wished to quantify the readiness of wall-mounted suction. Adjacent to the patient's bed space, this would naturally be the first port of call in an emergency requiring suctioning equipment. Across all of our department's base wards, only 14% (n=8) of wall mounted suction units (total of 131) were ready for use, with 70% having some but not all parts present, 10% having none of the required parts and 6% having all parts but unconnected.

The investigators then wished to measure the ability of ward staff to use emergency crash trolley suction units. Two wards were visited. On each ward, ten staff members were asked to participate in a quick test. Staff members included a full range of allied healthcare professionals including healthcare assistants, staff nurses, ward sisters, physiotherapists and doctors of all grades.

The scenario given was that of a patient who is vomiting and choking. The staff member is asked to operate the crash trolley suction unit. We then timed how long it took each staff member to correctly activate the suction unit (a complex process involving

multiple non-intuitive steps). On the two wards, 4/10 and 5/10 respectively were unable to use the suction unit at all. Average time to activation was 47.8 seconds. Comments recorded included feeling unfamiliar and unprepared with such equipment, frustration and occasionally panic at using it in a time-pressured situation.

See supplementary file: baseline.pptx

Design

When measuring crash trolley suction use it became clear that users were finding it difficult to perform the various tasks necessary to correctly operate the suction unit. These steps included opening a valve on the oxygen cylinder before turning a circular suction knob. The oxygen cylinder valve is opened by a lever which is not easily seen from the position of the operator.

We designed three clear bright yellow stickers using a cheap handheld label printer. One sticker was placed on top of the suction unit pressure gauge and read "Turn O2 lever on". The second sticker was placed on both sides of the oxygen cylinder lever and read "Turn", with an arrow to indication the direction the lever should be turned. The third sticker was attached to the circular suction knob and simply read "Suction".

This intervention was discussed with the hospital equipment pool who maintained the oxygen cylinders. They felt that if it reduced error and improved usability that they could be placed on the oxygen cylinders or suction units as they circulated through their departments for maintenance. Within a short space of time all equipment in circulation would be labelled and new items would be labelled within a short space of time. This would be sustainable as the labels should last for a long time and the labelling process would be incorporated as part of existing equipment maintenance processes. Its cost in terms of both time and resources necessary is minimal. It may even save time in unnecessary equipment pool calls following incidents of incorrect usage.

Strategy

PDSA Cycle 1: Following baseline testing on two wards, we trialled the intervention on one ward, using ten staff members (with the other ward kept as a control ward). The intervention stickers led to a significant improvement in both the proportion of staff able to use the emergency suction unit (all able to use compared to only 6/10 on control ward) as well improving efficiency of use (mean time to operate 29.9 seconds compared with 50.3 on control ward).

See supplementary file: PDSA Cycles_suction.doc

Post-Measurement

Our study design was randomised and controlled: we randomly selected two wards with a similar patient mix and randomly allocated one as control and one as intervention. We had two testing periods - pre- and post-intervention. This study design was chosen to attempt to eliminate the effect of innate differences between the wards as well as account for the effect of practise from one testing period to the next. We could look at the difference between testing periods on both wards to gauge the true effect of the intervention.

10 staff members were tested on each ward. They were given the scenario of a choking patient and asked to operate the crash trolley suctioning equipment.

In the pre-intervention testing, 7/3 and 5/5 of staff members on the intervention and control wards, respectively, were able to use the suction unit. They took a mean 53.1 and 42.5 seconds to do this. Doctors and allied healthcare professionals were the slowest, taking an average of 59 and 60 seconds, respectively. Nurses however took an average of 32 seconds to operate the suction, potentially due to the responsibility for nurses working night shifts to check the equipment in the early hours of the morning.

Feedback recorded included the following comments:
'Nothing's happening! Why has it run out?'
'Where is it? Where is it?'
'I've panicked at a crash using one of these before!'
'Hopefully someone who knows would be around!'

Post intervention, all of the staff members in the intervention group were able to use the suction unit, and 7/10 of those in the control ward. Mean time taken to use the unit was 29.9 and 50.3 seconds, respectively. There was an improvement across all types of healthcare professional with nursing staff improving the most and medical staff improving the least following the intervention.

Comments on the intervention ward included:
'Never used this before.'
'OK, turn lever...which lever? Oh, that lever! It works!'
'Much easier!'
'Really good, clear labels - I've never used it before as only work days!'
'I would absolutely welcome this on my ward permanently.'
'I've never used it before. Has it gone dead? Oh, what's this?'
'I felt the stickers make it really obvious.'

See supplementary file: results.pptx

Lessons and Limitations

It is difficult to change any system which has been longstanding and affects many clinical areas and members of staff. We did not want to alienate staff by making them feel that by pointing out deficiencies we were criticising them, their staff or wards. We strove to create a culture during the project of "all of us working together to improve systems". When testing with staff who were unable to use suction equipment, the risk was that they they might become frustrated or embarrassed. We emphasised to them that they were this was not the fault of individuals but a problem with a system and with unintuitive equipment. We reassured them that we had not fared any better. We knew there was a problem and that was what we were trying to remedy. By being a part of our project, they were now a part of finding a solution.

One obvious limitation of this project so far is its small scale - two wards of ten staff members tested on two occasions. The small numbers made the usefulness of statistical tests of significance dubious. It serves the purpose of a pilot study and provides useful indicators. Large scale testing would be ideal and will be a long-term aspiration.

This quality improvement project is only useful if it is sustainable. No matter what we found or how many people we disseminated our findings to, once we leave our organisation the ideas may be long forgotten. Our energies will now be directed into incorporating our intervention into standard practice and, if this shows a benefit, keeping it there. It will hopefully provide a model which can be emulated elsewhere.

Conclusion

This project came about due to the personal frustrations of two foundation trainees attempting to use emergency suctioning equipment in desperate situations. What seemed initially to be isolated problems, we quickly learnt reflected problems which affected many more people.

Our problems accessing wall-mounted suction was not just "bad luck" - a vast lack of wall mounted suction afflicted our building - we measured it, proved it, and now senior staff in our trust have taken notice and are taking steps to improve this. Reasons for this lack included the wording of bed space preparation forms - solved by removing the latter two words from "prepare emergency suction if necessary". Similarly, suction units were not fitted as it led to cleaning audits being failed (suction units gathered dust). This has been addressed and priorities adjusted.

Our personal experiences with being unable to use emergency crash trolley suction were not our fault. As with so many incidents, the problem was not with the individual but with the equipment, with the system. We felt strongly that the equipment was difficult to use and we feel, proved that in our tests - an average of 47.8 seconds taken to operate emergency suction across both wards seems far from ideal, with many staff unable to operate it at all.

We felt that use of this vital piece of equipment should and must be simpler. We felt that even as junior doctors, we could do a better job. So found out what users were supposed to do and we designed three simple bright stickers which spelt it out, and were near-impossible to miss. We thought this would make the equipment easier to use and we tested it under pressure. We showed that it enabled everyone to be able to use the suction. We showed that is also significantly decreased the amount of time it took them to do so. We are now incorporating this labelling into the routine maintenance of the equipment.

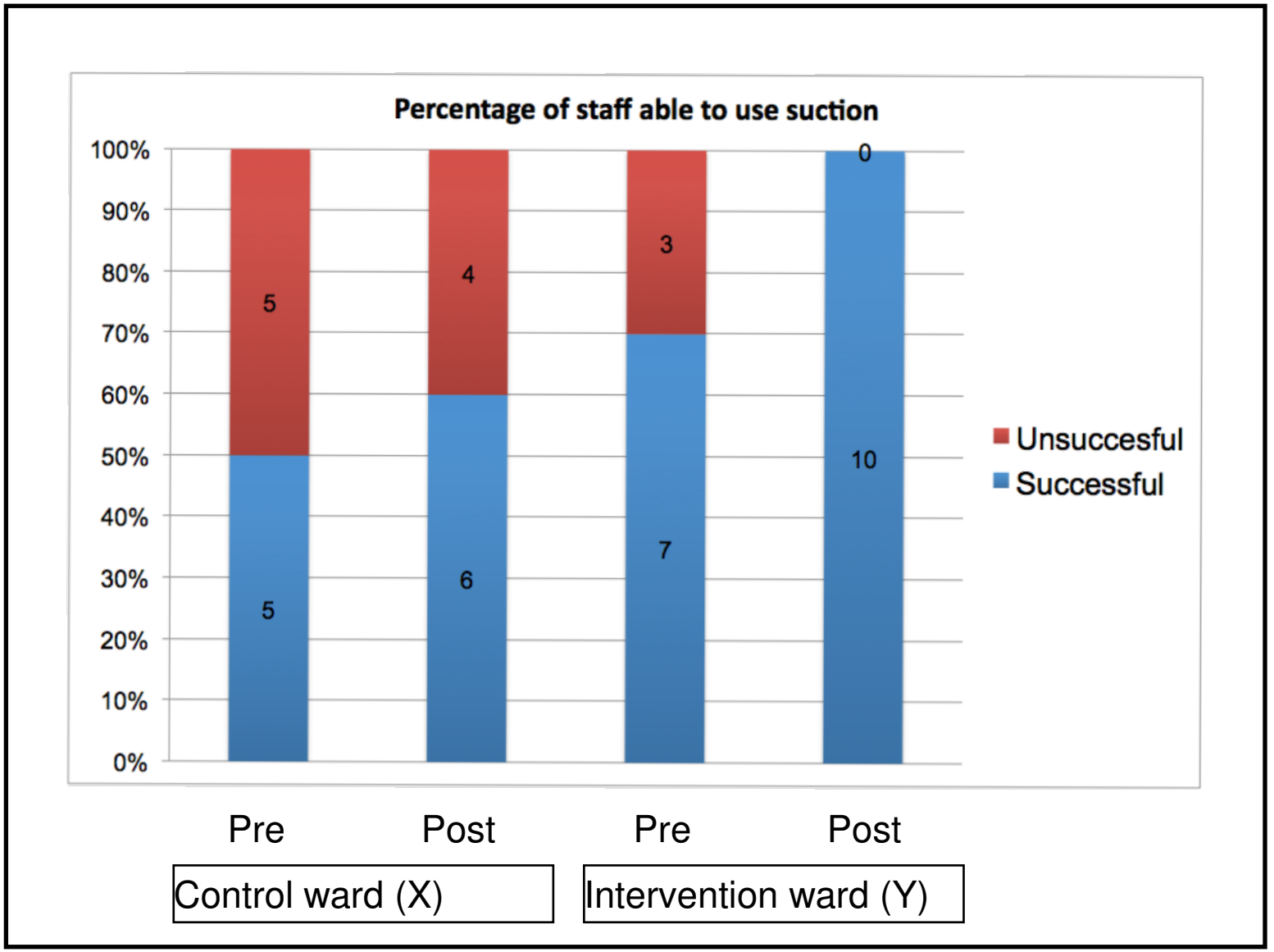
There is nothing elaborate about our project. It is simply the product of personal frustration, and an inner hunch that things could be done better; things could be simpler. We found that what seemed an individual frustration was one shared across the full range of healthcare professionals regardless of role or experience. We found that a simple intervention made a positive difference and we hope that by rolling it out across the hospital as a sustainable standard, it will have a lasting beneficial effect on patient safety.

References

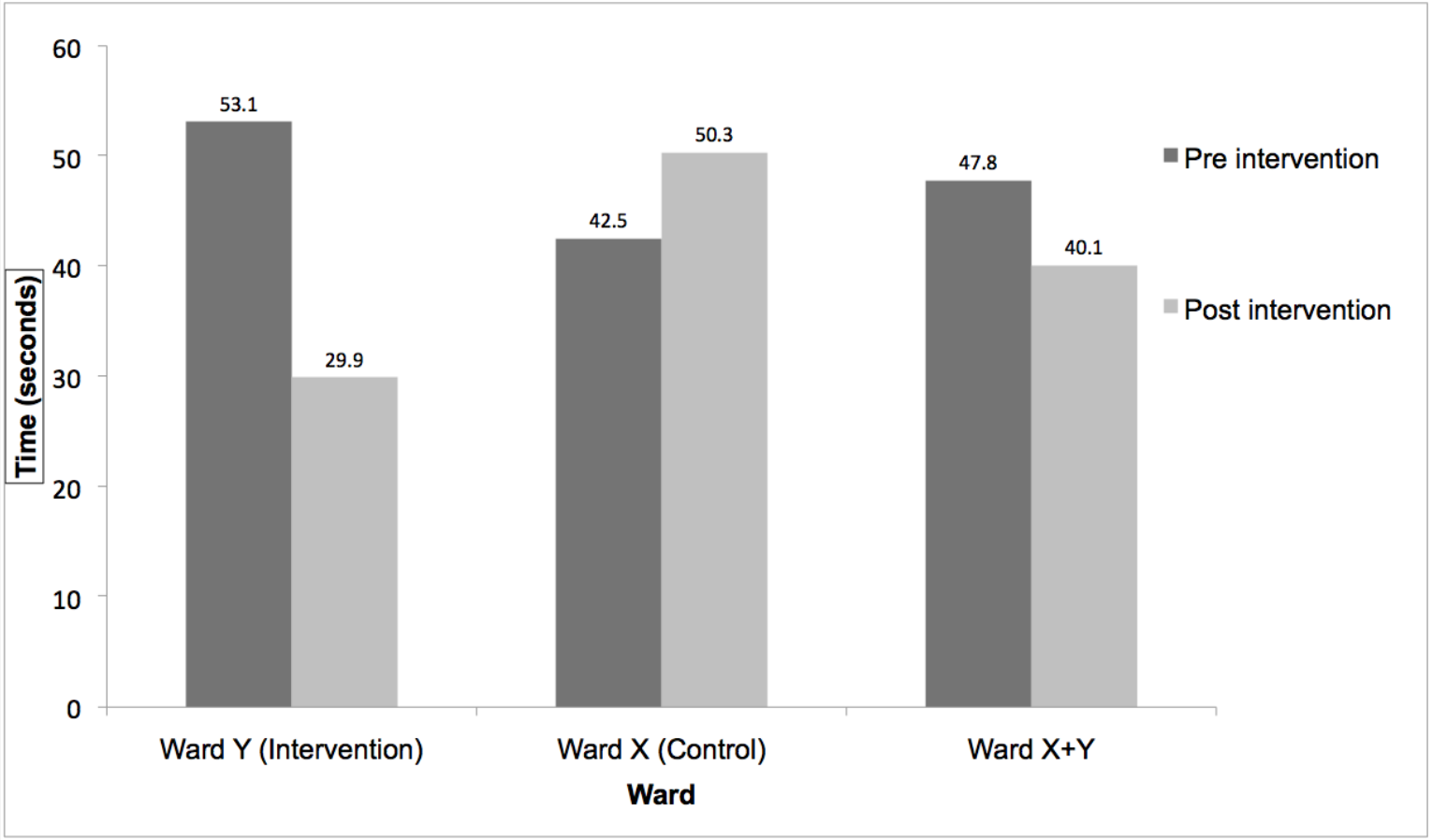
1. National Patient Safety Agency (NPSA): Airway suction equipment patient safety signal. 2011. Available online at: http://www.nrls.npsa.nhs.uk/resources/?entryid45=94845

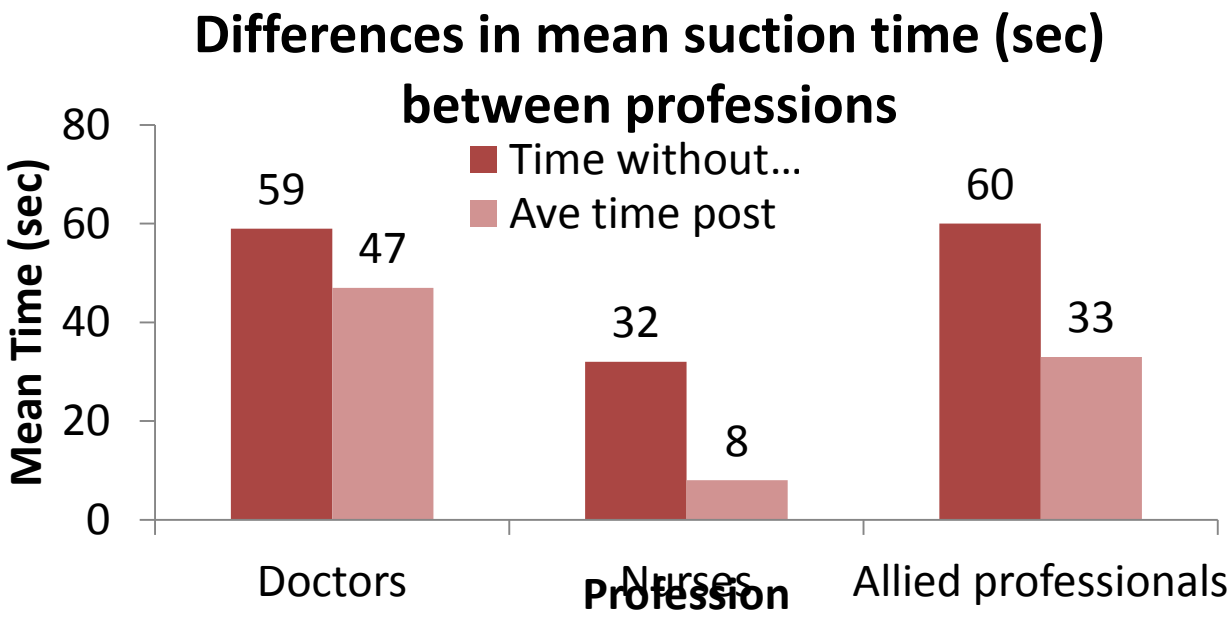
Intervention:
3 stickers

Intervention:
3 stickers


Percentage of staff able to use suction
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
5
5
4
6
3
7
0
10
Unsuccesful
Successful
Pre
Post
Pre
Post
Control ward (X)
Intervention ward (Y)

Mean time (s) pre- and post- intervention on 2 base wards





Pre intervention (without stickers) = 30% of people completing suction within 0-20 seconds

Post intervention (with stickers) = 60% of people completing suction within 0-20seconds

Pre-Intervention

"Hopefully someone who knows would be around"

"Nothing's happening!"

"Why has it run out?"

"Is that the suction? That's just the oxygen isn't it?"

"I've panicked at a crash using one of these before."

Where is it? Where is it?

Post-intervention

"Really good, clear labels - I've never used it before as only work days!" "I would absolutely welcome this on my ward permanently."

"Much easier!"

"Never used this before." "OK, turn lever....which lever? Oh, that lever! It works!"

"I've never used it before...has it gone dead? Oh, what's this?" "I felt the stickers make it really obvious."

BMJ Quality Improvement Programme

PDSA Cycle 1

Aim: what are you trying to accomplish?

Improve the usability of emergency crash trolley suction units. Increase the number of people who are able to successfully activate the suction unit and decrease the amount of time it takes users to do this.

Plan: what will your test be?

Following baseline testing on two wards, the same two wards will be re-tested. Again, ten staff members were given a scenario of a vomiting patient and asked to operate crash trolley suction equipment. On one of these wards, the three intervention stickers will be applied to the suction unit. The other ward will not have any intervention and will serve as a control.

Prediction: what do you think will happen as a result of your test?

We hoped the intervention would increase the number of people who were able to successfully operate the crash trolley suction equipment and decrease the amount of time taken to do this.

Do: what happened when you carried out your test?

As at baseline testing, the control ward test found users puzzled, frustrated and panicked by attempts to operate the suction unit under pressure with four staff members unable to operate it at all, and no decrease in time taken. On the intervention ward however, all staff members (10) were able to operate the suction unit, with a decrease in time taken (mean 53.1 seconds pre intervention reduced to 29.9 seconds post intervention).

Study: how did the results of your test compare with predictions?

We were surprised at the lack of practise effect on the control ward, although both wards had a different set of staff on our two testing dates. As predicted, usability and efficiency of use was improved. We were surprised by the strong positive feedback for the intervention and widespread support from staff which included constructive suggestions for the stickers.

Act: how will you change your previous test in light of what you have learned?

We are striving to incorporate placement of these stickers as part of the standard maintenance procedure for this equipment. As part of the next PDSA cycle we would like to re-test our intervention in another randomised controlled design on a bigger scale (a greater number of wards on a greater number of occasions) and collect more qualititative feedback on how to improve the stickers.

BMJ Quality Improvement Reports

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Improving Patient Safety of Acute Care Lumbar Punctures

Victoria Ormerod
Gloucestershire NHS

Abstract

Lumbar puncture (LP) is a common invasive procedure in the acute medical setting but is not without its risks and complications, making best clinical practice and correct documentation important for patient safety. Previous audit revealed poor levels of consistency in technique and documentation in the acute medical setting, highlighting it as an area for improvement.

