Passing the Baton: Handover between Health Care Professionals - Post-implementation analysis

“Gone is the arriving at the hospital, bleeping [doctors], chasing round, trying to get the bleep from them and get a handover from them on the ward.” (Ken, Registrar)

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Abstract

Handover is a time where patient safety is at great risk. The increase in handovers following the European Working Time directive resulting in more frequent staff changes, necessitated the development of a new structured handover. A large university teaching hospital implemented Hospital@Night, a structured handover to deliver a clinically safer, multidisciplinary out-of-hours service for patients.

Qualitative analysis from semi-structured interviews with 3 night sisters and 9 doctors of varying grades, who regularly take part in this handover was performed. Thematic analysis with representative quotes were used and 6 main themes emerged: changes, information and content, logistics, attendance, discipline and training.

Following this analysis, the following recommendations were made:

- Continue the current format of Hospital@Night, maintaining a structured handover
- Training for all staff, doctors and night sisters, on Hospital@Night to ensure understanding of roles and expectations at the meeting
- Night sisters to formally chair the meetings
- Training for junior medical staff on handover technique.
- Undergraduate medical student training on handover technique and importance of handover
Introduction

When one shift ends and another begins, health care staff discuss their patients to review progress, status and plans for care. Handover has come under close scrutiny in the last ten years, with the British Medical Association, Royal College of Surgeons and World Health Organisation all publishing guidance in this area (BMA, 2004; RCS, 2007; WHO, 2007). One of the reasons for the current interest is reduction in working hours due to the European Working Time Directive, making staff changes more frequent. Handovers are thus also more frequent and all the more important for patient safety. These are the times when deteriorating patients can be flagged up for special attention from the oncoming team, and when clinical tasks in progress or not yet completed are passed on (Hayes et al 2010).

A local service evaluation of handover at three hospitals within Coventry and Warwickshire involved in-depth qualitative interviews with health professionals who took part in handover (Hayes et al, 2010). The results produced recommendations for changes in practice. These included:

- An induction for F1 doctors to provide information about the importance of handover, and which patients and information to include.
- The handover meeting to take place in a dedicated room at regular times each day, have a nominated lead, and should include nursing representation.
- A register of attendance.
- Use of handover sheets to formalise handover structure with written or electronic documentation of what information has been passed on.

Following this study, and with reference to the National Patient Safety Agency document on out of hours handover (NPSA 2005), University Hospitals Coventry and Warwickshire implemented a new structured evening handover which included these recommendations. This structured handover, Hospital@Night, aims to deliver a clinically safer, multidisciplinary out of hours service for patients.

This study aimed to re-evaluate the current service following 11 months of Hospital@Night, identify problems as perceived by the doctors and night sisters who take part in them every day, and recommend solutions in order to provide the safest care for patients.
Methodology

Qualitative arm:
This project used qualitative methodology and semi-structured interviews allowing participants to expand on areas they felt were important without constraint, and to bring up issues which had not been considered from the outset. We conducted in-depth interviews with doctors and night sisters about their experiences of medical Hospital@Night handovers.

The interview schedule (presented in the Appendix) was developed and refined by discussion within the project team and administration of two pilot interviews. Participants were doctors of varying grades, and night sisters.

The team approached doctors who had attended a minimum of 5 medical Hospital@Night handovers as determined by the attendance registers.

In total, 9 doctors and 3 night sisters agreed to be interviewed from University Hospital Coventry and Warwickshire. Interviews were recorded with permission and transcribed by the team.

The transcripts were investigated using thematic analysis; themes were not stated a priori, but responses were arranged into themes developed through engaging with the data and drawing comparisons within and between interviewees. Three members of the team analysed the data independently for a more reliable analysis.

Quantitative arm:
Quantitative analysis of attendance registers involved obtaining registers from the last eleven months, the time since Hospital@Night was started until present day.

The attendance overall and attendance of each specific group e.g. Day 1st on-call medical specialist registrar or Day SHO oncology/haematology was identified and comparisons made between groups.

