The implementation and impact of Hospital at Night pilot projects
An evaluation report
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Ann Mahon, Claire Harris and Jane Tyrer
Centre for Public Policy and Management, Manchester Business School

Sarah Carr
Carr Consultancy

Karin Lowson, Louise Carr, Stephen Chaplin and Dianne Wright
York Health Economics Consortium, University of York

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**Contact Details**  
Tim Lund  
HSCD-WD-Capacity  
Room 2W05 Quarry House  
Quarry Hill  
Leeds  
LS2 7UE  
0113 2546900  
www.wise.nhs.uk/sites/workforce/usingstaffskillseffectively

**For Recipient Use**
The Hospital at Night programme has shown that it is possible to deliver compliance with the European Working Time Directive (EWTD), improve training out-of-hours and increase doctors’ quality of working life, while improving patient care. The Hospital at Night style of working continues to be used in all four original pilot trusts previously supported by the NHS Modernisation Agency. The nursing and medical staff, of all grades, are clear that they would not wish to change back to their previous working methods. This evaluation helps explain why. As of June 2005, over two dozen hospitals across England have implemented the Hospital at Night concept for out-of-hours cover.

The programme's original aim was to reduce dependency on training grade doctors for providing cover at night in order to reduce their working hours and eliminate sleep deprivation without damaging their training. It has been successful because it offers a way of working that is better for patient care. The Hospital at Night model consists of providing cover at night through a multidisciplinary night team, which has the competences to cover a wide range of interventions but has the capacity to call in specialist expertise when necessary. This contrasts with the traditional model of junior doctors working in relative isolation and in specialty-based silos. Hospital at Night also advocates supervised multi-specialty handover in the evenings; other staff taking on some of the work traditionally done by junior doctors; moving a significant proportion of non-urgent work from the night to the evening or daytime; reducing the unnecessary duplication of work by better coordination and by reducing the multiple clerkings and reviews.

Defining what skills and competencies are required in a hospital and who will provide these is not an easy exercise and often shows up long-standing areas of weakness, but the exercise is essential to bringing in the Hospital at Night programme to any site. Most doctors and nurses already believe they work in teams. This evaluation shows how much more rewarding their out-of-hours work became by giving them a true multidisciplinary team environment. Not all hospitals will be able to overcome the historical difficulties of asking different medical specialties to work cooperatively in the best interests of the individual patient. Fears that this would result in additional workload were real, but have not been borne out in practice. Importantly, all the hospitals in the pilot were clear that introducing a proper handover at both ends of the night’s work was beneficial to patient safety. Doctors, of all grades, were clear that they regarded the introduction of this formal, structured time as a huge improvement and vital to a safe night shift.

The Hospital at Night programme tries to minimise the amount of time doctors in training spend resident on-call with limited specialty training opportunities while optimising their daytime hours of working and learning. The structure of full shift patterns introduced as a direct consequence of the EWTD needs to be carefully considered with reference to the intensity of work and the responsibilities expected. It is clear that questions need to be answered locally about the most effective length of a single shift and the number of night shifts in a single block if patient safety, doctor effectiveness and work/life balance are to be maximised and sleep pattern disturbance minimised.

The name 'Hospital at Night' reflects the original and continuing focus of the initiative. However, the evaluation makes it clear that this approach can also apply to the weekends and even to the emergency admissions side of the normal working day. This is a logical progression. What matters to those clinicians responsible for the programme are that the lessons contained in this evaluation are learnt and that the methodology is properly followed. This is not a quick or easy fix. It is certainly not about making orthopaedic SHOs responsible for neonatal emergencies. It is about ensuring that, where possible, work that could be done by day is not left until night; that specialty input in the evenings reduces calls during the night; and that the team awake and covering the hospital at night has the skill set necessary to deal with the majority of problems needing immediate
action, and can access further help within a reasonable timescale. Although the Hospital at Night template is sound, each trust will have to do the work to devise the most appropriate team for their patients. This is a new way of working for both doctors and nurses. It is hard work to implement, and requires significant managerial support, but the evaluations have shown that it provides important advantages to both patients and doctors. It is vital to meeting the 2009 EWTD requirement to reduce the working week of junior doctors to 48 hours, while continuing to ensure high-quality specialist training and provide a safe service to patients.