This project aims to identify current levels of documentation and improve upon these through the departmental education and the introduction of a documentation tool to create a safer clinical environment for LPs. Gold standards in clinical practice were identified through literature review and national guidelines, establishing 15 key parameters as essential areas for documentation.

Patient notes were retrospectively analysed after LP over a two month period to identify levels of documentation in these areas, and the clinical technique used. Results of this initial audit were presented to the department along with an education session regarding current evidence based best practice for LPs and the important aspects relating to patient safety. A documentation tool was also introduced. A re-audit was then performed of the same parameters and assessing the use of the documentation tool.

Results showed a significant increase in overall documentation from 44% up to 95% after intervention, with 85% of cases using the new proforma. We can conclude that the introduction of a documentation tool and departmental education has significantly improved upon LP documentation in the acute medical setting. This is important for both the protection of medical professionals, as well as patient safety and quality of care, and could be implemented in other clinical environments.

Problem

This audit was carried out within Cheltenham General Hospital (CGH), part of the Gloucestershire NHS Trust in England. Lumbar punctures (LPs) are a common procedure in the acute care department (ACUC) at CGH, usually being performed by middle grade physicians after being trained by seniors.

Previously there was no set method of documenting the LP procedure and consistency was thought to be poor. As staff within the department work on a shift rota with a high turn over of people, there had been some episodes of miscommunication over the procedure and results. It was often difficult for future staff to interpret what had been done, with different elements of the procedure (such as checking contraindications) and results not being documented in a consistent format or location within the notes. This highlighted the documentation of LPs as an area of improvement for both patient safety, to ensure physicians were checking all contraindications and consenting correctly, as well as clinical practice within the team.

Background

The first lumbar puncture (LP) was performed in 1891 by Quincke in order to relieve raised intracranial pressure in children with tuberculous meningitis.(1)

LP has since become a common invasive procedure to analyse cerebrospinal fluid (CSF) in the acute medical setting. This procedure does not come without its risks and complications, making documentation an important aspect of the process for protection of both the patient and physician.

In other areas of medicine, the use of proformas has been shown to improve the quality of documentation and triggers elements of the procedure to be considered by the physician. This makes it much easier for other team members to reflect on the procedure and creates consistency in clinical practice.

Baseline measurement

15 core areas for best practice of lumbar puncture were established using literature review and Royal College of Emergency Medicine guidelines.(2,3) These were then used as the standards for optimal documentation. These were:

- Indication

- Any contraindications

- Consent

- Patient position

- Sterility

- Anaesthetic type

- Anaesthetic dose

- Procedure site

- Needle size or type

- Number of attempts

- Opening pressure

- Any complications

- Post-procedure advice given

- Results documented

- Physician name and grade.

Patient notes were retrospectively reviewed after lumbar puncture over a two month period to establish the documentation of each of these parameters, with the ideal standard set at 100%.

It was found that overall, documentation levels were poor as expected, at 44% average across all of the parameters. Some areas of particular concern were those of "contraindication to the procedure", "patient position", and "post-procedure advice given", which had a 0% documentation rate.

See supplementary file: ds3389.docx - “The Final Documentation Tool”

Design

An initial audit that documentation levels were poor and leading to areas of confusion, so it was highlighted as an area for improvement. The concept of a documentation tool was discussed with colleagues within the department. Consultants and middle grade physicians, who most commonly carry out the procedure, advised upon areas they felt were important to include in documentation. Through talking to various physicians and observing the procedure, I came to realise that there was not a standard way in which LPs were performed, and that many people used their own techniques, not all of which were in line with current best practice. I therefore thought it would be important to include a teaching session into my intervention on current guidelines and best practice.

Due to the shift nature of the workforce in ACUC, one area of potential problem was ensuring the whole team were educated and aware of the interventions. I aimed to overcome this by introducing the documentation tool and a brief outline of the reasoning at daily hand over. In the future, this could be done at departmental induction before trainees begin on their rotation, ensuring that everyone attends.

Strategy

The initial audit was presented at departmental teaching, along with a teaching session on the procedure, current best practice, and the importance of documentation. An initial draft documentation tool was created and introduced to the departmental doctors. Subsequent 'Plan, Do, Study, Act' (PDSA) cycles were used to establish the final documentation tool design.

PDSA cycle 1:

The initial draft documentation tool was introduced to the ACUC department for a one week period. Feedback was then collected during a departmental meeting to establish thoughts and improvement areas from the users. A main factor that was criticised was the location of the forms, which had not been well publicised and was not obvious to the physicians, thus creating a negative impact on use. Also asked for was a clearer description of the needle type used such as 'Whitacre' and 'Quincke', and for the addition of areas to document the level of aseptic technique used and the tests sent for. Despite these not being part of the key areas contained within the audit, it was felt these were useful areas to know and for staff to be aware of what tests results to chase.

After acknowledging the feedback, the documentation tool was appropriately modified to create a second draft.

PDSA cycle 2:

The second draft documentation tool was then reintroduced to the ACUC department in a well known location on the LP equipment trolley. Another week of use was given before meeting with departmental colleagues once again. This provided mainly positive feedback on the modified proforma, with much more enthusiasm to use the tool now that it was felt easier to find. The change highlighted was that the area for documenting the patient details was not large enough to contain a hospital sticker, which was often the easiest way of transferring this information. This area was subsequently re-designed to be compatible with hospital stickers.

This final documentation tool was then introduced to the department. A re-audit was performed over a two month period, looking at the documentation levels of the initial core parameters and also the level of use of the documentation tool.

Results

A total of 11 cases were retrospectively reviewed over a two month period to establish the initial level of documentation. This was found to be poor, as expected, averaging 44% across all the key parameters.

After the action plan had been implemented with departmental teaching and the introduction of a documentation tool, the overall level of documentation was found to dramatically increased to an average of 95%, with 82% of reviewed cases using the new documentation tool.

Those that did use the documentation tool had even better levels of documentation than those that did not, highlighting the importance

of the proforma as a stimulus for the procedure.

Cases using the profoma reached a 100% level of documentation across 14/15 key parameters, with the exception being the ‘dose of anaesthetic’ used, which although vastly improved, was only documented in 78% of cases. One possible reason for this is in the design of the proforma, making it easy to overlook this parameter.

See supplementary file: ds3284.png - “Graph showing documentation levels of the core areas before and after implementation of the documentation tool”

Lessons and limitations

Introduction of the documentation tool and departmental education vastly improved the documentation of lumbar punctures in acute medicine. As well as this, feedback from staff was positive for clarifying reflection on the procedure and results and prompting them to check necessary areas prior to the procedure.

This project has shown that there are inconsistencies in both technique and documentation of LPs and has supported documentation proformas as a way of standardising these areas.

One problem encountered was ensuring the whole department was educated on the topic and aware of the proforma, given the shift patterns of staff. This was partly overcome through separate informal introductions at handover over a week long period. However, it may still have been a factor in the few cases where the documentation tool was not used after introduction.

In the future, the documentation tool is due to be created on a more hospital wide basis by the trust, and will be introduced at departmental induction, along with a small teaching session on practical lumbar puncture technique. This will ensure that everyone receives the same level of education and awareness.

Conclusion

Lumbar puncture documentation levels have been significantly improved through the introduction of a documentation tool and departmental education in the acute medical unit. This is an important process for optimising clinical practice, team communication, and patient safety, and is a method which will now be implemented across the hospital and could be considered for other acute units.

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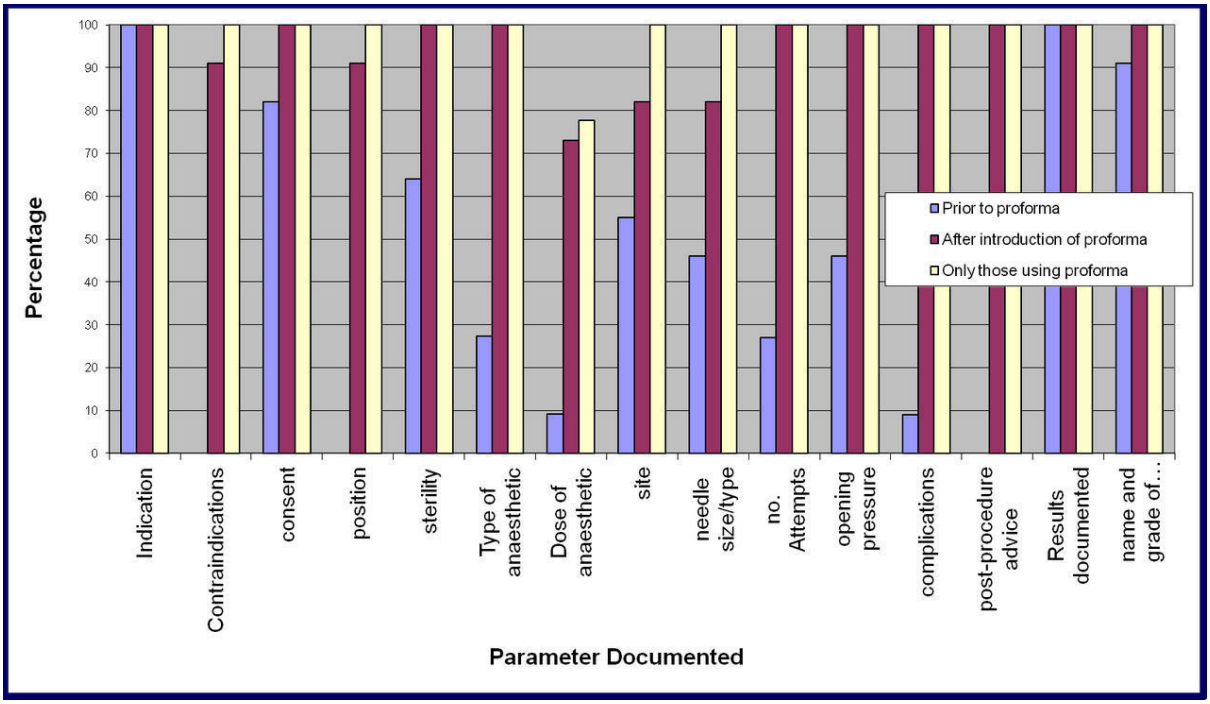
Declaration of interests

None declared

Acknowledgements

Christopher Custard, Fiona Lockyer.


Percentage
100
90
80
70
60
50
40
30
20
10
0
Prior to proforma
After introduction of proforma
Only those using proforma
Indication
Contraindications
consent
position
sterility
Type of anaesthetic
Dose of anaesthetic
site
needle size/type
no. Attempts
opening pressure
complications
post-procedure advice
Results documented
name and grade of…
Parameter Documented

CGH ACUC

LUMBAR PUNCTURE PROCEDURE

Date:	Time:

PATIENT INFORMATION / STICKER

Patient Name:		
Address:	**DOB:**	**MRN:**

PRE-PROCEDURE

Indication for LP:				
Pre-procedure	❑ CT scan	❑ Fundoscopy	❑ Platelets checked	❑ Clotting checked
Results of above:				
Consent gained	❑ Verbal	❑ Written		

PROCEDURE

Site :				
Aseptic technique:	❑ 2%chlorhexidine	❑ Mask	❑ Gown	
Local anesthetic and volume:				
Needle Type	❑ Quincke	❑ Pencil point (whittaker)		
Needle size:				
Number of attempts:				
Traumatic tap:	❑ Yes	❑ No		
Opening pressure :			**Closing pressure**:	
Number of bottles:				
Volume removed:				
Appearance:	❑ Clear	❑ Turbid	❑ Blood stained	❑ other (state)
Samples sent for:	❑ Billirubin photospectometry	❑ Biochemistry	❑ Microbiology	❑ cytology ❑other (state)
Bottles for above:				
Complications/ notes :				

POST- PROCEDURE

Post procedural advice given:	
Performing physician:	**Signed:**
RESULTS:	

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Improving the accessibility of trust guidelines for junior doctors at North Bristol NHS Trust

Madelaine Tarrant, Calum Honeyman, Alex Aquilina, Katie Young
North Bristol NHS Trust

Abstract

Medicine is becoming increasingly protocol driven. This provides a standardised format for doctors to deliver best practice, especially in the acute setting.

40 junior doctors were asked to locate three Trust guidelines: venous thromboembolism (VTE) prophylaxis; antibiotic prescribing; and management of upper gastrointestinal bleed (UGIB). For each doctor the time taken and number of mouse clicks to access each guideline was recorded. Following successful redesign of the Trust intranet we completed a re-audit.

Initial results showed 48% of doctors were unable to locate the UGIB or the VTE guidelines within 5 min. For those who were able to locate the guidelines it took an average of 111 sec and 17 mouse clicks. 100% of doctors were able to locate the antibiotic guidelines in 12 sec and with two clicks. These are accessible via a single port of access.

Following our redesign of the Trust intranet 100% of doctors located all three guidelines in an average time of 7.2 sec and in 2.1 clicks. Improvement in access to VTE prophylaxis and UGIB was statistically significant (p=0.001).

Redesigning our Trust intranet homepage has significantly improved the accessibility of acute surgical and medical guidelines.

Problem

At North Bristol NHS Trust (NBT) there were concerns regarding the accessibility of Trust guidelines to junior doctors. Such a problem existed due to the complex structure of the intranet and the magnitude of guidance available. Junior doctors were struggling to locate useful guidelines in a timely manner and thus often not using them. This could have a direct impact on patient care, as it is these guidelines which enable the standardisation of medical practice and thus the delivery of highest quality care.

Background

Medicine has become increasingly protocol driven as this promotes best practice. Clinical guidelines, as defined by the American Institute of Medicine, are "systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances" . The use of guidelines and protocols is widely encouraged at NBT as these help to ensure high quality evidenced based medicine is delivered across the Trust. Not only do these promote patient safety but they can also be linked to reduction in malpractice litigation and to significant economic savings.

An example of guidelines improving care provision is the use of the venous thromboembolism (VTE) risk assessment tool. This is widely used across hospitals in the UK. These guidelines help doctors to assess and appropriately manage VTE risk in hospital inpatients. They have reduced VTE risk substantially.

Junior doctors, particularly when starting new jobs, rely heavily on guidelines and protocols. They often turn to these sources when in emergency settings or when they are lacking senior support. If these guidelines are not readily available they may not be used. This could contribute to a lack of standardisation and potentially lead to adverse outcomes.

NBT has a large number of evidence based guidelines that are available to all staff via the Trust intranet. Due to the wealth of information available, guidelines that are useful to junior doctors often get lost in the mix. In order to address this problem we set out to demonstrate the lack of accessibility of available guidance and to create a solution that would enable junior doctors to locate such guidance with ease.

Baseline Measurement

We challenged 40 junior doctors to find three key Trust protocols using the current intranet. Junior doctors were from FY1 (foundation year 1) to SPR (specialist registrar) and had worked at the Trust for varying lengths of time. The three protocols/guidelines were: VTE prophylaxis, management of upper gastrointestinal bleed (UGIB), and Trust antibiotic prescribing.

Doctors were asked to find each protocol in turn as quickly as possible. They had a maximum time limit of 5 min. We recorded the number of seconds and number of mouse clicks on a set proforma.

The number of seconds would demonstrate time taken to locate each protocol and the number of clicks was used to give an indication of how direct the route to each protocol was.

The antibiotic guidelines can be found via a single point of access on the Trust homepage. All doctors successfully found these guidelines, and did so in an average time of 3.5 sec and two mouse clicks. The UGIB and VTE guidelines required multiple steps away from the main homepage to locate. Forty-eight per cent of doctors were unable to locate these within the allocated 5 min. Of the 52% who could locate them, it took an average of 111 sec and 17 mouse clicks.

See supplementary file: ds3155.docx - “Young Tables and Figures”

Design

Our baseline measurement demonstrated a significant problem among trainees accessing guidelines that did not have a single point of access on the Trust homepage.

Our Trust intranet is home to over 100 Trust policies and guidelines. We surveyed junior doctors to find out which guidelines they felt were the most important to have easy access to. We collated the results and compiled a list of the top 15 guidelines most wanted by junior doctors.

Armed with our baseline results we approached the Trust's quality improvement (QI) lead and presented the problem. Our solution, a single portal for easy access to the top 15 Trust guidelines, was well received.

The next step was to locate all 15 guidelines within the existing intranet. We then developed a prototype intranet page that housed hyperlinks to these guidelines.

In order to ensure our page would be updated in future we arranged for the QI lead to take ownership of the page. We then worked with the webmaster who created a direct link from the homepage to our new site. The link was entitled ‘useful guidelines for junior doctors’. From then on our guidelines would be accessible via a single mouse click from the homepage.

Following the development of our page we publicised its presence. This was achieved through: presentations at junior doctor teaching sessions; posters displayed throughout the Trust; an email to all junior staff; and finally a message on the Trust's 'message of the day' screen.

Strategy

Several weeks later, using our original proforma, we re-audited the accessibility of the initial three protocols. Again we recorded time in seconds and number of mouse clicks. After the completion of the exercise each doctor was asked for constructive feedback on the new page. We were interested in aesthetics, content, and ideas for future developments.

Results

In cycle one, 100% of doctors were able to locate the antibiotic guidelines in under 12 sec (mean 3.5 sec, range 1-12 sec) and with two mouse clicks (range 1-12). In this pre-intervention cycle 48% of doctors were unable to locate the UGIB or VTE protocols within the allocated 5 min. For the remaining 52% who could locate the guidelines they did so in an average of 45 sec and 14 mouse clicks. It took a mean time of 60 sec (range 8- 201) and 11 mouse clicks (range 4-53) to locate the UGIB guidelines. The VTE guidelines took a mean of 149 sec (range 12-240) and 16 mouse clicks (range 4-48).

In cycle two, post-intervention, all 40 doctors were able to find all three protocols within an average time of 7.2 sec and 2.1 mouse clicks. As in cycle 1, 100% of doctors were able to locate the antibiotic guidelines. The VTE prophylaxis guidelines were found in an average of 11.2 sec and the UGIB guidelines were found in an average of 5.6 sec. The improvement in access to the VTE and UGIB guidelines was significant (p=0.001) (see tables 1-3 and figures 1 and 2).

Lessons and Limitations

In the development and implementation of our quality improvement project we have learnt a number of valuable lessons:

1. Our main challenge was finding a hospital body to take ownership of our proposed intranet page. As this was the first initiative of its kind there was no template to follow and as such we had to persevere and forge links across many departments including IT services and Trust headquarters. We were fortunate enough to liaise with the quality improvement and audit department which kindly took ownership of the page. This partnership had the added benefit of helping with website design and update.
2. Another obstacle was ensuring that our page would be kept updated in line with changes to Trust guidelines. As a solution to this problem we used hyperlinks to the existing guidelines on the Trust intranet. This means that when these guidelines are updated so too are our links.
3. An important lesson was to use all available resources to advertise our project to provide maximal benefit for our junior doctors. We learnt to use different methods such as: giving talks at the end of FY1/2 teaching; circulating a clear email highlighting our new site; placing posters in busy hospital areas and using the Trust ‘message of the day’. The constructive feedback we received was invaluable in project development.
4. The success of the page has highlighted some new challenges. Many hospital departments are now looking to promote their guidelines on our site. We must be careful that significant expansion over the next year does not detract from the simplicity and clarity that allow easy access to guidelines when required the most.
5. We had a large QI group that often made the delegation and execution of tasks difficult to coordinate. To overcome this

we held regular meetings, had well-defined roles and used an online 'Google groups' spreadsheet to coordinate data collection.

6. For our project we looked at accessibility of guidelines for junior doctors. With the benefit of hindsight we could have included other health professionals who would also benefit from our site and have equal access to our intranet.

Conclusion

Junior doctors at NBT were not able to access hospital guidelines and protocols in a timely manner. By developing a new intranet page where all guidelines were found via a single port of access we were able to show huge improvements in accessibility of Trust guidelines and protocols.

Our next step is to continue to develop this site both in terms of aesthetics and content while maintaining its simplicity. This will be done under the guidance of team members staying on at the Trust and the QI and audit department. We promote the link to new junior doctors who start at the Trust each August by advertising it in their induction pack. This provides a useful reminder when on call.