Analysis of attendance by day of week and month of year was also performed.
Table 1: Hospital@Night team attendance register

<table>
<thead>
<tr>
<th>Team</th>
<th>Role</th>
</tr>
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<tbody>
<tr>
<td>Night Nursing Team</td>
<td>Night Nurse Practitioner</td>
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<tr>
<td></td>
<td>Night Sister</td>
</tr>
<tr>
<td></td>
<td>Band 3 Practitioner (1)</td>
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<td>Band 3 Practitioner (2)</td>
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<tr>
<td>Day/Evening Medical Team</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; On Medical SpR</td>
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<td>2&lt;sup&gt;nd&lt;/sup&gt; On Medical SpR</td>
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<td>SHO Onc/Haem</td>
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<td>SHO Acute</td>
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<td>Night Medical Team</td>
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<tr>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; On Medical SpR</td>
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<td></td>
<td>SHO 1</td>
</tr>
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<td>SHO 2</td>
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</tbody>
</table>

Qualitative Results and Discussion
The transcripts, totaling over 18300 words, were analyzed by three reviewers. The following broad themes were identified and described. The three reviewers agreed on the vast majority of the themes, and came to a consensus through discussion where there was difference. Names have been changed to maintain anonymity but job category has been indicated.

Quantitative analysis of attendance at Hospital@Night has also been included.

Figure 1 shows the themes emerging from the interview data. Each theme is described in detail below with representative quotes.
Changes

Doctors and nurses both cited their experience of handover now as the same or better than before Hospital@Night was implemented. One interviewee felt handover was no different, but 11 felt the new structured Hospital@Night had improved handover in the evening.

Both doctors and nurses felt the new structure had improved working relationships and team-working as the new structure has created a ‘night team’.

“..much improved to what it was before.” (Beth, night sister)

“..the night sisters have a better relationship with the doctors, and we’re working much more as a team” (Charlotte, night sister)
“should any deterioration occur, if it is flagged up by the night sister or the night officer, everyone knows what to do, what’s happening because we have an action plan immediately after the handover...if we have got specifically very sick patients, we make it a point that we go and see them immediately after the handover to correlate what has been handed over and the actual clinical picture” (Gareth, registrar)

Both doctors and nurses felt that the new handover made the night shift safer for patients.

“...I think the structure simply makes it clinically safe...With all this information...you can, sort of, provide the maximum care you can give to the patient.” (Gareth, registrar)

“patients who are likely to be missed in the past...are handed over within the team at the table and everyone knows what’s happening” (Harry, SHO)

Information and Content

Patient information given in handover needs to include certain vital information such as patient’s name and ward. This enables the doctors to be able to find the patient and be aware of potential problems on that ward. It also enables the night sisters to support staff on wards where there are more sick patients.

“It would just be nice if they would say at the beginning, the patient’s name and where the patient is. I know it sounds picky but it really is a good start...” (Charlotte, night sister)

“we prioritize, so we go to whatever ward that has the poorest patients. If we don’t know, we can’t go and help support the staff on that ward” (Beth, night sister)

The patients discussed in handover should include new patients, sick patients and any jobs that need doing specifically overnight. Doctors felt that handover should not include routine jobs from the day shift.

“...sometimes you get lots of routine things that probably aren’t night duties...” (Harry, SHO)

“Some of the doctors are more junior...and they erm, sometimes hand over some of the stuff that’s inappropriate” (Fred, F2)
The quality of the information handed over was reported to be variable. Generally it was felt that the more senior staff are better at handing over. Although occasionally too little information is handed over, handing over too much information was deemed to be more problematic.

“sometimes people miss out quite important things. You then go to see the patient and realize that more stuff should have been highlighted. But I think that handing over too much information is more of a problem than not enough because at handover you can overwhelm somebody with too much information, and then they miss the important points.” (Amy, F2)

“The more senior, tend to be better” (David, Registrar)

Doctors who have received a handover from another doctor to take to the Hospital@Night meeting, may not always obtain enough information to then perform an effective handover. When being given information from someone else to take to handover it is important to obtain enough information to be able to perform your handover effectively at Hospital@Night. There seems to be a culture that it is acceptable amongst some doctors to handover poorly when handing over on behalf of others.