Wendy Reid
Postgraduate Dean, London Deanery
Summary of main findings

How are staff experiencing the implementation of the key elements of Hospital at Night?

**Positively**

What are staff perceptions of the impact of Hospital at Night on patient care?

**Improved**

What are staff perceptions of the impact of Hospital at Night on doctors’ education and training?

**Neutral/positive**

Have there been any changes in clinical outcomes since the introduction of Hospital at Night?

**Nil adverse**

What impact has Hospital at Night had on the pattern and distribution of workload during the night-time?

**Less ‘urgent’ work at night**

Has Hospital at Night affected the achievement of national performance targets in the areas of A&E waiting times, cancelled theatre operations and inpatient waiting times?

**Not noticeably**
Introduction and background

This report describes an evaluation study commissioned by the NHS Modernisation Agency into the Hospital at Night pilot projects.

The effective and safe management of patients in hospitals during the out-of-hours period has emerged as a key challenge for NHS organisations in recent years. At night, NHS hospitals have traditionally relied on multiple tiers of specialty-specific, resident ‘on-call’ doctors (predominantly doctors in training), with consultants being non-resident but available on-call from home. This traditional model of ‘on call’ medical cover has been the subject of increasing debate in the medical press, with particular concerns about the impact of working excessive hours on the mental and physical health of doctors in training and the quality of care provided to patients (see, for example, Firth-Cozens and Cording, 2004; Hobson, 2004; Nicol and Botterill, 2004). More recently, the European Working Time Directive (EWTD) has acted as a major catalyst for changing the working pattern of doctors in training.

A wide range of approaches to support the implementation of the WTD, while maintaining or improving the quality of patient care, have now been developed. One approach – the Hospital at Night model – has been piloted in four acute NHS hospital trusts in England. The Hospital at Night model proposes that a multidisciplinary team or teams provide clinical care across the hospital outside normal working hours. The composition and competence of the team is determined by the needs of the patients being covered. Key elements underpinning this approach include multidisciplinary handovers, bleep filtering and extended roles.

Four trusts were recruited to the Hospital at Night pilot programme in May 2003 and adopted an ambitious, planned and sequential approach to implementation, as set out in the timeline shown in Figure one.

This evaluation was part of a wider programme of research to evaluate the impact of the NHS Modernisation Agency’s Working Time Directive pilots. Earlier research focused

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**Figure one: A timeline of the Hospital at Night pilot project**

- Pilot sites recruited
- Initial data gathering
- Research and literature review
- Staffing model developed
- WTD launch event
- Teams implemented
- Interim data gathering
- Pilots to continue with model to help achieve WTD compliance
- Interim evaluation of pilot sites
- Final JCC steering group
- Report published, workshop for Early Implementation
- Disseminating lessons
- Full evaluation planned
on the implementation process within each of the WTD and Hospital at Night pilots, particularly from the perspective of senior managers and lead clinicians. The key themes and issues emerging from these interviews in the Hospital at Night pilots related essentially to the change management process. Appendix A summarises the key findings.

Evaluation design and methods

The overall aims of this evaluation study were:

- carry out a qualitative assessment of the impact of the Hospital at Night pilot projects on the staff most closely involved with its implementation (doctors in training, ward nurses and night coordinators); and
- to carry out a quantitative evaluation to establish if changes in how the hospitals are staffed at night has had an impact on clinical outcomes, the pattern and distribution of workload, and service targets.

The six primary research questions were:

- How are staff experiencing the implementation of the key elements of Hospital at Night?
- What are staff perceptions of the impact of Hospital at Night on patient care?
- What are staff perceptions of the impact of Hospital at Night on doctors’ education and training?
- Have there been any changes in clinical outcomes since the introduction of Hospital at Night?
- What impact has Hospital at Night had on the pattern and distribution of workload during the night-time?
- Has Hospital at Night affected the achievement of national performance targets in the areas of A&E waiting times, cancelled theatre operations and inpatient waiting times?