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Declaration of interests

Nothing to declare

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Table 1 Percentage of doctors able to locate guidelines pre- and post-intervention. UGIB, upper gastrointestinal bleed; VTE, venous thromboembolism

	VTE	**UGIB**	**Antibiotics**
% found pre-intervention	55%	50%	100%
% found post-intervention	100%	100%	100%

Table 2 Time taken to find guidelines pre- and post-intervention. UGIB, upper gastrointestinal bleed; VTE, venous thromboembolism

	VTE	**UGIB**	**Antibiotics**
Time pre-intervention (sec)	192.8	172	4.5
Time post-intervention (sec)	11.2	5.6	3.9
Time saved (sec)	181.8	166.4	0.6

Table 3 Number of clicks to used to locate guidelines pre-and post-intervention. UGIB, upper gastrointestinal bleed; VTE, venous thromboembolism

	VTE	**UGIB**	**Antibiotics**
Clicks pre-intervention	11.2	26.6	2.3
Clicks post-intervention	2.2	2.0	2.1
Clicks saved	9.0	24.6	0.2

Figure 1 Time to guideline pre- and post-intervention. ABX, antibiotics; GI, gastrointestinal; VTE, venous thromboembolism

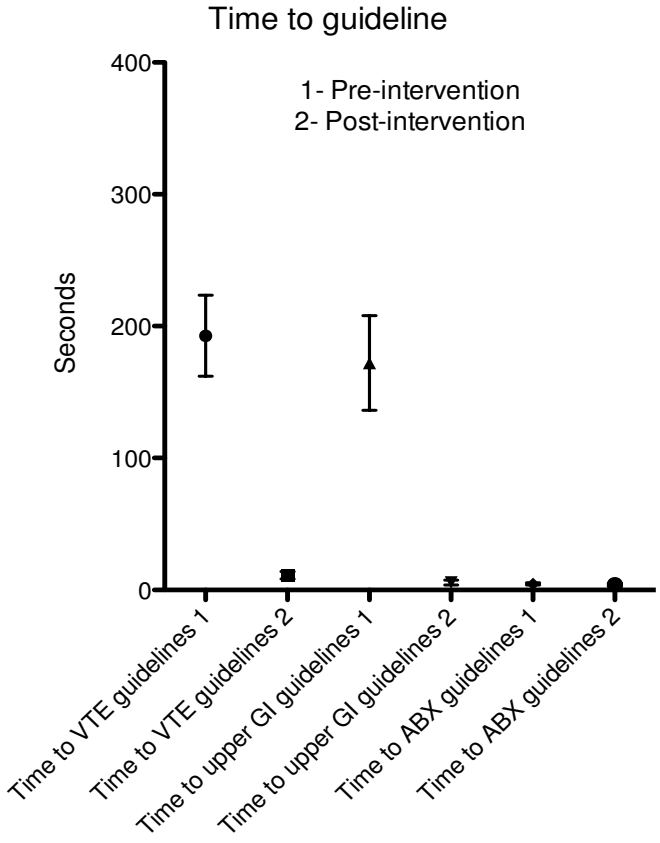
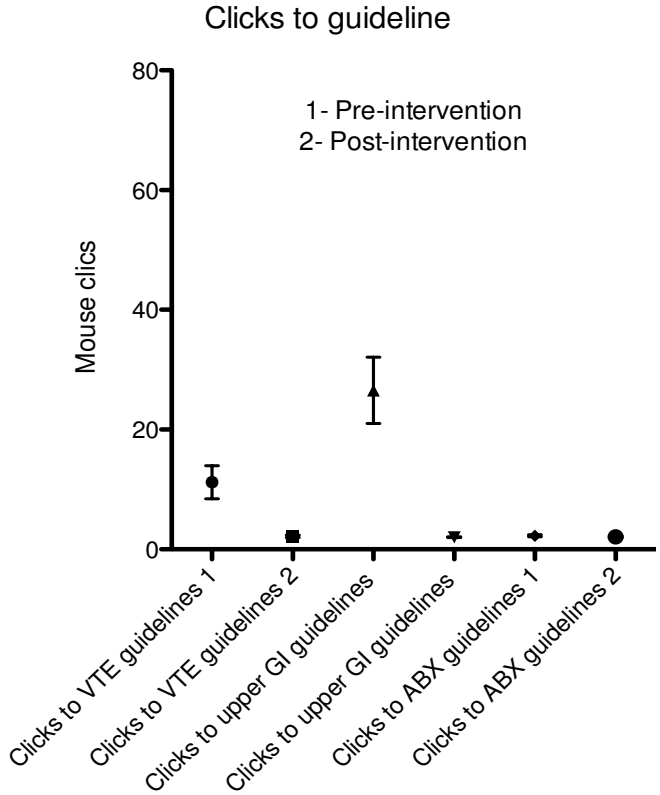


Figure 2 Time to guideline pre- and post-intervention. ABX, antibiotics; GI, gastrointestinal; VTE, venous thromboembolism



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A new patient information leaflet for Dermatology outpatients

Katrin Becker, lindsay whittam
Great Western Hospital, Swindon

Abstract

Lack of provision of information was the single most common cause of poor performance in the 2008/2009 NHS Patient Survey Programme of trusts in the UK. Information leaflets have been shown to improve patient satisfaction with consultations.

We introduced a new patient information leaflet about the scheduled consultation in a district hospital´s dermatology outpatient clinic. We then assessed in a small study its effect on the patients regarding helpfulness, preparation for and satisfaction with the out-patient consultation.

Via the hospital´s booking office, leaflets were sent to all patients (n=32) due to attend two outpatient clinics, accompanied by a letter about the survey. After the consultation, patients were given a short anonymous questionnaire to complete.

Of the 32 patients, 12 patients did not receive the leaflet, three did not attend their consultation, and two left before they were handed the questionnaire. We gave out 15 questionnaires, and received 15 responses (100%).

46.9% of patients (n=15) answered the questionnaire. Of these 33.3% were new patients (n=5). 86.7% (n=13) found the leaflet helpful and 33% excellent (n=5). 86.7% felt well prepared for the consultation, 40% excellently (n=6). 86.7% were satisfied with the consultation, 73% rated their satisfaction as excellent (n=11). 60% of patients brought a list with their medication (n=9), 80% of the new patients (n=4). 13.3% of patients (n=2) wrote down questions prior to the consultation. Comments suggested the leaflet would be more useful for new patients.

Patients scored highly for satisfaction with the consultation, whether or not they had received and information leaflet (we asked n=20 patients without leaflet). This short survey supports the idea that patients find it helpful to receive an information leaflet, and actively prepare by bringing a list of their medication, and thinking of questions.

Problem

In the UK, an outpatient consultation in hospital is something of value to the patient. In contrast to other European countries, a patient needs to be referred, usually from primary care, and usually waits some time for the appointment. Patients often attend with high expectations, and may be anxious.

Clinicians, on the other hand, need to perform a thorough clinical assessment in a limited time. Our setting is a district hospital dermatology outpatient clinic. How can the outcome of consultations for both patients and clinicians be improved?

Background

Research has shown that patient satisfaction with the consultation is closely related to better compliance with treatment and better healthcare outcomes.(1) The most important factor for patient satisfaction seems to be that patients feel they interacted well with the clinician. A review of trials has shown that effective communication is as important as high quality medical practice for good outcomes.(2)

Factors important in achieving good communication include the need to identify and discuss patients´ concerns, to provide appropriate information, and to involve patients in their choice of treatment.(1,2) Lack of provision of information was the single most common cause of poor performance in the 2008/2009 NHS Patient Survey Programme of trusts in the UK.(3) A national survey of outpatients showed that 27% of patients seen in outpatient clinics for the first time would have liked to have more information.(4)

A simple intervention to help patients prepare better for their consultation is to send information leaflets prior to the outpatient consultation.(4) Little et al. have shown that patient information leaflets can increase patient satisfaction and their perception of good communication.(5) Patients want to be informed and are willing to spend time and effort on information leaflets.(6) Information leaflets also improve attendance rates (non-attendance dropped from 15% to 7.3%).(7) Following the distribution of a leaflet, patients were more likely to initiate conversation about their concerns (8, an increase of 100%). Information leaflets have been shown to improve satisfaction even three months after the consultation.(9)

Patient information leaflets have many potential benefits. These days, a large number of information leaflets are available. A recent review identified that the information provided in different leaflets on the same topic differed widely and was sometimes inaccurate.(10) Apart from the obvious clinical concerns, this could potentially damage patient confidence. Another potential risk for leaflets is that

patients are given too much or sometimes irrelevant information, thus increasing their anxiety. In a trial in primary care where patients had received leaflets to encourage them to participate more during consultations, doctors had afterwards ordered significantly more investigations, in categories where neither doctor nor patient had found a strong need for them. This suggests that if patients raise more concerns then doctors may have responded with investigations (5), all of which may raise unnecessary anxiety for patients and pressure on the health system.

Baseline measurement

There are two reasons why we wanted to introduce a leaflet:

We were aware that patients could be better prepared for the clinic appointment:

- Patients did not know how to cancel or change an appointment and did not attend

- Patients often felt uncomfortable and surprised when asked to allow us to examine their full skin. This is frequently done in dermatology, especially when looking for skin cancer. Patients commented that they would have liked to wear different clothes

- Patients thought they would be operated on their first visit and were unnecessarily anxious, since operations are usually done during a subsequent visit

- Thorough consultations were sometimes unnecessarily difficult because not enough information was available to clinicians when patients arrived unprepared, not knowing that clinicians find it helpful to know about medical history, current medication, and family history.

The aim of our project was to design and introduce a patient information leaflet to prepare patients better.

The second reason was that other departments in our trust had introduced leaflets successfully and had received positive feedback.(11)

As baseline measurement, we asked 20 patients (nine new patients) about their consultation. Four of 20 (20%) would have appreciated more information before attending the department, Three of 20 (15%) had felt anxious before they came. We asked them to rate how well they felt prepared and how satisfied they felt with the consultation on a scale from 0 (awful) to 4 (excellent). The score for the satisfaction with the consultation was 3.7 (75% rated their satisfaction as excellent). They also rated highly how they felt prepared with a score of 3.3 (30% scored the felt prepared excellently).

Design

We designed a patient information leaflet which was specifically intended to prepare patients better for their consultation in dermatology. Our patient leaflet has two main aims:

We want to enable patients and prepare them better for their consultation. This is not done commonly in other leaflets.

- We offer information on how to change and cancel appointments and where to find the clinic. The hospital can be a confusing building that is full of busy people, so this might reduce anxiety about finding the department

- We explain in detail what to expect before, during, and after the consultation

- We ask patients to participate; to bring a list of their medication, to be prepared for questions regarding their skin problem and their medical history, and to prepare any questions of their own

- We inform them about things that are common in dermatology; that they might need to be examined (and might need to undress for this), about surgery, and that they might be referred to another department

On the other hand, we want to reduce anxiety for patients who attend an unfamiliar place after a long wait:

- We call the leaflet " welcome to dermatology"

- We explain who works in our department and mention the names of staff members

- We mention that there are chaperones available

- We explain that we are happy to answer questions and encourage these

- We let patients know that we will inform their GP of the consultation so patients understand that we work together.

The leaflet has a format to make it easy to read. When you take it off the envelope it is a folded like a booklet, with colourful photos on the front page. The structure then is clear: when patients unfold it each page shows a new topic (from “the team” to before - during - after the consultation) and a separate page about treatment options.

We used a questionnaire to find out what patients think of their consultation in dermatology and the leaflet itself. Similar questionnaires are broadly used in medicine to evaluate patient satisfaction, answers were on a 5-point-scale from 1 (awful) to 5 (excellent). We asked how helpful they found the leaflet, how well they had felt prepared, and how satisfied they were with the consultation overall. We also wanted to know if they brought a list of their medication or wrote down questions (answer yes / no).

In the first instance, we sent the leaflet and questionnaire out to patients due to attend four clinics (n=63), and asked them to return with the questionnaire to clinic.

Strategy

PDSA cycle 1. The patient information leaflet and questionnaire were sent out to patients due to attend four clinics (n=63). In the patient letter, we asked them to bring the questionnaire to the clinic. Unfortunately, of these 63 patients only seven returned the questionnaire (11%). Due to the poor response rate we did not feel these answers could be taken as representative and they were disregarded.

PDSA cycle 2. On the second occasion the booking office sent out the leaflet to a further group of patients. The deputy manager of the outpatient department redesigned the leaflet so that it had a more official format. It was then sent to patients of two further clinics (n=32). We handed out the questionnaires immediately before the consultation and collected them afterwards from the rooms.

Of the 32 patients, 12 patients did not receive the leaflet, three did not attend their consultation, and two left before they were handed the questionnaire. We gave out 15 questionnaires, and received 15 responses (100%). 33% of patients (n=5) found the leaflet helpful, 53% (n=8) good. 40% of patients (n=6) felt the leaflet prepared them excellently for the consultation, 46.7% (n=7) felt well-prepared.

Overall satisfaction was outstanding, providing some great feedback: 73% of patients (n=11) rated their satisfaction with the consultation as excellent, and only n=2 (13.3%) as fair.

60% of patients brought a list with their medication (80% of new patients n=4). 13.3% (n=2) patients wrote down questions on the leaflet.

Comments on the questionnaire were very positive about the consultation ("satisfactory in all areas", "always helpful and supportive", "I have always found everyone kind, helpful and knowledgeable") but suggesting that the leaflet would be more useful for new patients ("put my mind at ease", "very professional", "valuable to newcomers", "more useful for new patients").

Patients found the leaflet helpful and felt better prepared. Patient satisfaction was excellent if patients received a leaflet.

PDSA cycle 3. After evaluation of the questionnaires, the results were presented at the local dermatology multi-disciplinary team meeting. Some changes were made to the leaflet. The team decided to officially introduce the leaflet, and to send it to all new patients together with their invitation from the booking office.

See supplementary file: ds3041.docx - “PDSA cycles 1-3, as explained in the box”

Post-measurement

Patient's feedback about our leaflet was very good: 87% found the leaflet helpful (rating it as 3 (good) or 4 (excellent)), and 33% rated it as excellently helpful. 87% of patients rated they felt well prepared (numbers 3,4), and 40% felt excellently prepared. Overall satisfaction with the consultation was excellent in 73%. 60% of patients brought a list with their medication to the consultation. 13.3% of patients wrote down questions.

Comparing this to the baseline measurements, patients scored similar about their satisfaction and how they felt prepared whether they had received a leaflet or not; the score of how they felt prepared was 3.27 with leaflet and 3.3 without. Overall satisfaction was scored as 3.6 with the leaflet, and 3.7 without. However, we noticed that patients were better prepared after they had received a leaflet: 60'% brought a list with their medication when they had received the leaflet, 45% if not. The leaflet encouraged patients to think of questions: 12% had prepared questions compared to those who had not got a leaflet. In addition, patients who had not been sent a leaflet would have appreciated more information in 20%, and 15% had felt anxious before the consultation. Our leaflet is designed to address these areas of concern.

Although we could not measure an improvement in satisfaction, or how patients felt prepared with a leaflet, comments from patients were very positive about the consultation and the leaflet ("Always helpful and supportive", "Satisfactory in all areas","I have always found everyone in this department helpful, kind and knowledgeable. Good job"). They also suggested the leaflet might be more useful for new patients ("I think the leaflet would be more useful for new patients - as I knew already what to expect", "Very professional and complete, put my mind at ease, very thorough. Thank you" from a new patient, "Leaflet is valuable to newcomers, but less so for people who have attended before").

We discussed results and comments in the multidisciplinary team meeting and decided to introduce the patient information leaflet for new patients only.

Lessons and limitations

During this project, I have been able to learn several lessons:

1. Teamwork is very important and necessary to work effectively. I had sent the leaflet and questionnaire to patients on my own in the first instance, but as this is a very lengthy job to do alone and could be done more effectively, I asked the booking office for help. They offered not only help with sending out leaflets, but the manager sat down with me to redesign the leaflet in the same design as other leaflets the hospital sends out.
2. It might be useful to involve patients earlier. Although we have collected responses and suggestions from patients during the consultations, it might have been interesting to ask patients what they would like to find in a leaflet in the first place. We could then have designed the leaflet, and improved it further in several rounds based on the patients' feedback
3. A limitation of this project is the small number of patients who took part:

- Why did from 32 patients who should have received the leaflet 15

did not receive it?

- Although 100% of patients who we asked to fill in the questionnaire handed it back to us we cannot be sure that this group is representative because it is very small

- A larger study involving more patients might be useful, and it might also be interesting to find out why more than 40% of patients did not receive the leaflet in the first place.

1. We did not find a difference in patient satisfaction. Our results show similar scores for patient satisfaction between patients who had received a leaflet and those who had not. It is good to know that our consultations are already highly satisfactory. To see a difference between a satisfaction score which is already excellent (3.7 was the satisfaction score for overall satisfaction) a measurement with later numbers of patients would be necessary.
2. Is the leaflet only useful for new patients? We have not formally compared changes in patient satisfaction between new patients and patients who had attended the department before. Our decision to send the leaflet only to new patients is based on patients comments. A formal evaluation might have been interesting here.

Conclusion

The design of a patient information leaflet and collection of patients feedback - this is how I would summarise the project. Feedback was positive, and the multidisciplinary team decided to introduce the leaflet for new patients as suggested by the patients.

In my opinion, the leaflet hopefully helps patients to get most from their consultation in dermatology. Pressures on dermatology clinics are high, and there is not enough time for appointments and not enough trained staff to offer these. Consultations are often short and patients need to wait a long time for an appointment. Our baseline measures show that patients would have appreciated more information before attending clinics, and that more than 10% feel anxious before their appointment. The leaflet means to address these concerns. Our questionnaire has shown that patients rate the leaflet highly; they feel well prepared and find the leaflet helpful. This is a good outcome for our project.

We also found that patients had become more active: 60% of patients and 80% of the new patients had brought a list with their medication along (as we had encouraged them via the leaflet), and a small number of patients have written down questions. Comments from patients said they were put at ease, and found the leaflet valuable. Patient information leaflets can improve patients participation in consultations and help prepare them better.

If I did the project again, I would change a few things:

- It might be interesting to find out patient opinions in a more structured way earlier on in the process. We might have asked them before designing the leaflet what they would like to find in a leaflet.

- When we collected feedback, 12 patients from 32 did not receive the leaflets. Two of these were very recent additions to the clinic list. Two were current inpatients. We have no explanation why the remaining 10 patients (>30%) did not receive the leaflet. It would be quite worrying if this happened to all information sent via the booking office, and we have informed the booking office and its deputy manager of this result, who might need to investigate further.

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Declaration of interests

Nothing to declare.

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A novel approach to Junior Doctor Induction: A near-peer based curriculum developed and delivered by outgoing Foundation year doctors

Kittiya Sukcharoen, Matthew Everson, Clare van Hamel
Severn Postgraduate Medical Education

Abstract

There is a 4-12% increase in mortality in the month following the start of Foundation Year 1 doctors (FY1s) in the UK. In 2012 the National Health Service announced a compulsory shadowing period for FY1s, aiming to increase familiarity with the environment in which the FY1 would be commencing work. There is no national curriculum of the content for this shadowing period and evidence suggests variable content of induction programmes across the UK.

Our project aimed to provide a near-peer induction, based on needs previously identified by a national survey and outgoing FY1s' experiences. The day consisted of expert-led lectures, interactive practical sessions delivered by outgoing FY1s, and simulated tasks within the clinical environment where they were about to commence work. The day was evaluated by questionnaires distributed to participants before and after the induction to measure whether there was a change in the perceived confidence of the FY1s in different aspects of their role.

There was a 61% improvement in familiarity of equipment and knowing how to request investigations. Confidence levels increased by 45% and 28% in prescribing insulin and intravenous fluids, respectively. There was a 9% improvement in feeling adequately prepared to recognise the critically ill patient. Confidence was high in prescribing intravenous fluids (72% pre-induction and 100% post-induction) and simple analgesics (94% pre-induction and 96% post-induction).

The induction day improved self-perceived confidence in all measured areas. The largest increase was in the area given most focus during the day - knowledge of the environment. Combining factual content with orientation of the environment increases confidence for new FY1s. Teaching by outgoing FY1s provides insight into what the job entails. We recommend this style of induction to maximise preparedness within a limited time frame.

Problem

There is a 4-12% reported increase in mortality in the month following the start of Foundation Year 1 doctors (FY1 – first year postgraduation) in the UK (1,2). This has gained the media title of "Black Wednesday" as changeover occurs on the first Wednesday in August. Similar concerns have been reported in the USA and is known there as the "July phenomenon". The reported increase in mortality has been linked to the movement of most trainee doctors to unfamiliar environments around the UK on the same day. Lack of familiarity with the new working environment and unfamiliarity with local practices all contribute to doctors potentially feeling unprepared for their new jobs.

Background

The NHS announced a compulsory shadowing period for all FY1 doctors in 2013. Its aim was to improve knowledge and skills specific for the new working environment. Anecdotal evidence suggests a variety in duration and content of induction programmes across the UK. A combination of shadowing and teaching are usually included, but some hospitals have a 2-week induction programme while others have 4 days. There is currently no national curriculum although guidance was issued to trusts for the induction period. There is evidence that induction programmes can have an effect. University Hospitals Bristol NHS Foundation Trust showed a 45% reduction in self-reported critical incidents by new junior doctors in their first 4 months of working after introduction of mandatory structured induction training (3).