“some will just handover the bare minimum, and say ‘well I’ve been handed over this name, I’ve got a diagnosis, that’s all I’ve got’... I think that if you are giving any information, you should try to get more off the doctor who previously handed over to you” (Beth, night sister)

The Hospital@Night meeting now serves as a multidisciplinary platform for diagnosis and decision making. More discussion occurs now between varying grades of doctors and the night sisters.

“A lot of diagnosis goes on in that room now, they say ‘what about this’, ‘have you tried that’, ‘I’d do that a different way’ and things. It’s good for the patient, I think” (Beth, night sister)

“They also have CRRS (Clinical Results Reporting System) up and open, so you can quickly ask the reg something then and there which helps to direct discussion and help with the plan.” (David, registrar)
Logistics

The Hospital@Night handover occurs at 8.30pm every evening. Staff felt this was an appropriate time from Monday to Friday as it occurs at change of shift, but was less ideal at weekends as the day and night registrars do not meet. The duration of 30 minutes was felt to be adequate for handover to take place.

“the time is fine, as that’s when the day doctors finish” (Amy, F2)

“The place seems fine, it’s a dedicated room with a screen, and computer access which is useful for reviewing blood results or X-Rays that need to be handed over. The time seems appropriate during the week but not really at the weekends. On Saturdays and Sundays the ward cover registrar leaves at half five they are not able to handover straight to the night registrar” (Ken, registrar)

The meeting room, which is dedicated to Hospital@Night, has a large projector screen and each meeting has a healthcare assistant in attendance who displays patients’ results from the Clinical Results Reporting System (CRRS) and radiological images (via PACS) for group discussion.

“when patients are handed over by the late-shifts, we can actually relay what has been happening in the day. You can sort of postulate or you can pre-emptively prevent deterioration by targeting the relevant areas or parameters which are likely to deteriorate from one patient to the other.” (Gareth, registrar)

Additional resources available in the room are specialized handover sheets and paper. The handover sheets are subdivided into sections to act as a prompt for patient specific information, jobs list and plan. Not all the doctors use these sheets, preferring to make their own notes, but most found the handover sheets useful. Those who don’t use the specialized sheets found the supply of blank paper in the handover room convenient.

“...the sheet where you kind of write down what your jobs are for the night that’s quite useful because often we used to be writing on scraps of paper and stuff so it just makes it a bit easier.” (Harry, SHO)

“I don’t use the handover sheets, I just write my own list” (Amy, F2)
Attendance

All interviewees felt having the night sisters at the handover was an improvement. Doctors felt that the night sisters were better able to support them during the night if they were aware of the sick patients in advance. The night sisters felt that they were more able to support the ward staff where there were sick patients and also able to assist the doctors more effectively.

“I like that the night sisters are there because, obviously, if you are covering a night shift, they are covering your backs essentially. It’s also good for them to be aware of patients who might be causing trouble, because they can support you as well.” (David, registrar)

“You now what we do is we prioritise, so we go to whatever ward that has the poorest patients. If we don’t know, we can’t go and help support the staff on that ward” (Beth, night sister)

All interviewees felt having the night registrar in attendance at handover was an improvement. This is because the registrar is then aware of the sick patients and if contacted about them by the junior doctors during the night, the registrar will already know about the patient. It was also good to discuss diagnosis and management plans with senior medical staff during the handover which was not previously as easy when registrars handed over separately to the SHOs. The registrar asks more questions at the handover to obtain the relevant information about the patient. This provides a clearer picture for the night team.

“Now we all handover together and they are aware of the sick patients, which makes life easier if you speak to them later in the night about them…” (Harry, SHO)

“It’s easier to get hold of the registrars. They are very busy in the evenings normally and you get them in one place and you can hand over and then they can go with you to see the patients if necessary.” (Amy, night sister)

“We’re getting information now whereas we weren’t before...[The registrar] is asking the questions that we all want to know, you know. We are getting clearer answers because of [the registrar]...we are all getting a clearer picture” (Beth, night sister)

