Submitted from BMJ Quality

Introducing a New Junior Doctor Electronic Weekend Handover on an Orthopaedic Ward

Siddharth Maroo, Dipak Raj

To cite: Maroo S, Raj D. Introducing a New Junior Doctor Electronic Weekend Handover on an Orthopaedic Ward. *BMJ Quality Improvement Reports* 2017;**6**:u212695.w5059. doi:10.1136/bmjquality.u212695.w5059

Received 2 May 2016
Revised 3 May 2016

Pilgrim Hospital, United Lincolnshire Hospitals NHS Trust, UK

Correspondence to
Siddharth Maroo
siddharth.maroo@nhs.net

ABSTRACT

Junior Doctors working on the Orthopaedic wards at a district general hospital identified the lack of a formal weekend handover. The Royal Colleges,GMC and Foundation Programme curriculum all emphasise the importance of a safe and effective handover. Doctors found that the current system of using a written, paper-based handover was unreliable, un-legible, and inefficient. Baseline measurements were sought in the form of a questionnaire which allowed us to obtain the limitations to the current handover. After this and a focus group, a new electronic, 'Microsoft Word' based handover was created and a repeat surgery issued in 2 weeks. Further PDSA cycles over the course of 8 weeks helped to improve and implement the new handover. The overall rating, out of 10, of the new handover increased from 3.4 to 8. Doctors felt the new handover was safer for patients and could be used as a tool for reviewing or referring patients. This project describes the use of a simple, cost-effective intervention that helped to improve patient safety and staff satisfaction.

PROBLEM

The junior doctor weekend handover within the orthopaedic department at Pilgrim Hospital, Boston (United Lincolnshire Hospitals NHS Trust) was felt to be sub-optimal.

The department is made up of two 29-bed Trauma and Orthopaedic wards: one trauma and one elective ward. The doctors working on these wards were only responsible for the patients under the care of the orthopaedic team. Surgical and medical outlier patients were excluded. In the past, each junior doctor working in either of the two wards were responsible for generating a list of jobs for the weekend on-call junior doctor team to complete. These included and were not limited to: chasing bloods, reviewing patients and ordering investigations. It was then the responsibility of the Foundation Year 1 Doctor, providing cover for the wards, to obtain this list from the ward desk or in person, from a junior doctor on the wards during the week, and carry out the jobs stated. When solely taking care of approximately sixty orthopaedic patients and having a poorly communicated handover provided to you on loose sheets of paper, within a blank book of notes or even verbally, the task of taking care of these patients seems momentous.

Informal opinions of Junior Doctors found that this handover was unreliable, un-legible, and inefficient and there was no standardised format, timing or emphasis put on its importance. As a result, a number of jobs, such as chasing blood results, were not being completed by the weekend team and subsequently putting patient safety at risk.

The SMART aim of the project was asses the opinion of the current handover with a staff questionnaire and subsequently phase out the current written handover by creating and implementing an affordable, safe and effective electronic handover based on the opinions of junior doctors within an 8-week time-frame. The team involved in this project included myself, as author and my named supervisor. The participation of all junior doctors in focus groups and completing questionnaires was paramount.

BACKGROUND

The British Medical Association (BMA) states that a good handover benefits both patients and doctors. The fundamental aims of a good medical handover, is to protect safety, ensure continuity of care, avoid repetition and increase satisfaction. As doctors, a good handover is educational, ensures personal protection, reduced stress and improved job satisfaction.[1] This safe and effective medical handover has also been recognised by the General Medical Council, Royal College of Surgeons (RCS), Royal college of Physicians (RCP) and incorporated into the Foundation Program Curriculum.[2–5]

With the implementation of the European Working Time Directive (EWTD),[1 3] which

placed a cap on the number of hours allowed to be worked by Junior Doctors, the number of shift changes and therefore medical handover's have significantly increased. It is therefore extremely important that this handover is as thorough and safe as possible. Four recently published Quality Improvement Projects found their current weekend handover, in both Tertiary Centres and District General Hospitals, inadequate. They demonstrated the use of an electronic weekend handover in helping to improve patient safety and continuity of care.[6–9]

