BMJ Quality Improvement Reports

Improving handover of acute orthopaedic admissions

Paul Karayiannis, Jonathan Warnock
Ulster Hospital, Belfast, Northern Ireland.

Abstract

Handover is a crucial part of patient care and is a well recognized cause of patient harm if not performed well. The introduction of full shift working for doctors has placed even more emphasis on this area of patient care. We identified handover of orthopaedic admissions in our unit was substandard. A prospective audit over a one week period including the weekend was undertaken. The Royal College of Surgeons of England guidance on handovers was used as minimum criteria and we also included criteria essential for handover of orthopaedic patients. This initial audit revealed a poor standard of handover. 21 patients were included and in particular patient location (57%), responsible consultant (14%), and pending investigations (29%) were poorly performed. In addition two patient safety incidents were noted, including one admission that was not handed over. To improve the handover we created a trauma specific handover proforma. We then conducted a re-audit again over a one week period including the weekend with the proforma in use. There was a notable improvement, 17 patients were included and only 3 criteria fell below 80%. We presented our findings at the local audit meeting where the results were discussed with all members of the trauma team. We suggested that an electronic proforma, accessible from multiple computers within the hospital may improve handover further. This was created in conjunction with the IT department. Once again we re-audited handover over a one week period including the weekend with the electronic proforma in use. 23 patients were included and a further improvement was noted; only one criterion fell below 95%. In conclusion handover of acute fracture admissions within the unit has undoubtedly improved. The electronic proforma tool was a simple, cost effective, and accurate method of improving handover.

Problem

Handover is now a crucial part of patient care and is a well recognized cause of patient harm if not performed well [1].

The British Medical Association (BMA), the National Patient Safety Agency (NPSA), and the General Medical Council (GMC) [2] have all recognized and highlighted the essential nature of accurate and effective handover. This has further increased in significance as a result of recent changes within medical practice, in particular the introduction of full shift working. In 2007 The Royal College of Surgeons of England produced guidance on handovers, specifically for surgical teams [3].

Background

The Ulster Hospital in Dundonald is one of the busiest district general hospitals within Northern Ireland. There is an acute and elective general surgical unit as well as a busy Orthopaedic Trauma unit. Seven general surgical and two trauma Senior House Officers (SHOs, comprising Foundation year 2 doctors and core surgical trainees) combine on the rota to cover both specialties out of hours. This ‘cross cover’ has led to difficulties for SHOs covering two teams overnight and subsequently handing over care of acute admissions to different teams at a similar time each morning.

There are also two other important handovers during each working day. One between the day shift (8am-5pm) SHO to the long-day SHO (5pm-9pm) and again to the night shift SHO (9pm-8am).

In addition to this some of SHOs covering Trauma had very limited experience of the specialty as their day to day work was in General Surgery. Therefore determining what information was of clinical importance for efficient handover of Trauma admissions was occasionally problematic for these less experienced trainees.

This combination of circumstances led to an informal handover of orthopaedic admissions, often at a substandard level, and commonly patients were not handed over at all. This was undoubtedly a systemic risk to patients and our junior staff and so we aimed to improve the handover of these admissions by creating a proforma tool. This we hoped would not only improve handover and therefore patient safety but give SHOs a template to work from regarding important elements of the patient history or examination relevant to Trauma. In addition recording the handover would also provide valuable data for further audit [4].

Baseline measurement

As members of the Trauma team we had concerns about the standard of handover from the out of hours cover and its possible impact on patient care. We undertook a prospective audit over a one week period including handover over the weekend. We used the Royal College of Surgeons of England guidance regarding safe handovers as minimum criteria. We also included criteria which we felt was specific and important for acute fracture admissions. The minimum requirements included were; name, date of birth, patient location, responsible consultant, current diagnosis, results, and pending investigations. Criteria we also included were as follows; patient Mini-Mental State Examination (MMSE) and baseline mobility, urgency and frequency of review, management plan, operational issues (e.g. relevant medications such as warfarin/clopidogrel), and any outstanding tasks (e.g.
Handover of Trauma admissions within the Ulster hospital has
been identified as a potential area for improvement. An electronic
version of the proforma was suggested, and trauma coordinators
about the best way to further improve the
meeting. We discussed as a team including consultants, junior staff,
and trauma coordinators regarding the proforma and expected standard of
handover. Initial feedback from the Trauma team and SHOs was
positive and encouraged effective
communication between day and on call teams. This subsequently
meant the SHO who had then been on call overnight had a
completed list of admissions to present in the morning.

To improve this we created a Trauma specific handover proforma
which was printed off by the Trauma team every morning. This
proforma was initially filled out by Trauma SHOs during the day who
then handed it over to the on call SHO. This ensured that all
admissions were officially recorded and encouraged effective
communication between day and on call teams. This subsequently
meant the SHO who had then been on call overnight had a
completed list of admissions to present in the morning.

Creating the proforma also helped SHOs less familiar with Trauma
patients quickly identify important priorities for handover of acute
admissions. It also provided an enhanced training opportunity for
cross covering SHOs who felt better prepared to present the
admissions.

Conclusion

Handover of Trauma admissions within the Ulster hospital has
undoubtedly improved and reduced patient risk. The electronic
handover has undoubtedly increased. We must therefore ensure
that this vital part of providing the best possible care for patients is
not overlooked.