A key principle of Hospital@Night is that it should involve the entire night team. Currently the band 7 night nurses have a 6% attendance record (see Quantitative Results below). Some band 6 night nurses felt a band 7 nurse should be in attendance and chair the meetings. There was a feeling of uneasiness as to who was to take charge in their absence. However, other nurses and doctors felt that the band 7 nurse is the bed manager at night and so it would be inappropriate for them to be at the meeting as their job does not involve medical management at night, but rather the logistics of bed management.
“[Band 7s] really should be attending the meeting but because they do beds, bed management, they never attend. They should be in and orchestrating the whole thing. Saying ‘who’s next, which doctor is to speak next’ and all that. But that falls onto us, as there is no band 7 there... sometimes it can get to be a bit of a rabble...we know [the day team] want to leave but it would be nice if there was someone in authority who could say” (Beth, night sister)

Some specialists were deemed to attend infrequently. Many interviewees felt that the haematology and oncology SHOs rarely attended handover. However, this was not demonstrated in quantitative analysis of attendance registers (see quantitative results below).

“Some people don’t seem to attend I’m not sure why. Some specialities more so than others so I don’t know whether they feel because they’re a registrar and they’re so specialised, they don’t feel that they need to handover...” (Harry, SHO)

Barriers to attending were attributed to being stuck with a sick patient, and this was understood by all. Punctuality was rarely seen as a problem.

“..people do come in drips and drabs but I think that’s a dynamic situation isn’t it. It’s not like you can down tools at half past eight and walk away from a sick patient. People can be late but I think that’s a realistic outcome of the environment you work in” (Jane, F2)

**Discipline**

Doctors did suggest that there should be introductions made at the beginning of the Hospital@Night handover. This is to ensure everyone is aware who is there and their roles for the shift.

“...like last night, I was handing over to someone who was a registrar, and I couldn’t tell who he was. I’d never seen him before...it can be quite difficult identifying who’s who... like just saying who they are at the beginning, maybe. If, briefly saying “I’m the reg for the night”, “I’m the reg for the day”, “I’m the SHO coming upstairs”, “I’m the SHO coming downstairs”. That kind of thing” (Fred, SHO)

“It’s also good that everyone gets together, then everyone knows who everyone is as well.” (Amy, F2)
The attendance register has helped to formalize the handover, providing a further element of accountability. It acts as a reminder of who is expected to attend and shows who is currently at the handover.

“the attendance register is quite useful in that it shows people who aren’t attending so you know who it should be and which people come and which people haven’t handed over yet so that’s useful.” (Harry, SHO)

There were mixed views as to whether to wait until everyone was in attendance before starting the handover. Nurses felt that everyone should wait regardless of the information to be handed over. Doctors felt that some handovers could go ahead if they were smaller jobs which did not need assistance from others.

“Sometimes, the doctors are inclined to hand over bits before the reg comes in. We (night sisters) sort of stop them and say ‘you’ve got to wait for the reg’”. (Charlotte, night sister)

“The only other thing is, when you are handing over something like, a venflon needs doing, or some IV fluids that need to be written up, it’s not really a handover as such, it’s a job that needs doing, I don’t see any benefit for everyone else in that room to hear about it” (Imogen, SHO)

“The evening doctor will hand over what they need to and then leave, so it’s not like everybody sits down and everybody hands over then you leave, it tends to be a bit more tag-team which is fair enough, like there’s no particular reason for the endocrinology doctor to know there’s a sick patient in renal.” (Jane, SHO)

The original Hospital@Night agenda cites a specific order of handover. This includes the sickest patients to be handed over first. This is because if the registrar is called away during the handover, then they are aware of the sickest patients. However, current practice is the first doctor to arrive at the handover seems to handover first. Occasionally, day doctors will leave straight after they have handed over, but most stay until the end of handover.

“the sick people should be discussed first. The way it is actually working is the people who come in first, go first…but it does seem to work. Everyone stays for the whole handover usually” (Beth, night sister)

“It usually works on a first come first served basis. If you are there first, you hand over first and then go. But if the SHOs have lots to hand over then, you wait your turn, which is fine and you do kind of expect it, but it is never running on past half an hour, 40 minutes or so. I can’t see any other way you could do it really.” (Elaine, F2)
Discipline within the handover meeting is maintained by the night sisters and occasionally by the registrar. They take the position of chairperson for the duration of the meeting. Each person is required to talk one at a time. This is to ensure everyone can hear the handover, and no information is misheard. This technique was generally felt to be necessary and fair.