The RCP identified a handover as "a major cause of preventable harm" and this forms the fundamental basis for this project.[4]

BASELINE MEASUREMENT

To confirm the issues surrounding the weekend handover, a comprehensive questionnaire was issued to the junior doctors working within the orthopaedic department. The questionnaire focused on subjective views of the current handover system. A suggestion box was included at the end of the questionnaire providing the doctors an opportunity to express their views and suggestions for improvement. Prior to any interventions being made, a focus group was created to pursue any ideas for a more standardised and comprehensive handover system. Interventions were made over a course of 8 weeks and repeat questionnaires issued the the same group of junior doctors over the course of the change.

We obtained a 100% response rate from the 8 juniors working in the department on the current rota.

A subjective assessment of the initial handover found many faults and areas for improvement. 75% of junior doctors found that the handover did not contain enough information to confidently and safely review a patient. 100% of doctors felt that the handover was not legible and did not have a clear layout. Only 25% of doctors agreed that all the jobs were necessary ones and interestingly 50% agreed that the handover helped to prioritise these jobs.

DESIGN

After the initial questionnaire and focus group, a standardised electronic handover was created aiming include the standards set out by the Royal College of Surgeons and Physicians. The new electronic handover was created within a locked, shared drive on the Trust computers in a 'Microsoft Word' format. It would be accessible from any trust computer providing the individual logged onto that computer had been granted access to the "orthopaedic" folder. The handover itself contained columns for the following: patient name, date of birth, NHS number, ward and bed number, background and history, blood results, other investigations, management plan and pending jobs.

Doctors were given simple education on accessing and using the system. It was then implemented using multiple Plan/Do/Study/Act (PDSA) Cycles in The Model for Improvement.[10]

STRATEGY

PDSA Cycle 1: A new electronic handover was created from suggestions from initial questionnaires and a focus group. This was trialled for a period of two weekends. Repeat questionnaires were given to doctors who found significant improvements in the handover. However, a problem with the new handover was that a set time to conduct the handover had not been stated. This meant that doctors could not collaborate and discuss the various patients and jobs. A set time of 16:00hrs on a Friday afternoon was made to ensure full compliance with the handover.

PDSA Cycle 2: The set time was trialled for a further 2 weeks. Repeat Questionnaires were issued after two weeks. Junior doctors found that the new set time helped to organise and manage jobs on the handover, allowing for unnecessary jobs to be removed. On the other hand, some doctors felt that the handover was an extra burden and cut into time to complete their daily jobs, especially on a Friday afternoon. The basic structure of the handover was now made and further improvements could be made over the next 4 weeks from informal suggestions from the team.

Further minor interventions: Over a further 4-week period, the electronic handover was modified from multiple informal suggestions by junior doctors. Additions such as escalation status and consultant in charge were made. The Study was presented at Quality Improvement Forum, Leicester (Health Education England).

RESULTS

We received a 100% (8 doctors) response rate for all three surveys issued.

After the new handover was implemented many of these figures improved. 100% of doctors agreed that they could confidently and safely review a patient. This proportion also felt the new handover had a clear and legible format. 75% of doctors felt that the jobs were necessary ones. Unfortunately, only 25% of doctors felt the handover helped them to prioritise jobs. These results did not change significantly between the first and second cycle.

100% of doctors felt that all doctors were not present at the handover. However, when a timing was introduced 75% agreed and 12.5% strongly agreed that there was a set time dedicated for handover.

The First PDSA cycle saw the overall rating (out of 10) of the handover improve from 3.4–7.4. The second PDSA cycle saw a smaller improvement to 8. This was possibly because the change implemented in the first cycle was greater than that of the second cycle.

LESSONS AND LIMITATIONS

As previously mentioned, a safe and effective handover is of great value in ensuring patient safety. We found many sub-optimal aspects of the current handover

system that could be negatively impacting on patients and staff.

We have learnt a number of lessons from this project. Introducing a new handover proforma that was in line with current guidelines set out by the GMC and Royal colleges was an effective way of improving the weekend handover. It provided a structured and easy approach to deliver the required information to the weekend team and thus improving patient safety.