A summary of the research questions and related hypotheses is included in Appendix B.

A multi-method approach was used in the evaluation. This comprised face-to-face and telephone interviews (with doctors, nurses and night coordinators), focus groups (with doctors), observation (of handovers) and quantitative analysis of national and local audits and databases.

Four acute trusts, a total of eight NHS hospital sites, were involved in this evaluation study. Although these are now well known to those managers, professionals and researchers with an interest in Hospital at Night and its impact, it is appropriate, for the purposes of this report, not to refer to the trusts and the hospital sites directly but to anonymise them to meet the confidentiality and anonymity assurance given to interviewees during the research process.

There were a number of methodological challenges in carrying out an evaluation to assess the impact of Hospital at Night. While these challenges affect the confidence with which one can generalise from the findings, the research team went to considerable efforts, within the time constraints, to maximise the availability, validity and generalisability of the data collected, both in the quantitative and the qualitative components of the evaluation. For example, in relation to the quantitative component, consultation was undertaken with the pilot sites to develop locally-collected indicators. For the qualitative phase, considerable attempts were made to ensure representation from clinicians involved in the Hospital at Night pilots.
Key findings: qualitative evaluation

The qualitative evaluation addressed the first three key research questions:

- How are staff experiencing the implementation of the key elements of Hospital at Night?
- What are staff perceptions of the impact of Hospital at Night on patient care?
- What are staff perceptions of the impact of Hospital at Night on doctors’ education and training?

How staff experienced the model

A summary of each of the pilot trusts and how the model was implemented in each trust is provided in Appendix C.

The evaluation looked at five issues in particular:

- how well staff understand the Hospital at Night model;
- the staff’s experience of teamworking;
- the role of the night coordinator;
- the effectiveness of handover; and
- the effectiveness of the bleep policy.

Understanding the model

There was a good understanding of the Hospital at Night model in all the pilot sites. The nurse coordinators tended to adopt a bigger picture perspective, while doctors tended to relate the model more to their individual experience. The weakest area of understanding was among ward nurses, some of whom were not aware of the model.

Teamworking

The nature of the multidisciplinary team varied according to the site where it operated. For all trusts, the multidisciplinary team comprised highly trained nurses, who were in charge of Hospital at Night, and doctors from a range of specialties.

For many doctors, teamworking and the introduction or extension of the Hospital at Night coordinator’s role in particular offered a support mechanism. This was particularly the case for medicine and for the most junior of doctors. Coordinators were seen as having a key role in supporting the development of teamwork, especially by the coordinators themselves and the medical doctors:

‘It has worked well. It has brought the doctors together and us together as a team. We have a lovely bunch of people and we work extremely well together as a team.’

Coordinator

‘There is more cohesion between doctors and nurses and the bridge is the coordinator role. It is better for patient care that there is more cooperation.’

SpR Medicine

The main benefits of teamworking reported by doctors resonate with findings from previous research on teams (see, for example, Team Working and Effectiveness in Health Care, Aston University).

Doctors felt that teamworking:

- reduced the intensity of their workload;
- allowed them to concentrate on specific patients and tasks without interruption;
- removed some of the administrative pressures from all grades of doctors; and
- generally added a feeling of support.

In addition, it was perceived that teamworking should enable doctors to discuss cases with other doctors and nurses from different specialties.
In all trusts there was a feeling that team working works better for some specialties and grades than for others. The working patterns of physicians and surgeons are different. Surgical activity reduces during the night shift while medical activity remains more constant, so the impact of multidisciplinary teamwork tended to fall more on the surgical staff who were increasingly asked to ‘help out’. The concept of shift working and the expectation of working a full shift also appear to be more accepted in medicine than surgery, where there were reports that some doctors still behave as if on call.

‘The surgical registrar went to bed at 2am and I had to wake him up at 7am. I was on my own all night.’ PRHO

‘Not all doctors will want to go into the Hospital at Night project, everybody is protective of their specialty... There are limitations to the general implementation of the model. It works better for medicine than for surgery.’ SpR Medicine

SHOs also highlighted the ‘challenges’ of working in specialties not included in Hospital at Night. These doctors felt they were working in more difficult circumstances than their peers in general medicine and general surgery.