Baseline measurement

We ascertained the baseline measurement by gauging confidence levels at the start of the additional voluntary induction day, immediately before the 4-day shadowing period. There were 27 new FY1s starting at Great Western Hospital (GWH) in August 2013. Twenty-six of the 27 FY1s attended; pre- and post-induction feedback data from 25 FY1s were collected.

The FY1s had high self-perceived confidence levels when it came to prescribing simple analgesics and intravenous fluids: more than 70% of FY1s felt confident. They also felt confident that they could recognise critically ill patients. Knowledge of the local environment (familiarity with equipment, knowing how to access investigation results) was very low. In addition, confidence was especially low concerning the prescribing of anticoagulants and insulin, with only 20% of FY1s feeling adequately prepared.

Design

Our project aimed to provide near-peer induction, based on needs previously identified by a national survey of FY1s and local feedback from outgoing FY1s. The Preparedness to Practice Survey 2012, with 1829 FY1 responders, identified a number of areas where FY1s still felt unprepared after their induction (4). These included the local IT system, knowing the local equipment and environment, getting help out of hours, and prescribing.

The additional induction day was designed to address these areas of unpreparedness. The day consisted of:

- Expert-led lectures on diabetes, pharmacy, and acute oncology delivered by an endocrine consultant, a pharmacist, and an acute oncology specialist nurse.
- A sequential series of sessions, delivered by the outgoing FY1s, including fluid prescribing, sepsis, and use of the Foundation Programme e-portfolio.
- In-situ simulation where participants performed simulated tasks within the clinical environment where they were about to commence work: arterial blood gas sampling was simulated on the respiratory ward, death certification was completed in the bereavement office, and radiology requests were discussed with a radiology consultant in real time. The in situ simulation aimed to increase both knowledge but also environmental awareness and orientation.
- In the final session, students participated in classroom based simulation exercises in identifying and managing the unwell patient, commonly experienced while on call. This was run by an anaesthetic consultant.

Strategy

The aim of this project is to improve the confidence level of incoming FY1s, to orientate them around the new working environment, and to familiarise them with what to expect when they start work as an FY1. The ultimate aim is to improve patient safety.

The project started with anecdotal evidence drawn from surveys of current FY1s on their own experience of FY1 induction and what they would have liked to know before starting work. National surveys on FY1 induction were identified and reviewed. Research on different methods of teaching identified simulation as an effective tool in medical education and that in situ simulation is a new method of familiarising subjects to their new environments (5).

Based on the surveys and research on different teaching methods, we were able to draw up a provisional plan for the induction day, with key topics that must be covered. The outgoing FY1s participating on the day were then trained on simulation teaching – formulating and writing scenarios, then running scenarios and debriefing students afterwards. The scenarios were then piloted with other FY1s to see if the scenarios were pitched at the right level and changes were made accordingly. The same methods were used in designing the scenarios for in situ simulation.

Respective departments were approached and agreed what they thought might be useful scenarios; some recommendations were later amended or rejected after being piloted on the current FY1s. Consideration was given to piloting scenarios with final year students but this was not possible due to local students being on their elective during the scenario testing period. The speakers for the expert led lectures were consultants or specialist nurses who have done talks on these topics before to a similar audience.

After the voluntary induction day was delivered, we collated the results from the feedback questionnaires and the results were presented to an audience including the Trust chief executive, medical director and education leads at GWH. The presentation highlighted the importance of FY1 induction, which is specific to the environment in which FY1s will be working. There was agreement that using a near-peer approach with outgoing FY1s had delivered positive feedback. The Trust has agreed to incorporate the induction programme into the compulsory Trust induction for new FY1s. The induction programme for 2014 will be evaluated to try to ensure an improvement in the confidence and preparedness of the incoming FY1s.

Results

The environmental induction day was evaluated by questionnaires distributed to the 26 participants before and after the induction; 96% of attendees completed the evaluation. The self-perceived change in confidence was measured.

There was a 61% improvement in familiarity of equipment; a 61% improvement in knowing how to request investigations; a 46% improvement in familiarity with the e-portfolio; and a 45% improvement in knowledge of the working environment (see figure attached). Confidence levels were high in knowing what to expect of starting FY1s which improved from 64% to 88% after the day. There was a 9% improvement in feeling adequately prepared to recognise the critically ill patient, from a high baseline of 72% feeling confident.

Regarding prescribing, confidence levels increased the most, by 45%, in prescribing insulin. Confidence was high in prescribing intravenous fluids (72% pre-induction and 100% post-induction) and simple analgesics (94% pre-induction and 96% post-induction).

Compared to other FY1s across the UK in the National Preparedness to Practice Survey 2013, FY1s at the GWH all had an opportunity to shadow the outgoing FY1s (85% vs 100%). More FY1s at GWH had taken a tour of the working environment, had teaching on critically ill patients and FY1 e-portfolio compared to national figures. The survey also demonstrated an overall improvement in confidence compared to the national average and an improvement on the 2012 national survey results for the GWH.

See supplementary file: ds3721.pptx - “Graph”

Lessons and limitations

We collected subjective data, notably self-perceived confidence, and it should be noted this does not necessarily reflect actual knowledge and skills.

Interestingly, the new FY1s were confident in their ability to recognise the critically ill patient. However, research has highlighted concerns regarding the paucity of understanding in final year medical students of the management of critical illness (6). The high confidence in our F1s could be explained by their recent final medical school examinations. The new doctors may have confused their knowledge of the critically ill with the experience of being able to recognise and manage such a patient.

We have concerns over the sustainability of our project given that it was led by FY1 doctors. We are pleased to say it is being repeated this year. This was a 1-day induction programme provided in addition to the compulsory existing induction at the Trust. Integration within the mandatory induction programme would provide greater certainty of sustainability of the project. The day was 10 h long and FY1s commented that this was too long to spend learning intensively. Ideally, this programme should be implemented over 2 days. However, this would involve more organisation and taking time out of the mandatory Trust induction programme.

The day was cost neutral, with lunch supplied by a sponsor. The burden of tutor availability and having to take time away from clinical work was not found to be an issue.

Conclusion

The induction day improved self-perceived confidence in all measured areas. The largest increase in confidence was in the area given greatest focus during the day, namely knowledge of the environment. Combining factual content with orientation of the environment increases confidence for new FY1s. Teaching by outgoing FY1s provides insight into what the job entails. We recommend this style of induction to maximise preparedness with limited time.

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Declaration of interests

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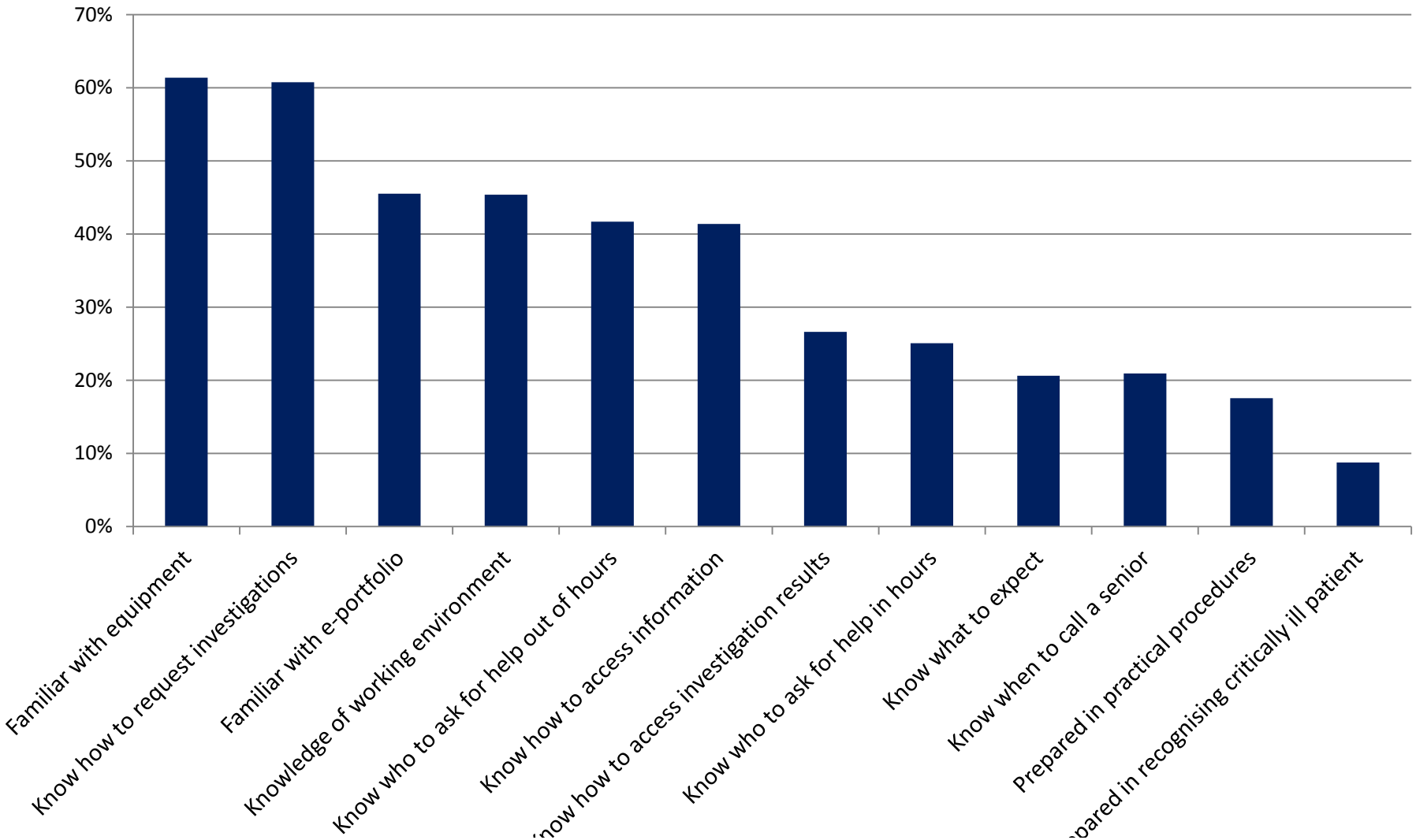
Measured improvement in confidence



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Compassionate Conversations

Sharryn Gardner, Dominic Bray
Southport and Ormskirk NHS Trust

Abstract

Staff engagement is much more than just a bonus in any organisation. CQC data shows that it is very clearly linked to positive results in both patient and staff outcomes (fewer complaints, improved safety, reduced sickness, fewer accidents, and more as per Michael West). Staff engagement may seem nebulous but is in fact measured routinely annually in the National Staff Survey. The problem is that often Trust Boards with poor Staff Survey results may struggle to increase staff engagement as staff see management initiatives as 'management fads' or 'tick-box exercises' purely for targets, not their own benefit.

Compassionate Conversations are a ground-level initiative focused primarily on supporting and motivating individual staff as the primary focus. This allows the benefits to patients and in Human Resources to be an unspoken anticipated benefit. They are led by a Psychologist and Consultant in a coaching supportive atmosphere in an open or selected group.

The Conversations have been rated 9/10 or higher by 64% of participants, while 75% of all participants voluntarily provided feedback. Feedback initially was that Conversations were too clinically-focused and further Conversations were more wide-ranging in topic and included departmental roadshows.

Problem

The problem is that some Organisations (Acute UK Hospital Trusts) may have very poor Staff Survey results and have no obvious way of being able to address this. The poor results may be mirrored in suboptimal patient and HR results, though no organisation is perfect and almost all could benefit from further positive staff engagement.

Pulse Check results act as a snapshot in time of staff views of their organisation. These can be initiated within programmes such as Listening into Action or Scope for Change which seek to empower staff to make positive changes in teams across the organisation. The assumption from West's work mapping CQC data and National Staff Survey data over years is that there will be a gap between the current performance and the potential performance. West has estimated this at around 40 lives saved per District General Hospital where a Trust Board is engaged with staff for example.

Staff may suffer as there is likely to be higher stress and sickness levels as well as patient complaints. Patients may suffer from less compassionate care, more safety lapses, and less efficient care. Management may suffer due to poorer results and an inability to demonstrate anticipated improvement with apparently appropriate staff training.

The situation is maintained as staff who are not engaged may be sceptical at initiatives to improve engagement as phoney.

Background

Schwartz Rounds in the States were developed to combat this potential gap in compassion by having regular whole-hospital meetings to discuss potentially emotive issues. Evidence shows that staff gain support from others and mutual respect between teams. This then translates into lower mortality and morbidity as well as better results in HR metrics such as staff sickness and accidents at work. Michael West has demonstrated this direct correlation reliably over 10 years from CQC and National Staff Survey data.

Compassion was the biggest theme in the recent Francis Report into the crisis at Mid Staffordshire, though it can seem quite nebulous as a metric which can be addressed. The Point of Care Foundation (previously the King's Fund) has taken on a role of rolling out this or a similar program as far as possible. They have not only introduced this model, they have reported extensively on the early and ongoing results.

Currently there are no other similar options and for many Trusts (despite any recognised need to promote compassion) Schwartz Rounds can be prohibitively expensive. They have a tried and tested formula, and to remain accredited have some constraints on how to run them.

Baseline measurement

There is no obvious direct measure of staff engagement, though this is a small part of the overall National Staff Survey - there is an overall section on staff engagement with 4 sub-questions.

Schwartz Rounds in the States were developed to combat this by having regular whole-hospital meetings to discuss these emotive issues. They pre-dated Francis by around 20 years and had published evidence on their benefits almost 10 years ago. Evidence shows that staff gain support from others and mutual respect

between teams. Compassion was overwhelmingly the biggest theme in the recent Francis Report into the crisis at Mid Staffordshire. The Point of Care Foundation has taken on a role of rolling out this or a similar program as far as possible.

This then translates into lower mortality and morbidity. We know this as Michael West has spent 10 years mapping National Staff Survey data against CQC outcome and quality data. It seems that they are directly related implying that training and multiple management initiatives may not be enough without Organisational support and engagement for individuals and an appreciation of their efforts.

See supplementary file: ds3373.pdf - “Schwartz Rounds Summary”

Design

The intervention stemmed from the Director of Nursing hearing about Schwartz Rounds and wanting something similar.

The basic Compassionate Conversation was developed by a core Solution Focus Practice trained group who would act as facilitators. They had experience of using the various elements with success in other settings and felt that this combination should work well.

The intervention started very quickly within a Trust-adopted commercial process called Listening Into Action which had a timescale of 20 weeks though it was always planned to be a long-term plan and to become embedded.

The intervention is an ongoing programme of regular whole-hospital meetings and departmental roadshows. These are pitched directly at all groups of staff as individuals and for their own needs as much as for those of the patients.The best events have had the most diverse groups of staff including domestics, porters, the CEO, Trust Governors, HR staff and others. Equally small group events work well in small teams where staff bond and feel safe as there are no outsiders present.

Like Schwartz Rounds the monthly whole-hospital events last one hour. Coffee and doughnuts (always doughnuts as these have significance) are provided. The events are currently all led by a Psychologist and Consultant, both of whom use a relaxed and at times humorous approach. Participants are encouraged to feel free to say politically incorrect things and use gallows humour within the confines of the safe environment. Unlike Schwartz Rounds, we have chosen coffee lounge-like areas so that participants feel relaxed and are primed to mix and chat. As the event starts, participants are reminded that any patient or staff details in the room are to be treated confidentially. Equally, they can feel free to express emotions as there is strict a policy of 'what happens in Vegas, stays in Vegas' (supported by posters as participants enter the room). Unless there is a genuine serious and material risk, no information will be acted upon outside the meeting. There is an opening part describing why our own needs are important in order to provide good care and how healthy it is to focus on this.

Staff are then separated into pairs having been shuffled around so that pair with a member of staff they didn't already know. They are then asked to spend several minutes (in turn) asking each other what they feel proud of doing in the last couple of weeks - even if that is being able to actually get into work. Essentially 'what have you done lately to make you feel proud?'. Surprisingly, when participants have often been cajoled into coming, this is often a liberating experience and there is a palpable buzz in the room. They then ask each other how did they do that and did they have to learn how to, or work at it.

Following this participants are warmed up and have developed a 'yes-set' as it is called in selling. They are willing to stay engaged. The facilitators then lead a discussion loosely based on a predetermined theme such as where there is no medical fix, describing your most memorable colleague (or patient), the aftermath of a serious incident and others. Participants often jump right in and are very frank, honest, and candid. After about 20-30 minutes the meeting is brought to a close, everyone is reminded about confidentiality, and encouraged (not required) to leave feedback on prepared forms.

Strategy

The feedback was used in realtime as well as facilitator's perceptions during events to modify the basic template.

PDSA cycle 1

The first event was very poorly attended and we refocused on promoting direct benefits to staff.

The second event was much better attended following managers highlighting the need to attend and giving impetus to managers to allow staff time to attend. Promotional materials became very visual, very bold, and very individual-focused.

PDSA cycle 2

Staff highlighted other staff who couldn't attend and that themes were too clinically focused. Roadshows were held within departments and developed with staff to find out what they wanted out of them. The themes were made more universal and roadshows were tailored partly to showcasing teams as well as exploring difficulties. This was very successful and is being expanded exponentially.

Results

Unfortunately due to the tight timescale with Listening Into Action, the repeat Pulse Check data is not yet available and the next National Staff Survey is currently in process.

10% of staff have attended either a roadshow or Compassionate Conversation.

75% left some form of (voluntary) feedback.

The average (mean) rating on a 0-10 scale was 8.9 and 64% scored the event 9 or 10 out of 10.

Lessons and limitations

The process started through the Listening Into Action programme which provided an Executive Sponsor as well as a timeline to get a sponsor group and get started. There was no funding allocated specifically. In the initial stages the facilitators were able to shuffle other commitments to accommodate these roles and going forward as more and more are requested, this will need to be more formally recognised through job planning which will then have resource implications. The success of the project has led to group and external Compassionate Conversations and roadshows.

Each individual Compassionate Conversation cost around £20 for refreshments - staff time was not accounted for, though they were scheduled at lunchtime.

Conclusion

The results did clearly show that staff rated the sessions very highly. It is not yet clear if that translates into a sustained effect and how long it will take (if at all) to register in better CQC results and HR metrics. Some staff have attended more than one event and many who attend have heard about them from others.

Facilitators, staff, the Sponsor Group, and The Executive Board are universally positive and it is continuing with spread into different projects and settings.

The initial project was 20 weeks in line with the Listening Into Action timescale, though from the initiation this project was always planned to become embedded and routine, and the Board are very supportive of that. It continues under the locally driven Scope for Change umbrella and the diversity of the settings continues to lead to further experimentation and diversification. The underlying model (Solution-Focused Practice - a positive coaching-like model) is one which a core group in the Trust are gradually pushing into all areas of the hospital - patient contacts, appraisals, complaints, disciplinary procedures, and others. The long-term aim is to have the first Solution-Focused Integrated Care Organisation - one which succeeds and thrives in this difficult environment.

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Declaration of interests

Nothing to declare

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Developing a Platform for Learning from Mistakes: changing the culture of patient safety amongst junior doctors

Sinead Millwood
Yeovil District Hospital NHS Foundation Trust

Abstract

Junior doctors commonly make mistakes which may compromise patient safety. Despite the recent push by the NHS to encourage a “no blame” culture, mistakes are still viewed as shameful, embarrassing and demoralising events. The current model for learning from mistakes means that junior doctors only learn from their own errors.

A survey was designed by the author for all the Foundation Year 1 doctors (FY1s) at Yeovil District Hospital to understand better the culture surrounding mistakes, and the types of mistakes that were being made. Using the results of the survey and the support of senior staff, a “Near misses” session has been introduced for FY1s once a month at which mistakes that have been made are discussed, with a consultant present to facilitate the proceedings. The aims of these sessions are to promote a culture of no blame, feedback information to clinical governance, and share learning experiences.

100% of the FY1s had made a mistake that could compromise patient safety. 63% discussed their mistakes with colleagues, 44% with seniors, and only 13% with their educational supervisor. Barriers to discussing mistakes included shame, embarrassment, fear of judgement, and unapproachable seniors. 94% thought a “Near misses” session would be useful. After the third session 100% of the FY1s agreed that the sessions were useful; 53% had changed their practice as a result of something they learned at the sessions.

After discussing errors as a group we have worked with the clinical governance department, enacting strategies to avoid repetition of mistakes. Feedback from the junior doctors has been overwhelmingly positive and we have found these sessions to be a simple, inexpensive, and popular solution to cultural change in our organisation.