The new handover was a cost neutral and eco-friendly solution using only resources currently in use on NHS computer systems. Focus groups and education sessions were a useful tool in sourcing new ideas and educating doctors on the ease of use of the new system. Its cost-effectiveness and ease-of-use makes it a sustainable intervention.

A major strength if this project is that the handover created is transferable to any hospital or speciality. The sections within the template are not specific to a certain specialty and therefore an easy option for secondary care in hospitals.

Multiple PDSA cycles helped to structure the implementation of change and ensure the views of junior doctors were taken into account to improve the handover system. A more rigid and strict system for junior doctors to attend the handover session should be implemented to ensure 100% compliance with all doctors.

This project had a number of limitations. The results of the project are derived from subjective views rather than an objective study which would have been more valid in assessing and auditing a new handover system. Ideally, we would have liked to audit the percentage completion of the handover to see if it was being utilised fully and additionally, the objective impact on patient safety.

Within the department there are only 8 junior doctors and therefore a small sample size. The small sample size proved useful in obtaining a 100% survey completion rate, but a larger sample size would have allowed for us to account for a greater variability in results.

The junior doctors move on from the current rotation after 4 months so further data collection would not be possible if one were to compare new data to the initial data obtained. However, an extension of the study looking at collecting more data over a longer period of time to asses if the interventions had been sustainable would be a valuable addition.

Currently, the handover is only in use in this department. Considering its ease of use, unfortunately, it has not been implemented into other departments as of yet.

The questionnaire contained a choice of five responses for each question (strongly disagree, disagree, neutral, agree, strongly agree). These responses proved ineffective for certain questions that required a yes or no answer, such as, “Are the patient demographics on the handover sheet?”.

CONCLUSION

In this project, a simple and cost-neutral method was used to improve the perception of the handover system and subsequently, patient safety. Various projects undertaken by junior doctors have shown similar results.[6–9].

Junior doctors are on the front-line of care for patients in the NHS. Their opinions were important for us to obtain to see how we could help them and patients. We found the new handover system to be highly favourable and ultimately better for patient safety.

To tackle the limitations, there are opportunities to develop the project into a more objective audit and to survey new doctors on their perception of the handover. In addition, the project can be integrated into other specialities and hospitals. Awareness will be raised by presenting at local audit meetings and regional Quality Improvement Forums.

With the ever increasing workload for the NHS, a safe and effective handover will help to reduce the burden on patients and NHS staff.

Acknowledgements Junior Doctors in the Orthopaedic Department at Pilgrim Hospital, Boston, UK.

Declaration of interests Nothing to Declare.

Ethical approval This project was an improvement study and according to local policies did not require ethical approval.

REFERENCES

1. British Medical Association. Safe handover: safe patients. *Guidance on clinical handover for clinicians and managers*. London: BMA, 2004.
2. General Medical Council Good Medical Practice 2013. London: General Medical Council.
3. The Royal College of Surgeons of England. *Safe handover: guidance from the Working Time Directive working party*. London: RCS 2007.
4. Royal College of Physicians. *Acute Care Toolkit 1: Handover*. London: RCP, 2011.
5. Academy of Medical Royal Colleges. *The UK Foundation Programme Curriculum*. London: AoMRC; 2012.
6. Curtis O, Fisher R. Improving medical SHO weekend handover at a tertiary referral centre. *BMJ Qual Improv Report* 2013;2:u697.w971.
7. Palmer E, Richardson E, Newcombe H, Borg C-M. The F.R.I.D.A.Y. S. checklist - preparing our patients for a safe weekend. *BMJ Qual Improv Report* 2013;2:u660.w502.
8. Govier M, Medcalf P. Living for the weekend: electronic documentation improves patient handover. *Clin Med* 2012;12:124–7.
9. Raptis DA, Fernandes C, Chua W, Boulos PB. Electronic software significantly improves quality of handover in a London teaching hospital. *Health Informatics J* 2009;15:191–8.
10. NHS Institute for Innovation and Improvement. Plan, Do, Study, Act (PDSA). London. 2008. Available from: http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/plan_do_study_act.html. (accessed 10 March 2016).