Design

To improve this we created a Trauma specific handover proforma
which was printed off by the Trauma team every morning. This
proforma was initially filled out by Trauma SHOs during the day who
then handed it over to the on call SHO. This ensured that all
admissions were officially recorded and encouraged effective
communication between day and on call teams. This subsequently
meant the SHO who had then been on call overnight had a
completed list of admissions to present in the morning.

Creating the proforma also helped SHOs less familiar with Trauma
patients quickly identify important priorities for handover of acute
admissions. It also provided an enhanced training opportunity for
cross covering SHOs who felt better prepared to present the
admissions.

Conclusion

Handover of Trauma admissions within the Ulster hospital has
undoubtedly improved and reduced patient risk. The electronic

Results

Following the introduction of the electronic handover proforma,
handover was again audited over a one week period (10/06/2015 –
16/06/2015). 23 patients were included. The only criterion to fall
below 95% was results of pending investigations (82%). No patient
safety issues were identified and uptake of the electronic proforma
100%. It received positive feedback from the Trauma team for
maintaining a high standard of care and the cross-covering SHOs
who were able to give a concise handover with clinically relevant
information.

Lessons and limitations

Any handover is only as good as the individual clinician reviewing
and presenting the patient information. No proforma or online
system can ever fully replace good communication between
professionals. However we have highlighted how some relatively
simple adjuncts electronic or otherwise can significantly improve
handover and therefore improve patient care and reduce risk. With
the introduction of full shift work, the importance of effective
handover has undoubtedly increased. We must therefore ensure
that this vital part of providing the best possible care for patients is
not overlooked.

Creating the proforma also helped SHOs less familiar with Trauma
patients quickly identify important priorities for handover of acute
admissions. It also provided an enhanced training opportunity for
cross covering SHOs who felt better prepared to present the
admissions.

Challenges during the audit were mainly setting up a trust wide
online proforma accessible on all computers but once we overcame
this we produced an extremely effective electronic tool. This will be
enforced during changeover periods by the permanent Trauma
Coordinators and staff grades ensuring this remains a developing
system within the unit.

PDSA Cycle 1: Concerns were raised within the Trauma team
about lack of formal handover and concern for patient safety. Initial
audit of handover of Trauma admissions was undertaken.

21 admissions were audited in the first week (20/01/15 –
26/01/2015). Overall standard of handover was very poor, in
particular patient location (57%), responsible consultant (14%)
results of significant/pending investigations (29%), co-morbidities
potentially complicating surgery (38%), and outstanding tasks
(38%) were all well below the expected standard. In addition two
patient safety issues were identified; one patient was not handed
over and was located by the team in the morning. The other patient
suffered a brachial plexus injury following anterior shoulder
dislocation was only handed over as a simple dislocation without
communication of the nerve injury. In both these cases there was
no handover between the SHO admitting or accepting the patient
and the next SHO on call.

See supplementary file: ds5841.docx - “Baseline Measurement
Results”

Strategy

PDSA Cycle 2: Given the patient safety issues identified we
introduced the handover proforma immediately. SHOs were made
aware by email of the changes and by verbal communication by the
Trauma team regarding the proforma and expected standard of
handover. Initial feedback from the Trauma team and SHOs was
positive.

PDSA Cycle 3: We re-audited the handover of Trauma admissions
over a one week period including the weekend with the proforma in
use (10/02/15 – 16/02/15). 19 patients were included. A notable
improvement in the handover of acute fracture admissions was
demonstrated. The only criteria to fall below 80% were
Management plan (76%), Results of Investigations (47%), and
outstanding tasks (71%). All patients were handed over and no
patient safety issues were identified. Uptake of the paper proforma
was 100%.

PDSA Cycle 4: We presented our findings at the local audit
conference were the project was a prize winner.

PDSA Cycle 5: Introduction of dedicated Trauma specific electronic
proforma with access from any computer in the hospital with a
generic log in. Reaudit of handover over same time period. A further
improvement in handover was again noted with positive feedback
from admitting SHOs and orthopaedic team regarding continuity of
care and overall handover process.

Conclusion

Handover of Trauma admissions within the Ulster hospital has
undoubtedly improved and reduced patient risk. The electronic
handover tool has proven to be a simple, cost effective, and accurate method of improving communication in a complex out of hours system. It is also a highly reproducible quality improvement project that would be applicable to many teams in many specialties.

References


Declaration of interests

Nothing to declare.

Acknowledgements

Katharine Dane (Lead Trauma Coordinator) and the Trauma and Orthopaedic Surgery Department Ulster Hospital, Dundonald.

Ethical approval

Ethical approval was not sought for this project, according to local policy within the South Eastern Trust this work met the criteria for operational improvements exempt from ethics review. This work was primarily intended to improve local care and not provide detailed knowledge in the field of inquiry. This works meets the criterion as handover is a universally accepted part of patient care and we simply evaluated improvements in handover as a result of introduction of paper and electronic proforma.
Improving handover of acute orthopaedic admissions
Paul Karayiannis and Jonathan Warnock

BMJ Open Quality: 2015 4: doi: 10.1136/bmjquality.u209209.w3901

Updated information and services can be found at: http://bmjopenquality.bmj.com

These include:

Supplementary Material
Supplementary material can be found at: http://bmjopenquality.bmj.com/content/suppl/2015/10/23/bmjquality.u209209.w3901.DC1

Open Access
This is an open-access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license. See: http://creativecommons.org/licenses/by-nc/2.0/

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections
Surgery (52)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/