Problem

While on call during my second job as a Foundation Year 1 doctor (FY1), I made an identity error which resulted in a patient receiving an unnecessary transfusion. Despite this being a "near miss" (the patient appears not to have suffered any harm), I had never felt so awful in my life. Only 5 months earlier I had taken the Hippocratic Oath “first, do no harm” and I was already making potentially harmful mistakes. I felt ashamed, mistrustful of my ability, and alone.

I spoke to the consultant on call at the time and he reassured me that "mistakes happen", but that reflecting on the event is the best way to ensure it does not happen again. He was very kind but I continued to feel awful. I wanted to make sure nobody else made the same mistake that I did.

I began to talk to other juniors about my mistake and discovered I was not alone in the way I felt, and that most people seemed to be suffering in silence. Many felt afraid and victimised by the incident reporting system but, when asked, admitted that they had never reported an incident themselves, usually because they did not have time to fill out the cumbersome form.

The main problem I identified was a culture of fear surrounding discussing and reporting mistakes. I was concerned about the impact of this on the mental health of junior doctors and the implications for patient safety if mistakes were not being investigated.

The current system for junior doctors to deal with mistakes leaves much to be desired. We are expected to write a reflection in our e-portfolio. While this can be helpful it means that only the doctor making the mistake learns from it. The reality is that, in a busy job, doctors make small mistakes on a daily basis and a reflection cannot be written for each mistake. We are encouraged to speak to our educational supervisor if we have any concerns, but this is dependent upon the degree to which the supervisor is approachable and the time available to both. The incident reporting system involves filling out a long form which may take up to 45 min and often does not result in any feedback.

I completed the first two of these actions and an incident report was submitted by the nurse involved in my mistake. None of these actions addressed the way I felt or educated others to learn from my mistake.

Background

It has been shown that junior doctor errors are fairly common. One publication associated with the EQUIP study, that formed the basis of the General Medical Council report "An in depth investigation into

causes of prescribing errors by foundation trainees in relation to their medical education", found that prescribing errors are a common occurrence, affecting 7% of medication orders, 2% of patient days, and 50% of hospital admissions (1). It is somewhat concerning that with this high rate of errors, we are not discussing or processing them.

There has been a great deal of research into the negative effect that medical errors have on healthcare workers; this phenomenon has become known as the "second victim" (2). They experience many of the same emotions and feelings as the "first victims", the patient and family members (3). Initial numbness, detachment, depersonalisation, confusion, anxiety, grief, depression, withdrawal, re-experiencing of the event, shame, guilt, anger, and self doubt have all been documented as reactions to making mistakes (4).

One study of interns in France found that involvement in an adverse incident made them feel suddenly incompetent, they developed a highly negative self image and suffered negative reactions from their supervisors, feeling condemned instead of reassured. Many asserted that they did not have adequate support and would have preferred a debrief. Several interns replayed the scenario over and over in their minds and continued to think of it for more than 2 years (5). A study looking at responses to surgical complications had similar findings: "Strong emotional reactions usually faded, but memories of significant complications often lasted for years." Again institutional support was generally described as inadequate, and the participants often reported the existence of strong institutional blame cultures (6).

Wu, who coined the term "second victim", said that "Patient safety and physician welfare will be well served if we can be more honest about our mistakes to our patients, our colleagues, and ourselves". In his most recent work he calls for an increase in the recognition of the second victim phenomenon by individual practitioners, as they will be in a position to offer initial support to second victims. They can help by providing empathy and emotional support. He also discusses examples where hospitals have developed structures to support healthcare workers after involvement with an error (7). Most of these structures involve a specially trained response team to identify second victims and offer support and occasionally counselling to them.

In every hospital, individual departments discuss severe incidents at "mortality and morbidity" meetings; however, no such meetings are held for junior doctors, who are arguably the most vulnerable group of healthcare workers to the emotional effects of making a mistake. A study of residents in the USA identified a need for programmes to provide structured meaningful ways for juniors to discuss their errors, to help them cope, and to forestall negative emotional consequences. They identify that the ability to cope successfully with errors may be dependent on appropriate reassurance provided by colleagues and supervisors (8).

Baseline measurement

I designed a survey for the 21 FY1s at Yeovil District Hospital to understand better the culture surrounding mistakes, and the types of mistakes that were being made. Seventeen responses were received.

The results show that over the 20 weeks preceding the questionnaire (first 5 months of FY1), there were approximately 736 errors, 91 near misses, and 73 adverse events, of which 67 were low harm, 3 moderate harm, and 3 significant harm (see attached questionnaire, question 5, to see how these data were obtained). Most of the low harm adverse events were due to junior doctors not acting on blood results in a timely manner, forgetting to write up fluids in acute kidney injury, not stopping medications that they should have stopped, or not writing up drugs at the optimal time.

Every FY1 (100%) had made a mistake that could potentially compromise patient safety; 69% had made an anticoagulation error, 69% an allergy prescribing error, 69% a different prescribing error, 25% a transfusion error, and 75% an identity error.

Factors which contributed to making mistakes were being on-call, time pressures, distraction, lack of support, and lack of knowledge. Sixty-three per cent of the FY1s discussed their mistakes with colleagues, 44% with seniors, and only 13% with their educational supervisor. Barriers to discussing mistakes included shame, embarrassment and fear of judgement; on further discussion many juniors felt their supervisors were not approachable.

Ninety-four per cent were in favour of starting a monthly "Near misses" session in which juniors could discuss mistakes, with a senior present to facilitate.

FY1s do not formally report their mistakes; instead, they discuss their mistakes with colleagues and occasionally, if a serious event has occurred, they will discuss them with a senior or their educational supervisor. This project has identified a culture of fear surrounding making mistakes. If we do not report or discuss mistakes then how can we learn from them and act to prevent their occurrence in the future?

See supplementary file: ds3707.pptx - “BMJ Quality questionnaire results”

Design

I designed a 1-2 h long, monthly “Near misses” session for FY1s where we could discuss our mistakes openly, with a senior doctor present to facilitate. I planned for 3-4 juniors per session to describe a mistake, what they learned from it, and what they want other people to take away from it; then we could discuss as a group ideas on how systems could be put in place to avoid repetition of that mistake. I booked the sessions as part of our mandatory weekly teaching. The aims of the sessions were to: promote a culture of no blame, share learning, and feed back information to the clinical governance department.

I discussed with and gained the support of my educational supervisor (who is also a Clinical Patient Safety Lead), and he offered to be the senior present at the first meeting. I also met with the Associate Director of Patient Safety and Quality in the clinical

governance department, who supported the innovation and became my point of contact in that department.

Although 94% of the FY1s believed the sessions would be useful, I anticipated some resistance to discussing their mistakes due to their self confessed embarrassment, shame and fear of being judged.

Strategy

PDSA cycle 1: questionnaire - I first wanted to determine whether there was a problem. Was there a culture of fear surrounding discussion of mistakes? I wanted to know what kinds of mistakes we were making and the level of harm associated with them. I also wanted to gauge whether the idea of having a "Near misses" session was something the junior doctors would find useful. Seventeen of a total of 21 FY1s completed the questionnaire. Ninety-four per cent thought a near misses session would be helpful. The rest of the information on prevalence and types of mistakes was fed back to them in a later session to reassure them that everybody has made similar mistakes and to provoke discussion about how to prevent them.

PDSA cycle 2: icebreaker - I anticipated that there would be some reluctance to discuss mistakes openly as the questionnaire had confirmed that shame, embarrassment, and fear of judgement were barriers to discussing mistakes. I conducted a preliminary 30 min session at the end of teaching in which I stood up and discussed my near miss and then asked each person in the room to talk for 2 min about a mistake they had made. I went in a clockwise direction around the room so that each person knew when it was their turn. It was harder for the first people but as more and more juniors admitted their mistakes, the atmosphere relaxed. One junior doctor became tearful when discussing her error, and the other juniors were very supportive. At the end I asked for a show of hands for who would like to start the sessions - the room was unanimously in favour.

PDSA cycle 3: session 1 - I planned for a 1 h session in which 3-4 FY1s could discuss a mistake. Each person would volunteer to come to the front and give an account of what happened. At this point the consultant could offer any comments or reassurance. Then I would ask them what they thought were the contributing factors as to why the error occurred. I intended to write a root cause analysis type diagram on the whiteboard. Then I would ask the group as a whole to make suggestions for recommendations we could make to clinical governance to help prevent that error happening again.

Unfortunately I only had 40 min. The junior doctors were forthcoming and they wanted to discuss specific incidents, although some preferred to stay in their seat when giving an account. When it came to asking about contributing factors it became apparent that writing a diagram was too complicated and needed a person trained in root cause analysis to do it properly. We resorted to writing a list. Asking for suggestions for strategies to prevent errors was straightforward and again could be taken down in a list. We only had time to discuss two errors. The feedback I received was very positive. The juniors found it cathartic and reassuring, and they were happy that by discussing their error they may have prevented someone else repeating it. I decided that the next session would need to be 1 h minimum, should be less formal, and that a root cause analysis was not necessary; the focus should be on lessons learned for the juniors, recommendations to clinical governance, and promoting openness and a positive culture.

PDSA cycle 4: session 2 - With the new more relaxed agenda the session ran more smoothly; four people discussed an error and we made some very good recommendations to clinical governance. We continued the sessions in this format. I wanted to reinforce the message that everybody makes mistakes so I started the session with the well known TED talk by Dr Brian Goldman, which describes the mistakes he has made and the negative culture around discussing them (9). This enthused the junior doctors and the session was very rewarding.

PDSA cycle 5: presentation at Big Gov - I wanted the wider clinical staff to know about the sessions so that they could understand how seriously junior doctors take the mistakes that they have made and how profoundly we are affected by them. I hoped this would help to promote a culture of no blame within the wider trust. I presented the project at Big Gov, our 3-monthly trust-wide clinical governance meeting. As previously agreed, on behalf of the junior doctors I asked the staff to make our mistakes known to us, as we cannot learn from them if we do not know we have made them. I also asked our educational supervisors to initiate a conversation at our end of placement meetings about any mistakes we have made. The presentation was very well received as I believe the issue resonated with most people in the room. I received congratulations and offers of help from senior staff who were interested in attending the sessions. I think the presentation succeeded in reminding staff how much junior doctors are affected by errors and hopefully promoted a feeling of understanding, though whether this will effect a change in the culture remains to be seen.

PDSA cycle 6: Trial of Problem Based Learning and certificate- I wanted the sessions to be led by junior doctors so we trialled a Problem Based Learning approach where one junior Chairs the session and one junior is the scribe. The scribe fills out a template to describe the mistake, the learning points and any recommendations for a system change to prevent further mistakes. This template is then signed by the consultant facilitating the session and the junior can scan it into their e-portfolio. The scribe also copies the mistake and recommendations to a separate document which can be presented to the Clinical Governance Department. At Yeovil District Hospital we have started to present this information at the Patient Safety Steering Group which meets monthly. The juniors did not want the whole template to be fed back to Clinical Governance as they thought this would make people less forthcoming and destroy the anonymity which makes discussion easier. I have attached these blank documents and an explanation of how to run a "Near Misses" session in the results section.

Results

After three sessions 100% of FY1s wanted to continue them. I think

a real testament to our success in promoting a culture of no blame is the junior doctors' willingness for further discussion of errors with other staff and with our supervisors at our end of placement meetings.

We have successfully created an environment for shared learning. Cumulatively so far we have discussed 10 incidents in detail, and 19 out of 21 juniors have discussed at least one error briefly. After three sessions 53% had changed their practice as a result of something they learned at the sessions.

After discussing errors as a group we have made a number of recommendations to the clinical governance department regarding strategies to avoid repetition of mistakes.

It is evident from our discussions that the most common mistakes are prescribing errors, specifically anticoagulation prescribing. As a result, we have raised some of our concerns and suggestions at the Safer Medicines Steering Group. Together, we identified the need for further teaching on drug interactions. We also requested feedback from the hospital pharmacy on our common prescribing errors.

A pharmacy audit of warfarin prescribing showed that 11% of international normalised ratios (INRs) >6 are due to incorrect prescription. Few doctors had received any previous teaching on warfarin prescribing and overall the warfarin prescription charts were found to be unclear and misleading. We have arranged e-learning on warfarin for junior doctors, in addition to recommending a redesign of the warfarin chart, which is now under way. We have also recommended the use of near patient testing for INRs.

A very common error among junior doctors is the prescription of penicillin to penicillin allergic patients. There have been 16 near misses identified by this study. We have recommended introducing red allergy bands and writing the allergy status of patients on the boards above their beds, and we have asked microbiologists to introduce an allergy check during phone calls with juniors when advising them to prescribe. We believe the best way to tackle prescription errors is to introduce e-prescribing, which will be coming to the trust in the near future.

The "Near misses" sessions have initiated a dialogue between the junior doctors and the clinical governance department, previously lacking, due to few or no junior doctors filling out incident reports. This dialogue has developed to the point where it benefits both the clinical governance department and the junior doctors, providing a forum in which issues arising from the day to day performance of the junior doctor can be discussed, and providing feedback on the efficacy of quality improvement initiatives being piloted, such as the improvement of the discharge summary template and the introduction of assistant practitioners to assist the on-call team at weekends.

See supplementary file: ds3769.doc - “How to do Near Misses Meetings”

Lessons and limitations

A common problem I have encountered is ensuring a consultant is present for each session. We have run some sessions where the consultant is only present for part of the session and one where he could not attend at all. This could be overcome by drawing from a pool of consultants who are interested in attending. Interestingly, many of the junior dcotors felt they could be more open when the consultant was not present. We have drawn up a list of approachable consultants to invite to future sessions and we are asking them to open the session by discussing a mistake that they have made.

At the beginning we tried to do a mini root cause analysis after discussing an error but this was time consuming and complicated. The sessions work best when they are informal and simple.

Attendance at the sessions has been very good; it is a requirement that we attend 70% of teaching to pass FY1, and keeping the sessions within the mandatory teaching slot has worked well for us. Inevitably some juniors will be unable or unwilling to attend every session.

One junior doctor, who did not engage well at the beginning, was subsequently involved in a moderate harm adverse event and came to appreciate the importance of the sessions more than anyone else. This junior is keen to continue the sessions next year when I have moved on.

I will be doing a session during induction of the new FY1s in August, in which I hope to recruit some new FY1s to lead the sessions. This has been a very important aspect of making the sessions a success, as they should be led by a junior doctor. That way the juniors feel they are in control of the discussion and are more likely to be open and honest. We have been asked and are about to start a parallel session for FY2s.

The main limitation is the small study group, as we are a small district general hospital with 21 FY1s. These sessions should be piloted in other hospitals to further test their ability to promote a culture of no blame, shared learning and improve patient safety by engaging juniors in making recommendations to clinical governance. Measuring an improvement in patient safety is a notoriously difficult task and something I have not attempted to do with this project, but it may be an area of research to consider in the future.

We have found these sessions to be a simple, inexpensive, sustainable and popular solution to cultural change in our organisation and I believe they should be part of every foundation training programme.

Conclusion

Transparency and self-improvement are qualities which should be nurtured and rewarded early on in our training, especially with the emerging emphasis on the importance of candour. These sessions serve as a platform from which we can develop these qualities. I believe this project has succeeded in effecting a cultural change

surrounding the discussion of mistakes among junior doctors, from a culture of fear to a culture of openness and "no blame". The feedback I have received from the initial sessions has been overwhelmingly positive. It was difficult at first for people to admit their mistakes in front of one another, but as the sessions have progressed people are being more and more forthcoming. It is encouraging that many junior doctors have altered their practice as a result of something they learned at these meetings. Perhaps more importantly, by discussing their mistakes on a regular basis they are becoming conscientious, self-aware and self-improving practitioners, who will improve our health service in the years to come.

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Declaration of interests

Nothing to declare

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Near Misses

Please fill out this survey as honestly as you can. All responses will be completely anonymous.

1. Have you ever made a mistake that could potentially have compromised patient safety?

2. How did the realisation of making that mistake make you feel?

3. Have you ever made any of the following mistakes? If yes how many times?

A) Anticoagulation error e.g. Clexane, warfarin
B) Insulin error
C) Allergy prescribing error (please specify)
D) Other prescribing error (please specify)
E) Transfusion error
F) Identity error (any error in which wrong patient was identified)

4. What factors contributed to you making those mistakes? e.g. time pressures, lack of senior support....

5. How often do you make mistakes and what impact do they have? See definitions on reverse.

	Error	Near Miss	Adverse Event		
			Low harm	Moderate Harm	Significant Harm
Never					
Once					
Monthly					
Fortnightly					
Weekly					
Twice weekly					
Daily					

6. Do you discuss the mistake's you make with anyone? If yes who?

7. What barriers have stopped you from discussing your mistakes with other doctors?

8. Do you think a near misses session once a month, in which you could discuss mistakes with other junior doctors and one senior doctor, would be helpful? If yes why? If no why not?

Thank you for filling out this survey.

WHO Definitions:

Error:

The failure of a planned action to be completed as intended (i.e. error of execution) or the use of a wrong plan to achieve an aim (i.e. error of planning) (3). Errors may be errors of commission or omission, and usually reflect deficiencies in the systems of care.

Adverse event:

An injury related to medical management, in contrast to complications of disease (4). Medical management includes all aspects of care, including diagnosis and treatment, failure to diagnose or treat, and the systems and equipment used to deliver care. Adverse events may be preventable or non-preventable.

Near-miss:

Serious error or mishap that has the potential to cause an adverse event but fails to do so because of

How did the realisation of making a mistake make you feel?

- Incompetent
- Guilt, like an idiot, sadness, like a bad doctor, worried about how easy it would be to make further mistakes in the future.
- Awful, very upset that I may have injured a patient, and ashamed. Worried I may have disappointed seniors.
- Awful, anxious of what if?
- Dreadful, made me doubt my ability as a doctor.
- Awful, sick, afraid, shame, very upset.
- It was awful I felt really bad.
- Panic, sheer terror until I found out I had a near miss and patient was ok.
- Bad
- Guilty
- Embarrassed, ready to make a big effort so it doesn't happen again.
- Stupid and regretful.
- Terrible
- Really bad
- Awful

Fig 2. Responses to question 2 of baseline questionnaire. 2 FY1s did not answer this question.

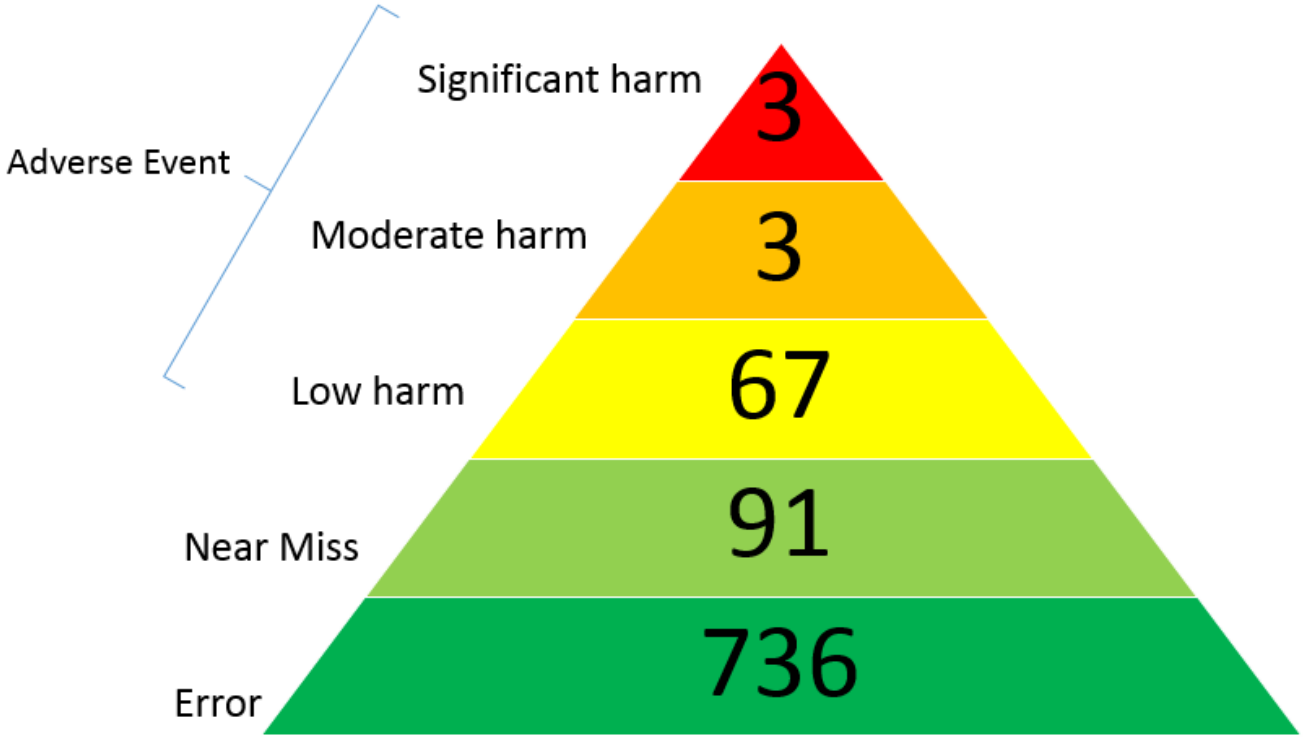

Fig 3. Breakdown of mistakes made by FY1s over first 20 weeks of FY1, calculated from responses to question 5.