“Sometimes it gets very higgledy-piggledy and it takes someone to say, you have got to take it in sequence, one at a time and that sort of thing. Some doctors are better than others at it” (Charlotte, night sister)

“Lots of people talking at handover can lead to things being misheard. Particularly when the registrar is supposed to have an overall idea of everything that is going on. He needs to be aware of it all” (Ken, registrar)

**Training**

The doctors who had received the Hospital@Night training as part of their hospital induction, felt that they knew what to expect at the handover meeting and what was expected of them.

“In our induction, Dr X came and explained the system, who goes where, what time handover is, the process of how it works. So we were given all that in our induction. As to formal handover type training? What to handover or how to handover? Not specifically. Just the logistics really.” (David, registrar)

Those who didn’t get any training, were less clear about what their role was and what to expect from others.

“[training] might make everybody do the same thing and handover the right way. And everyone would expect the same thing out of it. (Amy, F2)

“we rotated at a different time to the rest so that might be why we didn’t get any training. No formal introduction when we started. Just picked it up on the first day.” (Ken, registrar)

The night sisters did not receive any formal training about Hospital@Night. Information was passed down from the band 7 nurses. This lead to an uneasiness about their role at the meeting.
“No we didn’t get any training. We got an idea, by the band 7s, about how it should run, just cascade trained really. Just told, but no actual training when someone came in and took charge and said, this is how it should be run, no.” (Beth, night sister)

“At the beginning we were a bit tentative about it, unsure what our role is. But we soon fell into it. By asking our band 7s who go to the handover meetings during the day, we found out what we should be doing.” (Charlotte, night sister)

Doctors reported mixed feelings with regards to training on how to handover. More junior doctors felt it would be a good for foundation year one doctors to receive training on how to handover. It was felt that handing over an excess of information and an inappropriate selection of patients occurs as junior doctors are more worried about more patients. The more senior doctors felt it would be unnecessary for them to receive this training at this stage in their career. Suggestions were made for when this training could take place, most reporting August at the start of foundation year one as the best time. Others suggested that more training at the start of a new job may not be as effective as there are so many new concepts to learn and apply at this stage.

“Initially you feel like you are handing over too much, you are probably worried about all of your patients. So it would be good initially to have guidance on this as these are the patients you should worry about or this is what you should hand over to people, or this is the information we need” (David, registrar)

“The more experience the doctor has, the better they are at identifying sick patients and they tend to do better handovers.” (Imogen, SHO)

Most doctors were aware that the training resources were available on the hospital intranet although none of the doctors interviewed had accessed it. The website contains the meeting agenda, blank attendance lists, blank handover sheets and logistical information e.g. time and place.

“…I’m sure there is something on the web.” (Charlotte, night sister)
Quantitative Analysis of Attendance

The aim of this part of the study was to explore attendance of various staff groups. Registers provided dated from 4/8/10 to 8/7/11, though eight were undated. In total, 322 registers were available, meaning that all eight days were represented.

Table 1 shows the frequency of attendance from all the staff groups listed on the register. Additional people listed on the registers were not included, though it is worth noting that there was more than one night sister present at the majority of handovers. Sometimes reasons for non-attendance were given on the register (eg called to resus) but these were analysed together with occasions where there was no reason given. Thus, the results presented here represents who was and was not in the room for handover rather than who had valid reasons for not attending.

There were 16 staff groups listed on the register. There was no maximum attendance (ie all 16) on any day. Figure 2 shows average attendance at each handover, which ranged from 7 to 15, with a mean of 12 attendees. It appeared that the low turnout amongst some groups was because there was no such person allocated to that role on particular days (for example 2nd On Medical SpR in the night team) as note was made of this on some registers.

Attendance from the Night Medical Team was generally very good, as well as from the Night Sisters. The Night Nurse Practitioner very rarely attended. Amongst the Day/Evening Team, the SHOs’ attendance was higher than that of the SpRs. Amongst the SHOs, attendance was above 80% for all specialties except the Acute SHO. Qualitative interviews flagged oncology/haematology as the discipline least likely to attend (see above), but that was not demonstrated in the data.

The most poorly-completed part of the register was information on the person leading the handover, which was listed on only 3% of registers.

Analysis by time showed a statistically significant effect of day \( [F(6,303)=5.5, p<0.05] \) with post hoc tests revealing greater than expected attendance on Fridays and less on Saturdays (Figure 3). This may be due to lower staffing on Saturdays, though it should be noted that attendance on Sundays was not statistically different to weekdays. When attendance was plotted in four-week periods, there was an overall increase in attendance across the year, with peaks in November 2010 and April/May 2011 (Figure 4).
Table 1: Attendance from Staff Groups Specified on Register.

<table>
<thead>
<tr>
<th>Team</th>
<th>Role</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Night Nursing Team</td>
<td>Night Nurse Practitioner</td>
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<td>6</td>
</tr>
<tr>
<td></td>
<td>Night Sister</td>
<td>305</td>
<td>95</td>
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<td>Band 3 Practitioner (1)</td>
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<tr>
<td></td>
<td>Band 3 Practitioner (2)</td>
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<tr>
<td>Day/Evening Medical Team</td>
<td>1st On Medical SpR</td>
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Figure 2: Mean Attendance at Handover
Figure 3: Attendance by Day of the Week

Figure 4: Attendance by Month
Conclusions

This project aimed to describe the experience of patient handover in Hospital@Night meetings. Handovers are more important than ever with shorter working hours and hence frequent staff changes. They were also seen by participants as crucial both for patient care as well as for efficient and safe health care provision.

The structured handover, which has been in place for 11 months, has improved handover for staff by increasing awareness of each person’s role and improving working relationships but also for patients by creating a multidisciplinary ‘night team’ who work together creating a clinically safer environment.

The participants in this study spoke more about the logistics and structure of meetings than the content. The overwhelming success of Hospital@Night stems from the attendance of the registrar and night sisters at handover. The Hospital@Night handover is now a setting for diagnosis, planning and educational development in a way handover had not been before. The new resources available, including dedicated room, time, laboratory results and radiological images, have also aided this development.

Discipline at the meetings is also key to their success. It was unanimously felt that allowing a specified order for handing over and everyone should speak one at a time was important.

Training received for Hospital@Night and for handover technique was mixed amongst the grades of doctors and the nursing staff. Night sisters did not receive training and discussion showed this would have benefitted them. This should provide the empowerment for the night sisters to chair the Hospital@Night meetings. Junior doctors benefit from the current logistical training on roles and expectations at Hospital@Night but also would benefit from training in handover technique.

The quantitative analysis of attendance registers over 322 days revealed attendance from the night medical team and night sisters was excellent and attendance from the day medical team was good. Interestingly, the lack of attendance of band 7 nurses and the lack of register documentation of meeting leader demonstrates another finding in the qualitative analysis of band 6 nurses feeling unsure of their role and who should chair the meetings. Again, training for band 6 nurses should highlight roles and expectations.
Recommendations

From our analysis of the data, we recommend the following:

- Continue the current format of Hospital@Night, maintaining a structured handover
- Training for all staff, doctors and night sisters, on Hospital@Night to ensure understanding of roles and expectations at the meeting
- Night sisters to formally chair the meetings
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Additional work

Conferences
This project was presented as a poster at The Society for Acute Medicine International Conference London 2011.

Patient safety Seminar
Qualitative analysis in this project and in Hayes et al (2010) revealed discussion about handover being perceived as a clinical skill learned with experience, but which is not currently taught in the undergraduate curriculum. As a result, a team of 3rd and 4th year medical students has organizing a tutorial in handover technique for pre-clinical medical students at Warwick Medical School. Feedback from this session was excellent, and plans are currently being made to formally introduce this into the core curriculum and disseminate the course to other medical schools.
References


Appendix: Interview Schedule

1. Did you get any training for Hospital@Night?
   (prompts: handover training, training resources available)

2. What do you think about the structured handover?
   (Prompts: time, place, duration, format, attendance, access to laboratory results and radiological images)

3. What is the time keeping like?

4. How has the experience of handover changed for you since it became more structured?
   (Prompts: What is better, What is worse)

5. What could improve handover?

6. Are there any barriers to attending the handover at night? Reasons why can’t attend / don’t attend?

7. Is there anything else you would like to say about the Hospital@Night handover?