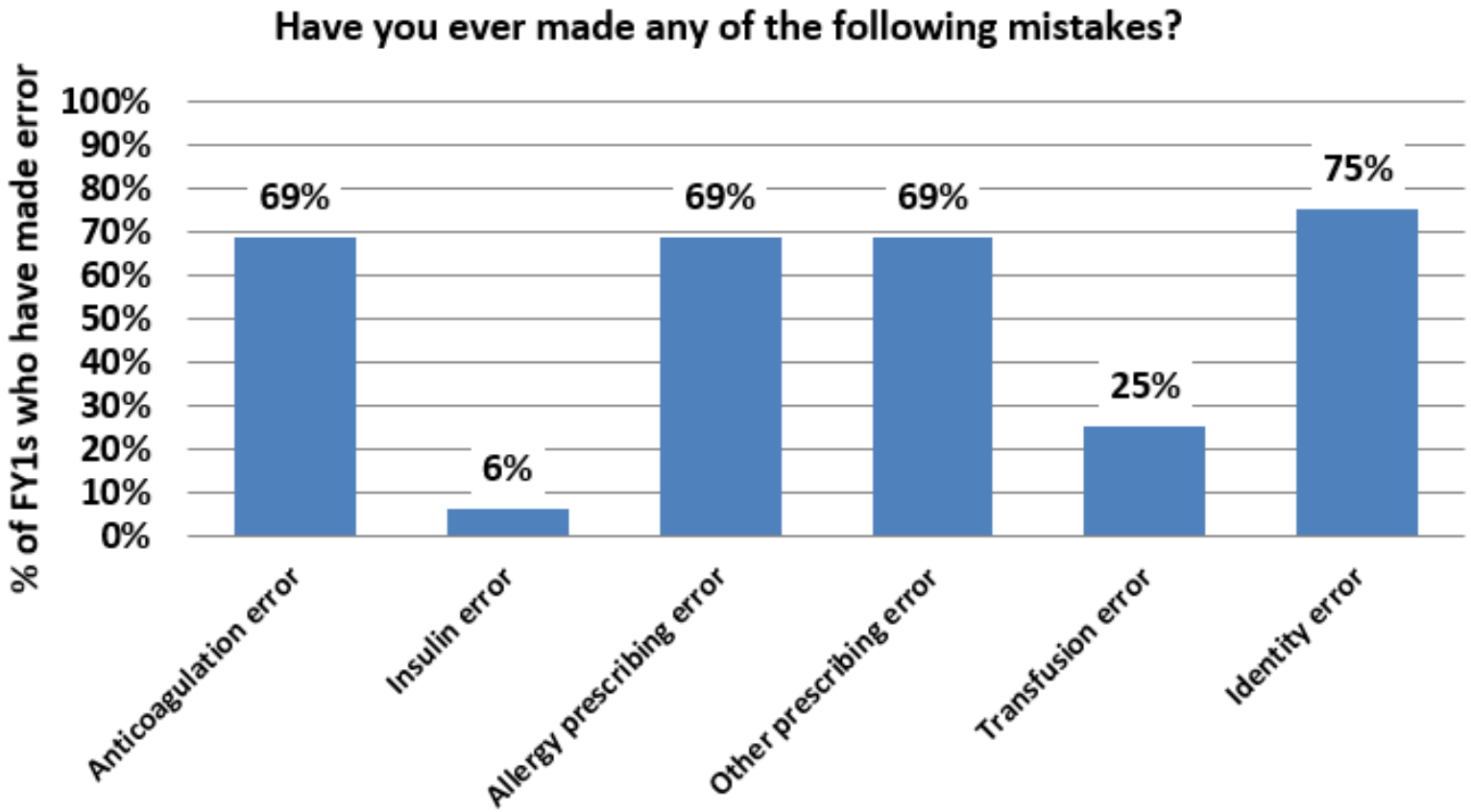

Fig 4. Percentage of FY1s who have made common categories of mistakes, calculated from responses to question 3.

Near Misses Meetings

Aims:

1. To promote a culture of “no blame”
2. To share learning
3. To feedback information and make recommendations to clinical governance

Set up:

1-2 hour FY1 meeting once a month during Tuesday FY1 teaching time.

- 1 junior doctor to lead the session
- 1 scribe to complete certificates
- 1 consultant to facilitate and offer advice or guidance (start session by describing a mistake that they have made)

Not present at the meeting:

- Consultant Patient Safety Lead to feedback any relevant issues to
- Contact in clinical governance to feedback issues and immediate concerns to

Recommendations should also be fed back to the Patient Safety Steering Group and the Safer Medicines group which both meet monthly.

The session:

Introduction

Matters arising

Feedback from previous concerns raised

Near Misses:

Invite juniors to discuss a mistake they made

For each mistake discussed-

- What happened?
- When did it happen?
- Why did it happen? Contributing factors.
- What have you learned? What do you want others to learn from your mistake?
- Key actions- Any recommendations for system change to prevent further mistakes?

Close

Problem Based Learning Record

Chair		Date
Scribe		
Brief Summary of Problem		
Contributory Factors		
Personal Learning and Reflection		
Key Actions	Individual: •	
	Organisational: •	
Consultant Signature:		

Near Misses and Recommendations

Mistakes Discussed	Recommendations/Key Actions
e.g. Tazocin to penicillin allergic patient	Red allergy band

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Improving the quality of weekend handover at Yeovil District Hospital

Sarah Sneller, Karolina Lada, Charlotte Turner, Sinead Millwood, Bethan Jervis, Julia Barr, Louise Farrell
Yeovil District Hospital

Abstract

“Handover of care is one of the most perilous procedures in medicine” (British Medical Association, Safe Handover, Safe Patients). The system in place for weekend handover at YDH was deemed disorganised, unstructured and frequently missing key pieces of information, leaving the on-call Foundation Year 1 (FY1) doctor with only vague jobs and management plans. Baseline surveys demonstrated that junior doctors felt the system was inadequate, potentially compromised patient safety and increased their stress levels.

In order to improve this problem a structured weekend handover proforma was created, comparable with the “Out of hours handover record keeping standards: template” from the Royal College of Physicians. This was made readily accessible on the local intranet. Education sessions were organised for the FY1 and FY2 doctors. The impact of the newly introduced proforma was measured using feedback surveys each week from the FY1 on ward cover for six months. A further change implemented was the introduction of a Friday Ward Round proforma. The aim was to reduce the time required to review notes by the on-call doctor, to minimise avoidable weekend jobs and to improve compliance with the management plans.

The results demonstrated 100% compliance with the new proformas. There were notable improvements in the presence of a plan (37.5% to 91.7%, max. 100%), a minimum of two patient identifiers (68.8% to 100%) and relevant background information (62.5% to 100%). Qualitative data showed a much higher level of satisfaction with the new system.

Future plans include rolling out electronic handover to improve problems such as illegible handwriting and missing data (enable ‘compulsory’ fields), and also for this system to be implemented Trust-wide.

Problem

The handover of patient care has been described as one of the most perilous procedures in medicine. Professor Sir John Lilleyman from the National Patient Safety Agency describes this as “a major contributory factor to subsequent error and harm to patients” in a recent document produced by the British Medical Association (BMA). The junior doctors working in Yeovil District Hospital (YDH) echoed these concerns regarding the weekend handover system.

The current system required the ward doctors to compile a list of jobs for the on-call Foundation Year 1 (FY1) doctor. This was usually handwritten on a blank piece of paper and left for collection in one of the medical wards on a Friday evening. The junior doctors reflected on their experiences and felt that a lack of structure lead to an inconsistency amongst each handover and often a lack of detail. A typical example of a job being handed over was:

“Ward 4, Mrs Bloggs: UTI, check bloods”. Due to a lack of adequate information (eg patient identifiers, relevant past medical history) it was often very difficult to initiate a plan to complete each job. It was felt that this had often compromised the safety of patients, was an increased source of junior doctor stress levels, and led to additional hours being worked. It was therefore decided to address this issue with the fundamental aim of improving patient care.

Background

The General Medical Council states that it is our duty to contribute to the safe handover of patients.[2] The care of a patient may be handed over between several different clinical teams throughout even a short hospital stay. This is of paramount importance during a weekend where staffing levels are reduced for two or more consecutive days. Indeed, studies have shown a significant increase in mortality of patients admitted at the weekend.[3,4] The British Medical Association have issued guidance for junior doctors in creating a safe handover of their patients in recognition of our changing working patterns.[1] Despite this, poor quality of weekend handover has been identified as a contributing factor to significant adverse events.[5]

At Yeovil District Hospital, the medical team is reduced to just four or five doctors over the weekend. This small team is led by the medical registrar who is joined by either one or two senior house officers (SHOs), and Foundation Year 1 trainee (FY1) to clerk and care for all new admissions. They are largely based in the emergency department and medical admissions unit. There is one “ward cover” FY1 to attend all other medical inpatients in the hospital, covering five medical wards and their outliers in addition to the coronary care and high dependency units. The role of the ward cover FY1 involves the completion of jobs handed over from the medical doctors each Friday, in addition to responding to new requests from each ward. The FY1 will rarely be familiar with the patients in question. In reviewing an unwell patient, or chasing the result of an investigation, the doctor will be reliant on information that has been handed over or will alternatively need to undertake a

detailed review of the medical notes.

Baseline measurement

Qualitative and quantitative data was obtained to provide baseline measurements for this project (n = 7). First, a survey was sent to all FY1s and those FY2s who had done a medical job as an FY1 at Yeovil District Hospital. The survey included ranking on a five-point scale the level of satisfaction with the presence of sufficient patient identification, relevant background, the diagnosis/primary issue, the weekend job, and a management plan. The second section of the survey enquired (based on a five-point scale) to what extent the FY1/FY2 agreed with a series of statements. These included questions about the content of the handover, whether they felt it compromised patient safety, their stress levels, and overall satisfaction and quality regarding the handover sheet.

Our results showed that 100% of FY1s and FY2s were unsatisfied with the current handover. Specifically, 29% were dissatisfied with the job itself, 29% were dissatisfied with the patient identifiers, 86% were dissatisfied with the main problem/diagnosis, 100% were dissatisfied with the background, and importantly, 86% were dissatisfied with the plan. The results of the second section revealed that 86% believed the current handover contributed to their stress levels and 100% had to work additional hours to compete their handover jobs. 71% of respondents agreed that they spent a disproportionate amount of time reviewing patients' notes, 86% disagreed or strongly disagreed that they had a clear idea of what the plan was for each job, 100% either disagreed or neither agreed/disagreed that they were provided with sufficient handover information and 29% agreed that the majority of requests made were inappropriate. It also revealed that 71% of foundation doctors felt that the current handover compromised patient safety. One respondent commented, "jobs often marked as 'check bloods' with no idea what to do if things were abnormal. Difficult to read people's handwriting."

Based on subjective data, the baseline survey clearly showed dissatisfaction with the weekend handover in its current format. Quantitative data was also collected by analysing the content of the handover sheets over two weekends (n = 15). The main problem areas identified were a lack of patient identifiers (30%), lack of background (22%), and lack of a plan (53%).

In summary, the baseline surveys demonstrated that there was universal agreement amongst junior doctors that the current handover was inadequate, potentially compromised patient safety, and increased their stress levels.

See supplementary file: ds3497.pdf - "Baseline Measurement Data"

Design

The first intervention was to standardise the handover sheets given to the on-call FY1. A proforma was devised consisting of a table containing the minimum essential information believed to be required for each patient that was handed over (please see attachment under Strategy - "PDSA cycles and handover proforma"). This was comparable to the template produced by the Royal College of Physicians.[9] The proforma specifically had a column for 'Job' and a separate column for 'management plan' in response to feedback from junior doctors as this was most frequently inadequate and a particular source of frustration.

The format for this proforma was a universally compatible word processing document which was uploaded to the Trust intranet. This made it easily accessible for all doctors from any Trust computer. An additional benefit of this format was that the proforma could be downloaded and filled in electronically then printed, or printed blank so the doctor could complete it by hand.

A session was held to educate colleagues about the project, each section of the handover proforma was discussed, and how it could be accessed. This was also used as an opportunity to receive their feedback about the proforma before implementation.

This handover proforma has been designed with the intention that it should be used as a basis for an electronic handover system in the near future. Collaboration with the IT department has led to the production of prototype systems. The prototype allows the on-call FY1 to easily prioritise and categorise jobs (eg by date, by type of job), to remove them from the list once they've been completed (stored in a "completed" section), and eliminates the "messy" factor of carrying around stacks of loose pieces of paper thus also offering better patient confidentiality. It is felt that e-handover may be more sustainable in the long-term especially as the Trust is moving in the direction of more electronic methods, eg vital observations charts, e-prescribing, and an e-handover would be compatible with this system.

The second intervention was another education session run by a senior house officer two months after the proforma was introduced. On the basis of weekly handover analysis, we found that not all sections of the handover sheets were always filled out. Therefore, the aim of the education session was to remind the juniors to fill in all of the categories, to provide further clarification about the appropriateness of weekend jobs and to answer any further questions regarding the new handover.

The third intervention was the introduction of a Friday ward round sheet. This was based on a project done by Dr Victoria Cordell and Dr Sarah Kipling (FY1 doctors at Royal United Hospital Bath NHS Trust). The aim was to encourage junior doctors to plan for the weekend when reviewing patients on their existing ward round, and to reduce the amount of time it takes the FY1 on call to review patients' notes at the weekend. The summary sheet contained space to fill in the Friday ward round review with a separate space to document a clear weekend plan. It also contained reminders regarding Friday jobs, such as reviewing the resuscitation status, ensuring the drug chart was re-written in anticipation should it run out over the weekend, and completing the warfarin chart. This sheet has proven to be useful to both the on-call FY1 and other ward team members for viewing the current plan for patients who may unexpectedly require medical attention over the weekend. It will require input from both the juniors and administration teams (such

as the ward clerks) to remain sustainable. Further feedback from junior and senior doctors as well as nursing staff will be obtained regarding this intervention.

Strategy

Please see attachment "PDSA cycles and handover proforma".

See supplementary file: ds3596.pdf - “PDSA cycles and handover proforma”

Post-measurement

Method

There are five medical wards in Yeovil District Hospital often with two teams per ward providing a weekend handover. A sample of four handed-over patients per medical team handover sheet was analysed every weekend and marked ‘Yes’ or ‘No’ on the basis of whether eight different criteria were met. The patients were chosen by the first and last patient on each handover sheet (if two handover sheets were provided by one ward), or the first two and last two patients (if just one handover sheet from a ward was provided). Data were collected from the 22nd of November to the 13th of April. Some weekends were missed due to the handover sheets being misplaced by the weekend on-call team.

In addition to the quantitative date, a reflective survey was carried out with the on-call FY1 after every weekend. The aim was to collect data on whether they felt they had a clear management plan for each patient, what time they finished work, whether they had time for a break, the overall quality of the handover, and any further suggestions or comments.

Results

Following the introduction of the proforma, the amount of handovers containing the minimum number of patient identifiers improved and despite a small drop there has been incremental improvement compared with the baseline data. Percentage of handovers containing background information about the patient also improved and increased further following our second and third PDSA cycles.

Prior to introducing our weekend handover, less than 50% of the handovers had a clear plan for the patient. Since introducing the proforma and running an education session at least 80% of handovers now have a plan. Data from the reflective survey showed an appreciable increase in the satisfaction with the presence of a clear plan. During the final few weeks of the project, 100% of the handovers were consistently marked as “top quality”.

The comments received from junior doctors about the new handover sheet were very positive, in particular with reference to the plan section. One comment stated “[it was] Extremely useful to have a standardised handover sheet with clear plans and relevant background information about the patient, especially compared to the blank sheets we used before”. Please see the supplementary file attached.

See supplementary file: ds3513.pdf - “Results”

Lessons and limitations

There were a number of challenges along the way. There was some resistance initially from one of the FY1 doctors on a medical ward. That said, the team otherwise engaged the juniors very well and the uptake was generally excellent. Despite designing proformas to fill in, there were occasionally problems with unclear handwriting and not all the fields being filled in. An e-handover that incorporates compulsory fields prior to submitting would address both these problems.

It was difficult to objectively measure patient safety. Ideas such as liasing with the outreach team, counting the number of incidents and using the MEWS scoring over the weekend presented with their own difficulties. Furthermore, there are a number of extraneous variables influencing patient safety that cannot be accounted for. This means that questions about patient safety were incorporated into the surveys and subjective data was collected as a representative measure.

Informal positive feedback was received from doctors and, unexpectedly, even nurses on the Friday ward round sheet after it had been implemented. However, formal evaluation of this cycle of the project has not yet been performed.

At the time of writing, one of the team members printed and distributed the forms each Thursday. In order for this to be sustainable, the ward clerks and IT department will need to be fully involved. In addition, the team will ensure the new take of doctors in August 2014 are well informed about the project. This will be achieved by including it in the 'Essential information for new doctors' session run by the outgoing FY1s, and during the formal shadowing period to ensure they are educated about how to use the forms.

The project was run within the general medicine department. The other departments each have their own methods to hand over patients for the weekend, however it was felt that the handover proforma created for medical handover has potential to be implemented with equal success in other departments, such as surgery and orthopaedics. To achieve good compliance elsewhere, further education would be required.

The future aim would be to roll-out an e-handover. A prototype was designed but due to IT staff limitations this was not fully completed. As Yeovil Hospital moves towards e-healthcare records (including electronic prescribing), the aim would be to incorporate the handover into this system. E-handover has several advantages including reduction of paper usage thereby being more environmentally friendly, potentially reduce problems with patient confidentiality being compromised, and lead to overall greater efficiency.

Conclusion

An evident problem was identified with the poor quality of medical handovers at the weekend in Yeovil Hospital, demonstrated clearly by qualitative and quantitative baseline measurements. Errors through human factors (such as spending excessive time reviewing notes, deciphering handwriting, incorrect patient identification) could be minimised by the presence of standardised methods. Therefore a handover proforma was developed and implemented and its efficacy was measured on a weekly basis using subjective survey data and quantitative analysis of the information present on all of the medical handover sheets.

The results demonstrate increased satisfaction among junior doctors using the new handover proforma. Handovers are now more likely to contain the appropriate number of patient identifiers (70-100%), relevant background (62-100%), and perhaps most importantly, a clear management plan (40-92%). The latter was noted by members of the Exeter QIA conference, where positive feedback was received on the uniqueness of including an independent section for a management plan. In addition, Friday ward round summaries have been implemented which, on the basis of preliminary multidisciplinary feedback, have optimised time spent reviewing notes by the on-call FY1, and has also benefited the nursing staff.

It is felt that this project has improved patient safety, despite challenges in its objective measurement. A high level of junior doctor satisfaction was achieved with ultimately complete engagement. On the basis of success so far, future plans include development of e-handover and implementation in other departments.

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2. General Medical Council. Good Medical Practice. General Medical Council; 2013.
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Declaration of interests

Nothing to declare.

Acknowledgements

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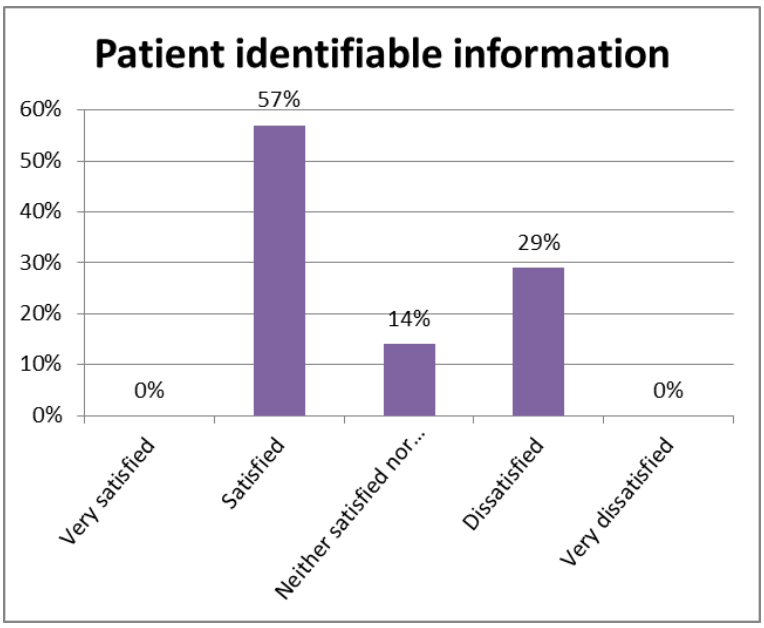
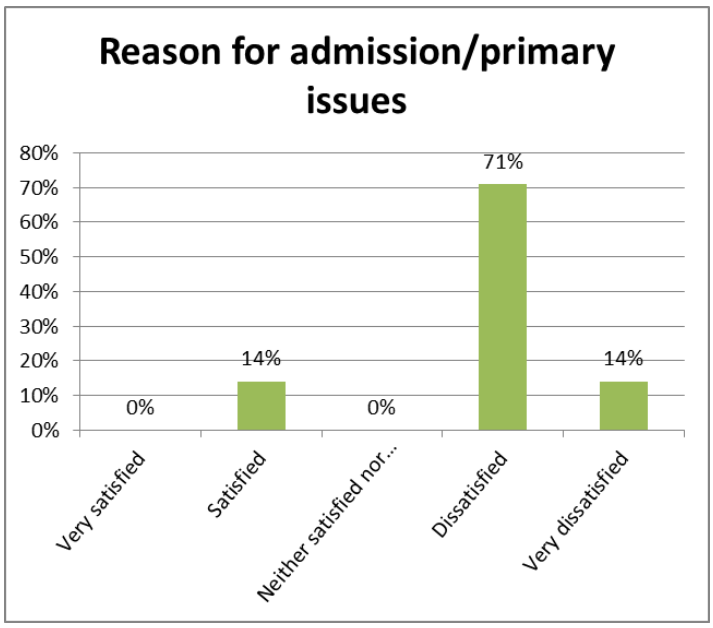
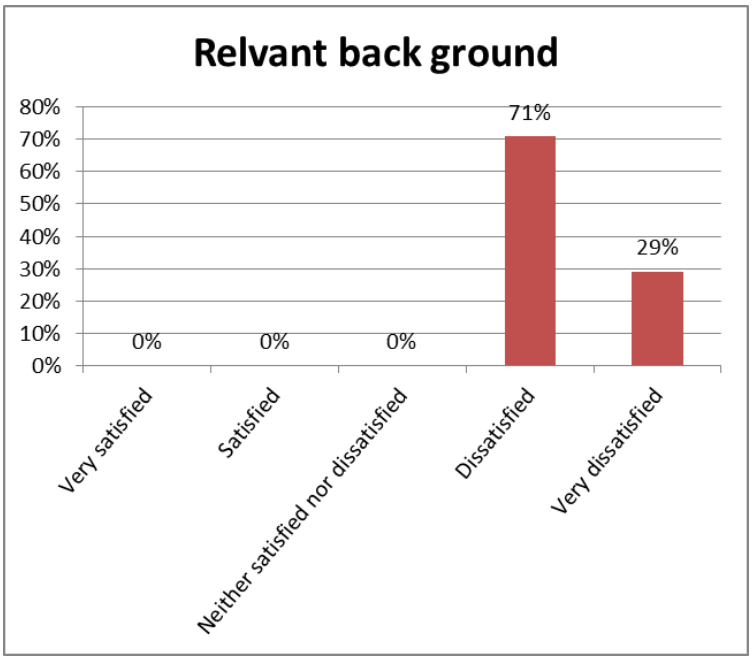
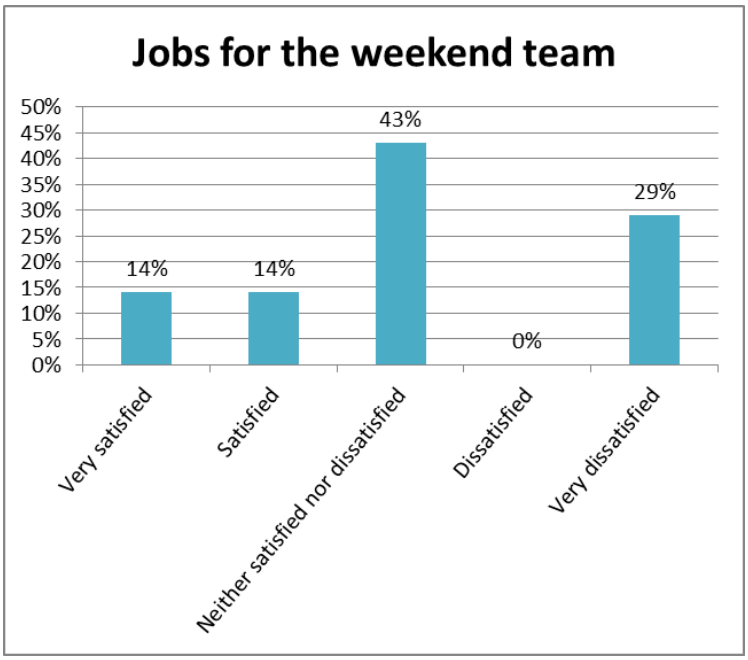
Baseline Measurement

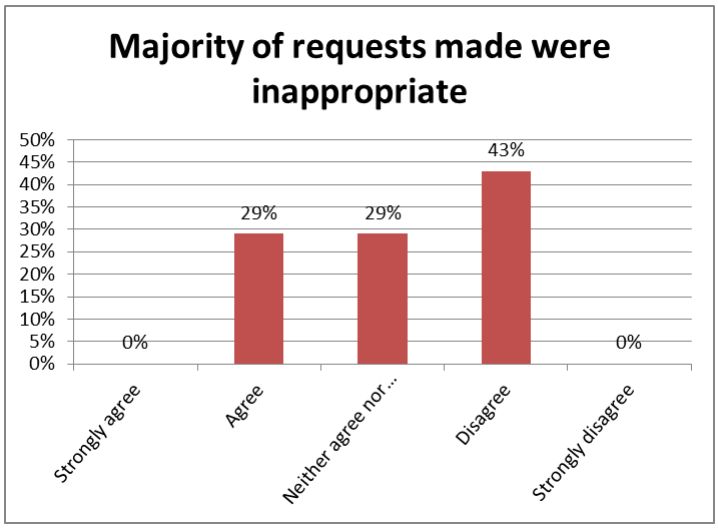
Baseline Survey Data

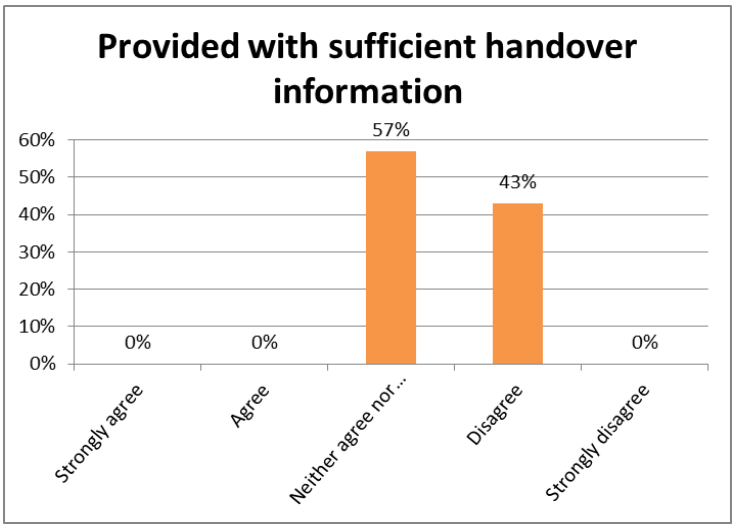


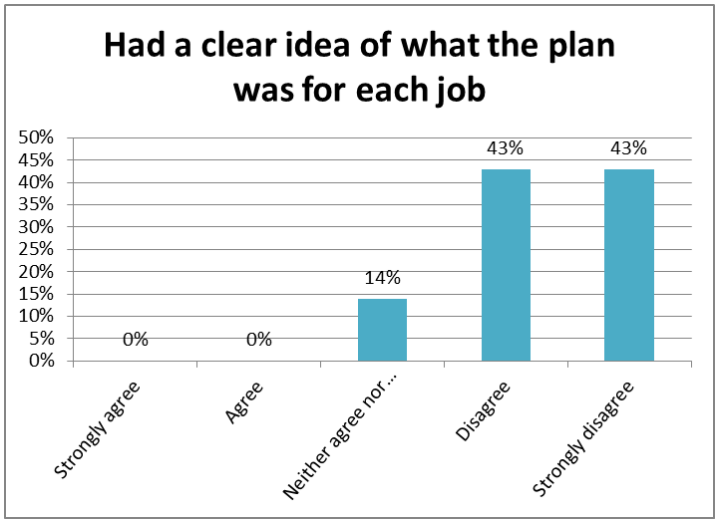


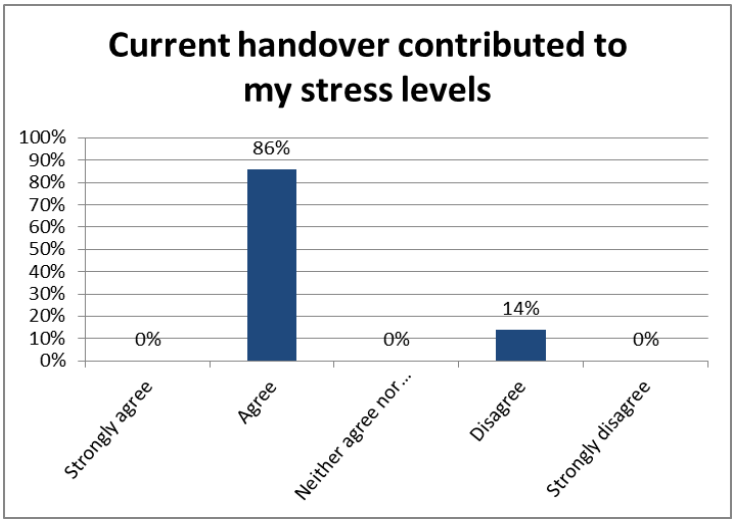


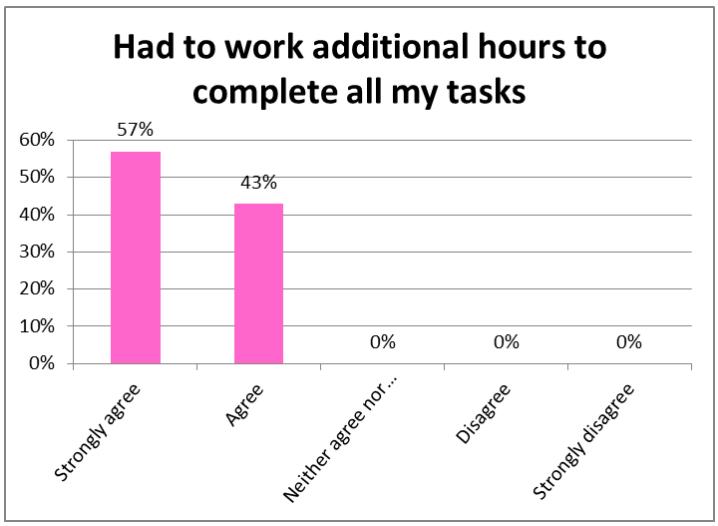


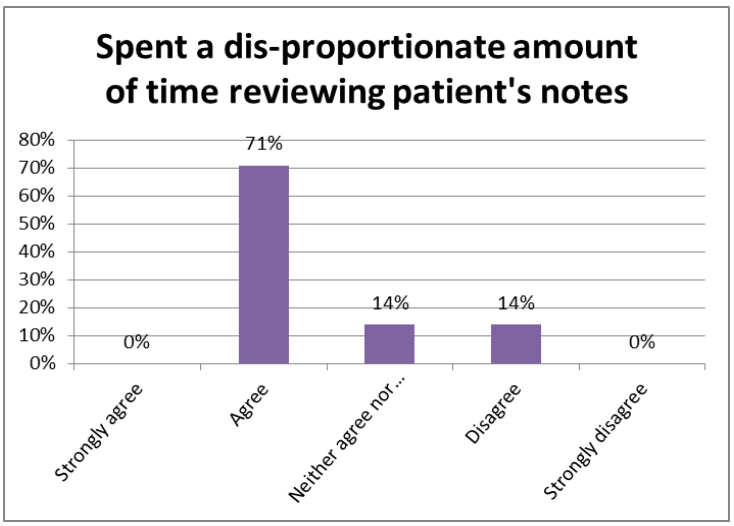

Majority of requests made were inappropriate
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
0%
29%
29%
43%
0%
Strongly agree
Agree
Neither agree nor ...
Disagree
Strongly disagree

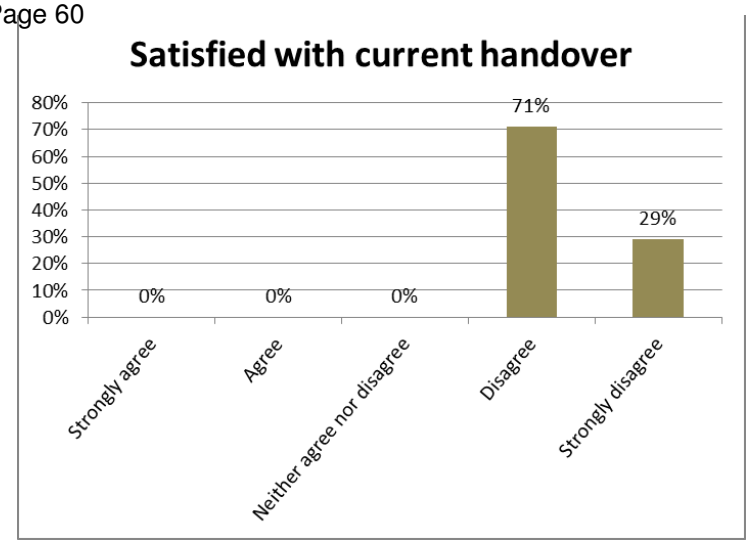

Provided with sufficient handover information
60%
50%
40%
30%
20%
10%
0%
0%
0%
57%
43%
0%
Strongly agree
Agree
Neither agree nor ...
Disagree
Strongly disagree


Had a clear idea of what the plan was for each job
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
0%
0%
14%
43%
43%
Strongly agree
Agree
Neither agree nor ...
Disagree
Strongly disagree


Current handover contributed to my stress levels
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0%
86%
0%
14%
0%
Strongly agree
Agree
Neither agree nor ...
Disagree
Strongly disagree

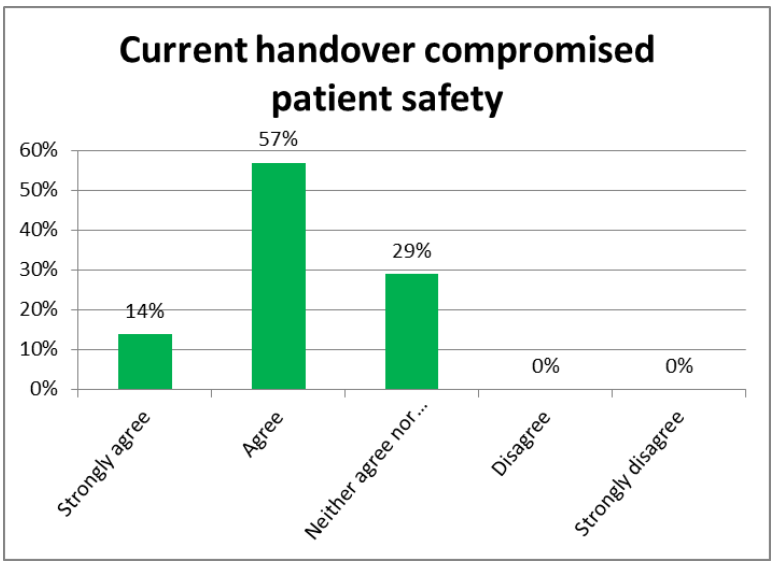

Had to work additional hours to complete all my tasks
60%
50%
40%
30%
20%
10%
0%
57%
43%
0%
0%
0%
Strongly agree
Agree
Neither agree nor ...
Disagree
Strongly disagree


Spent a dis-proportionate amount of time reviewing patient's notes
80%
70%
60%
50%
40%
30%
20%
10%
0%
0%
71%
14%
14%
0%
Strongly agree
Agree
Neither agree nor ...
Disagree
Strongly disagree



100% of junior doctors surveyed are not satisfied with the current handover

71% of junior doctors surveyed believe the current handover compromised patient safety



Analysis of handover data

	Weekend 1 23rd – 24th Nov 2013	Weekend 2 30th – 1st Dec 2013
Patient name	100.0%	100.0%
Patient identifiers (hospital number or DOB)	68.8%	71.4%
Ward	93.8%	100.0%
Background/relevant PMH	62.5%	92.9%
Main issues	81.3%	85.7%
Job for weekend	100.0%	100.0%
Was a plan present?	37.5%	57.1%
Easy to distinguish between days?	87.5%	85.7%

Main problem areas

PDSA cycles – Improving the Quality of Weekend Handover at Yeovil District Hospital

	Aim	Plan	Prediction	Do	Study	Act
Cycle 1 Dec 2013	Improve quality of weekend handover sheets	Introduce a standardised proforma available on the Trust intranet	Doctors will handover more information about each patient	There was an improvement in the quality and clarity of handover It needed more space to write and a for extra tick boxes for 'possible weekend discharge'	There was an overall improvement in quality, particularly patient identifiers, background and plans	Amend proforma according to feedback
Cycle 2 Dec 2013	Improve quality of weekend handover sheets	Improve standardised proforma	Increase usability	There was an increase in the number of doctors using the handover and overall satisfaction	Increased number of doctors using the proforma	Continue and implement in other specialties
Cycle 3 February 2014	Improve quality of weekend handover	Education to stakeholders	Doctors may handover less inappropriate jobs and further Identification of problems with new handover	There was an improvement in overall handover but no demonstrable reduction in inappropriate handovers	No new problems were identified, but issues with poor handwriting	Problems could be addressed with e-handover. Aim to improve inappropriate handovers with experience
Cycle 4 April 2014	Reduce time taken to review patient notes at the weekend, reduce jobs for FY1 on call, ensure clear individual patient plans for the weekend	Introduction of Friday WR/weekend plan proforma	More jobs are done ready for the weekend, a reduction in the time taken for patient reviews at the weekend Potential for resistance to form filling	Initially viewed as extra work, comments that two pages was too much, poor compliance Good feedback from weekend team	Felt it was not usable enough on a Friday	Incorporate the Friday ward round into the weekend planning sheet, make it one sheet. Amended with feedback taken from juniors
Cycle 5 April 2014	Increase usability	Improve the Friday ward round/ weekend plan sheet	Greater engagement with using the weekend sheet	Doctors found this summary an improvement and less time consuming than the previous version	Greater number of users	Continue with current sheet and implement in other specialties, ensure distribution of sheet on a Thursday evening
Cycle 6 January 2014 onwards	Improve legibility of handover, location of patients and organisation of jobs	Electronic handover	Will eliminate risk of losing sheets, make sections compulsory, legible and easier for jobs to be organised.	Prototype designed with IT department but not yet fully implemented	Not yet achieved	To implement the e-handover in the newt coming months

PDSA cycles – Improving the Quality of Weekend Handover at Yeovil District Hospital

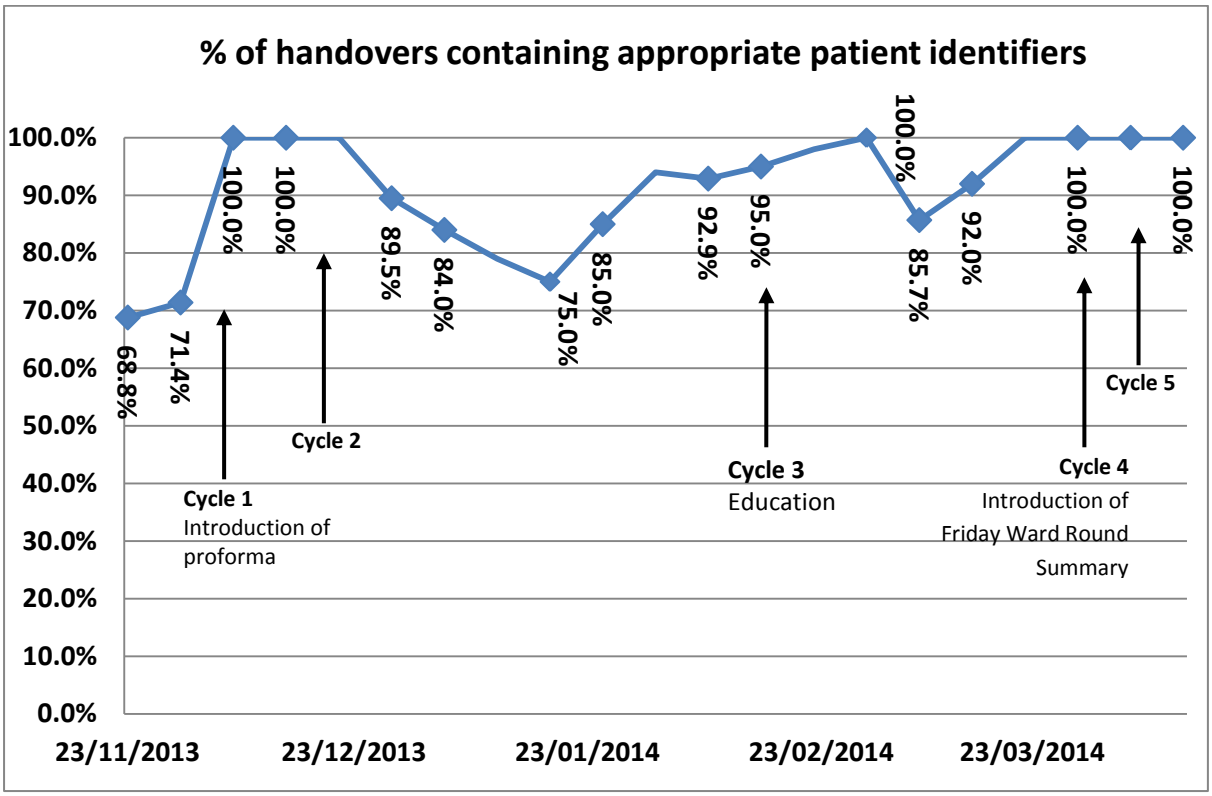
Final handover proforma implemented following Cycle 2

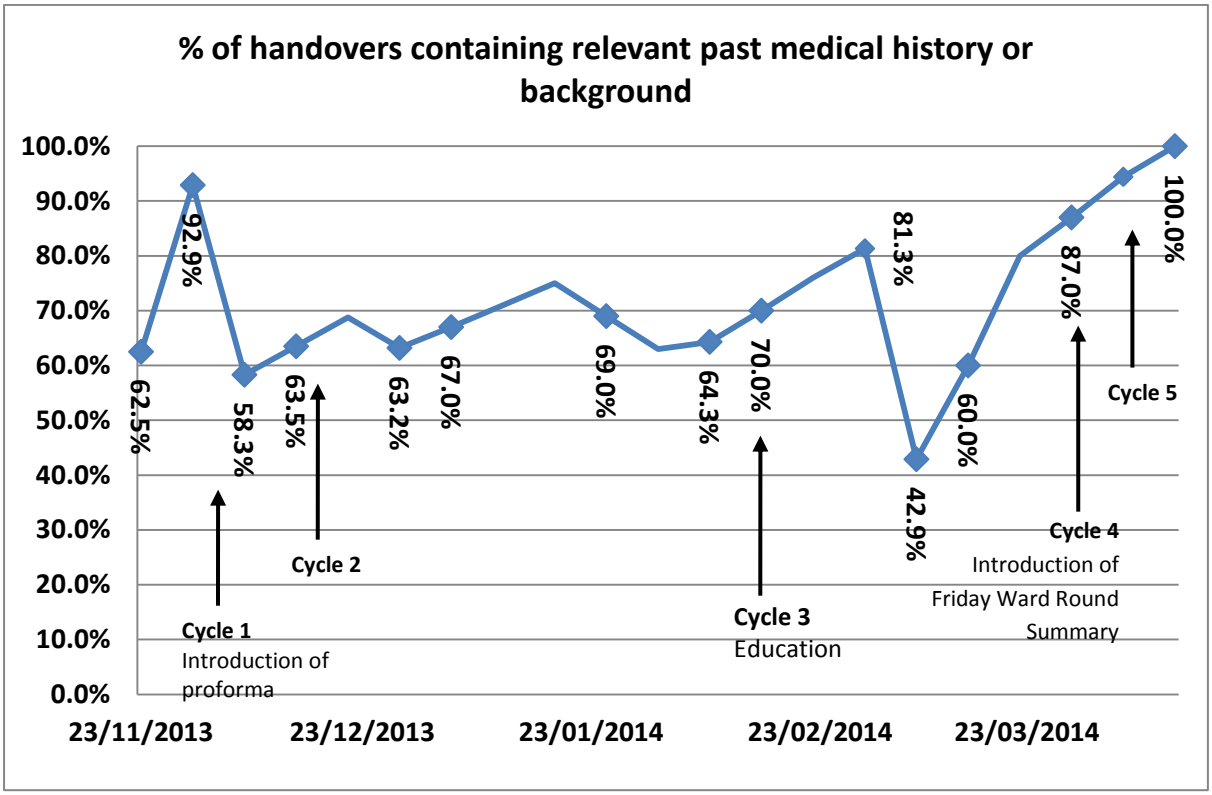
Handover from: **Grade:** **Date of handover:** **Ward:**

Patient demographics/ sticker	Is job for:	Patient:	Relevant PMHx/ additional info	Main problem/diagnosis	Job	Management Plan:	Job done?
Name **Hosp no.** **DOB**	☐ Sat ☐ Sun	☐ To see ☐ To be aware of ☐ Ix to chase ☐ Possible w/e d/c					
Name **Hosp no.** **DOB**	☐ Sat ☐ Sun	☐ To see ☐ To be aware of ☐ Ix to chase ☐ Possible w/e d/c					
Name **Hosp no.** **DOB**	☐ Sat ☐ Sun	☐ To see ☐ To be aware of ☐ Ix to chase ☐ Possible w/e d/c					
Name **Hosp no.** **DOB**	☐ Sat ☐ Sun	☐ To see ☐ To be aware of ☐ Ix to chase ☐ Possible w/e d/c					
Name **Hosp no.** **DOB**	☐ Sat ☐ Sun	☐ To see ☐ To be aware of ☐ Ix to chase ☐ Possible w/e d/c					

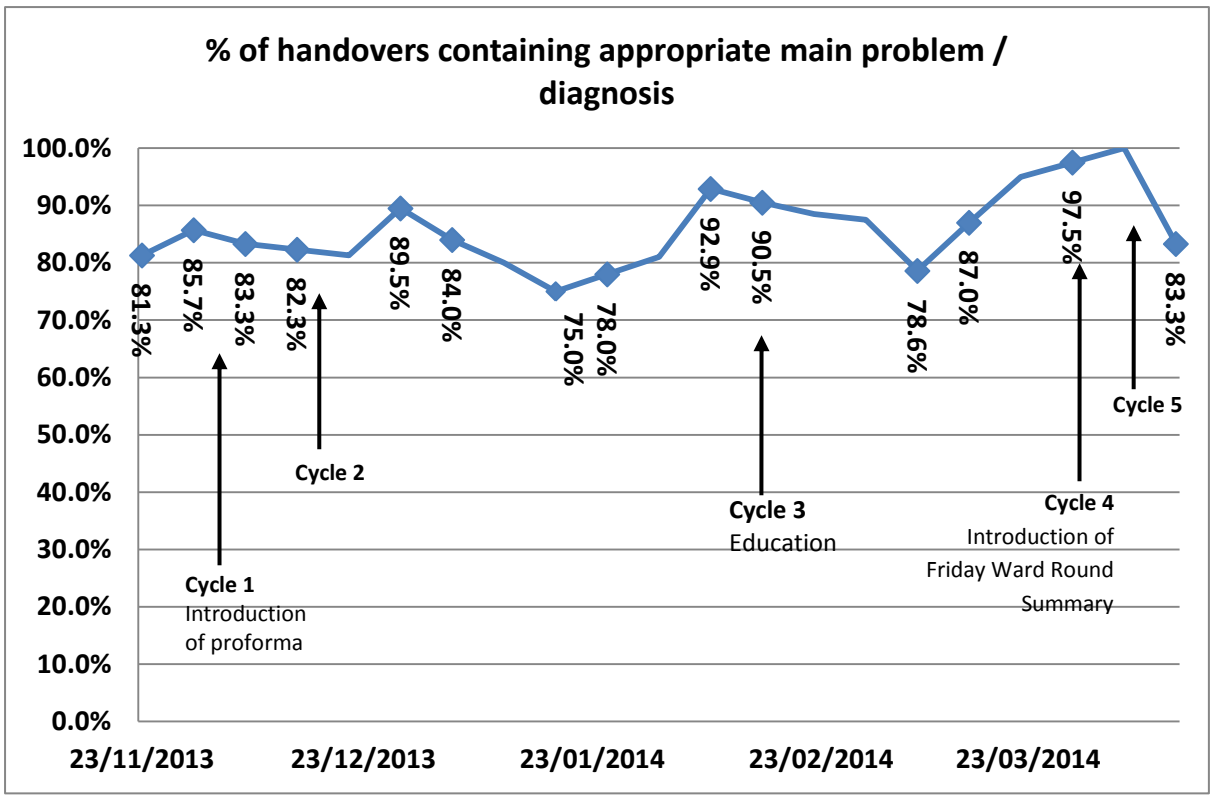
Hospital

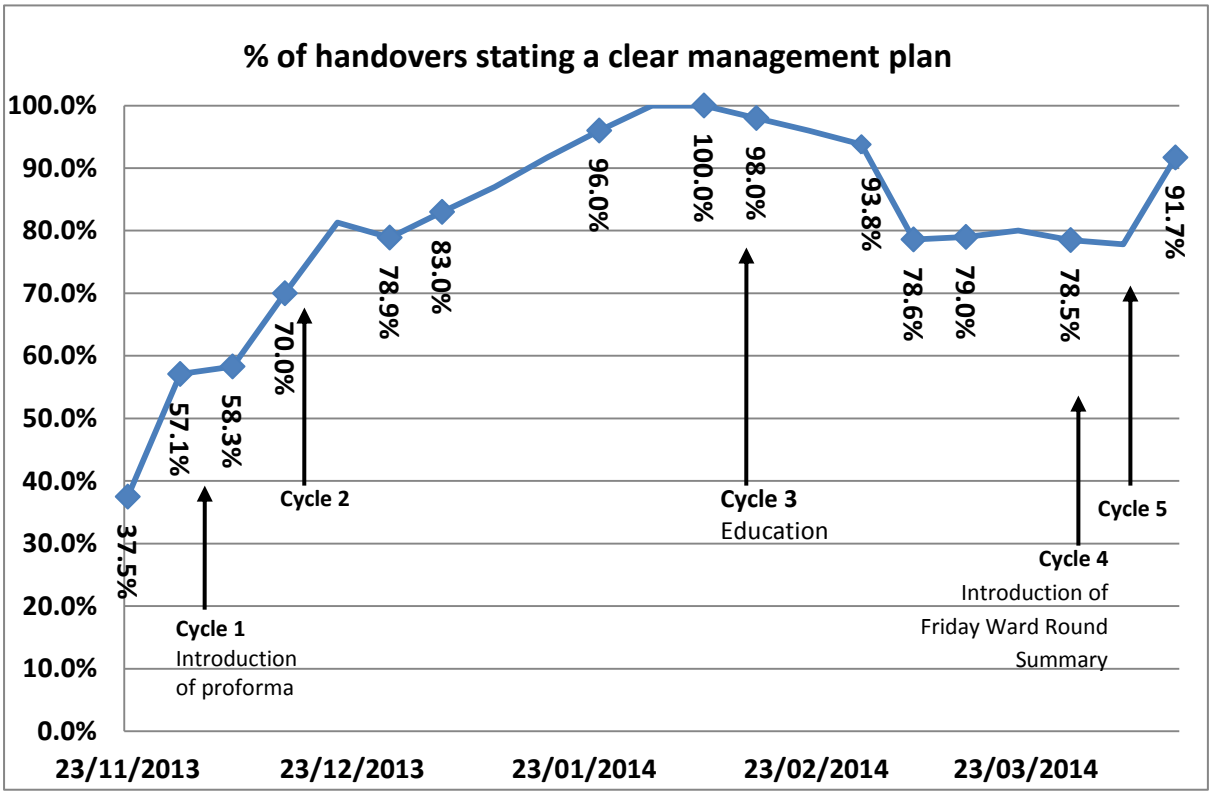
Results



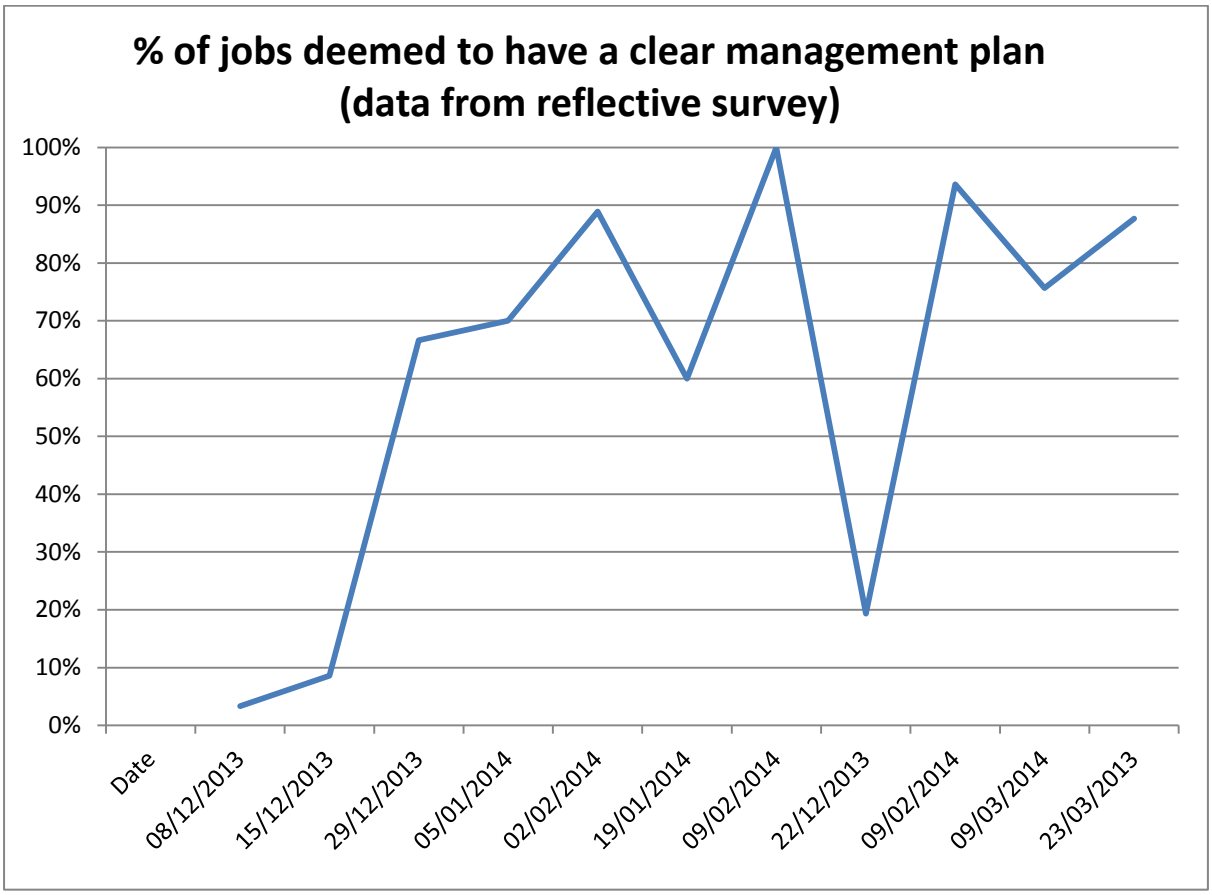


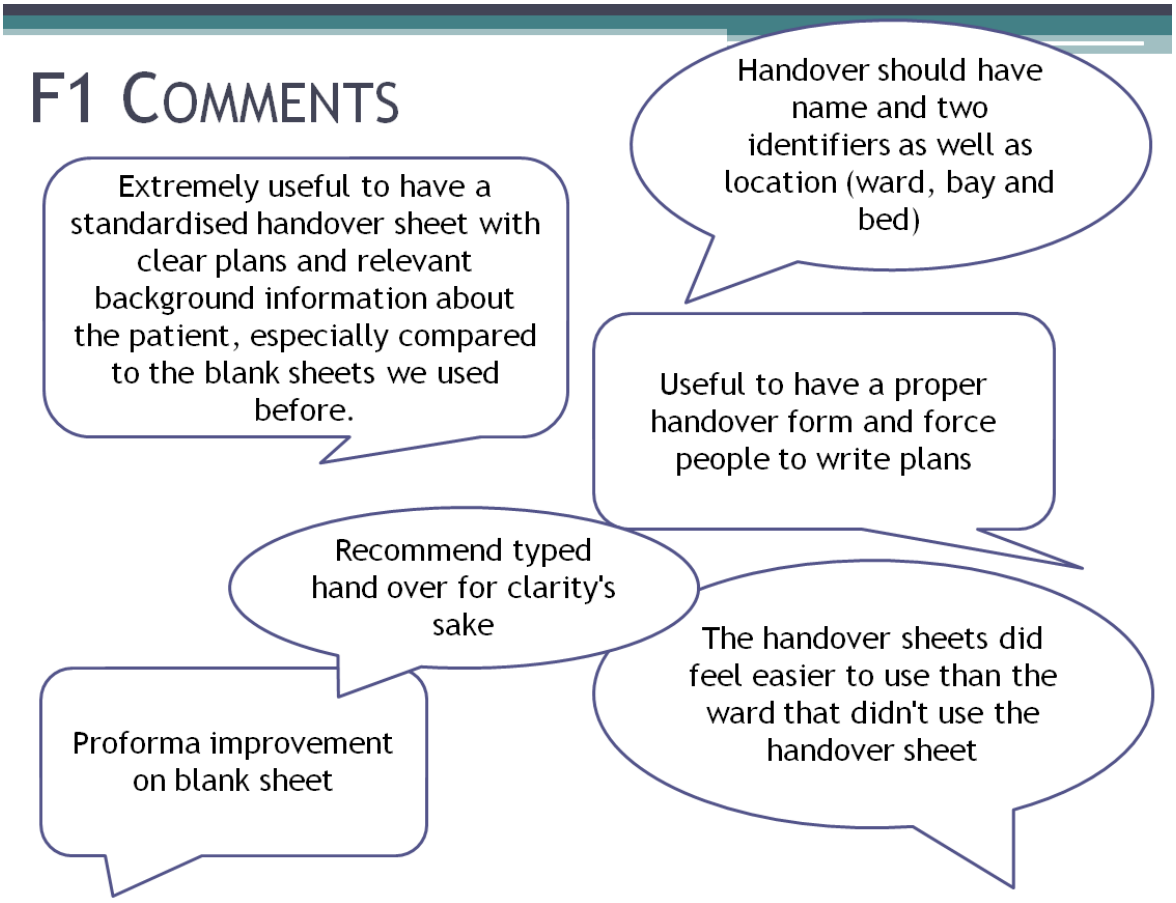
Hospital


% of handovers containing appropriate main problem / diagnosis
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
81.3%
85.7%
83.3%
82.3%
89.5%
84.0%
75.0%
78.0%
92.9%
90.5%
78.6%
87.0%
97.5%
83.3%
Cycle 1 Introduction of proforma
Cycle 2
Cycle 3 Education
Cycle 4 Introduction of Friday Ward Round Summary
Cycle 5
23/11/2013
23/12/2013
23/01/2014
23/02/2014
23/03/2014


% of handovers stating a clear management plan
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
37.5%
57.1%
58.3%
70.0%
78.9%
83.0%
96.0%
100.0%
98.0%
93.8%
78.6%
79.0%
78.5%
91.7%
Cycle 1 Introduction of proforma
Cycle 2
Cycle 3 Education
Cycle 4 Introduction of Friday Ward Round Summary
Cycle 5
23/11/2013
23/12/2013
23/01/2014
23/02/2014
23/03/2014

Hospital


% of jobs deemed to have a clear management plan
(data from reflective survey)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Date
08/12/2013
15/12/2013
29/12/2013
05/01/2014
02/02/2014
19/01/2014
09/02/2014
22/12/2013
09/02/2014
09/03/2014
23/03/2013


F1 COMMENTS
Handover should have name and two identifiers as well as location (ward, bay and bed)
Extremely useful to have a standardised handover sheet with clear plans and relevant background information about the patient, especially compared to the blank sheets we used before.
Useful to have a proper handover form and force people to write plans
Recommend typed hand over for clarity's sake
The handover sheets did feel easier to use than the ward that didn't use the handover sheet
Proforma improvement on blank sheet

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