The night coordinator role

The Hospital at Night coordinator role developed differently in each of the pilot sites. The night coordinator – a senior nurse at each pilot site – has been a critical part of the implementation and working of Hospital at Night teams. Across all sites the coordinator role was a very popular component of the Hospital at Night model, held in high regard by both doctors and nurses. The coordinator role formalised and extended roles already undertaken by nurses in all trusts.

The coordinator role was seen as a support mechanism for nurses and this made nurses feel more confident, less stressed and less isolated and, in turn, this was felt to relate directly to improvements in patient care. Ward nurses felt that the coordinators were more responsive in Hospital at Night and more readily responded to requests because poorly patients had already been identified. Nurses felt that they were more willing to bring problems to the attention of the coordinator earlier than they would to a doctor and, when they did present problems, they were dealt with more quickly.

As a consequence, these nurses reported that they felt less isolated:

‘It is easier to access them and it has made my job easier as I feel I have more back-up.’ Ward Nurse

‘You have a senior nurse who is always there for advice and before you had to go to a doctor. It is great back-up. You feel more secure and satisfied. You can ring for advice on something you wouldn’t bother a doctor with.’ Bank Nurse

Coordinators themselves saw this as an important part of their role:

‘It can be very scary for more junior nurses on nights. I can remember being on my own on a ward and I would have found comfort knowing that there were people around for you to call on. There were some, but not to the extent there are now.’ Coordinator

The coordinator role offers a ‘stimulating and motivating role’ where development needs are being addressed, and offers a career pathway for nurses. Some reported greater job satisfaction in the role while others found the role demanding, with training needs being met in their own time. Coordinators learn from working much more closely with doctors, in particular SpRs, but also felt that some doctors could learn from them.
The coordinators have built up support from doctors:

‘I think at first doctors felt threatened by us, they thought “they are our patients not your patients”. Education and patience have changed their views and they see we are there to help.’ Coordinator

Handover

As with other aspects of Hospital at Night, the handover functioned differently at each pilot site. However, there was overall consensus that the handover was a very valuable component of Hospital at Night and that it played an important role in improving patient care.

Doctors feel they are picking up the most acutely ill patients:

‘It is very useful because if you get called about a patient you know about them and hopefully the patients you will get called about are the ones that have been flagged up as being unwell.’ SHO Medicine

‘Basically, we are picking up the seriously ill patients, patients who require immediate attention.’ Surgical SpR

The input from other specialties is seen as a valuable contribution to overall care:

‘... it is an easy way to make cross-specialty referrals.’ HO (focus group)

But surgery has proved difficult to get on board in some of the sites:

‘Surgeons have been the hardest to bring on board... getting them to join in the handover, rather than have team-specific discussion, has been hard to achieve.’ Coordinator

Handover was thought to help reduce what some saw as adverse consequences of shift work:

‘Without handover it would not work. The thing about doing shift work is that you need continuity.’ SpR Medicine

Doctors in one site felt that it was an anomaly not to have a handover at the end of the shift as well as at the beginning, and most felt that handover at the weekend would also be beneficial.

Bleep filtering

Bleep filtering is a key component of Hospital at Night as it minimises the inappropriate bleeping of doctors and helps redistribute work effectively. Night coordinators generally thought bleep filtering was good for several reasons: it has helped doctors to finish their shifts on time; doctors are able to see patients more quickly, and they can concentrate on what they are doing, as they are not constantly bleeped:

‘In one way it’s made life a lot easier for doctors because they are not being constantly bleeped, which means that they are able to concentrate on the work they need to be doing.’ Clinical Site Manager

PRHOs and SHOs seem to benefit most from a reduction in inappropriate calls as a result of bleep filtering, while SpRs reported little benefit. SHOs also reported a reduction in work intensity.

Some ward nurses did not like the bleep policy. Some felt this was due to nurses’ concerns about losing the authority to bleep doctors. Another view was that these nurses may have felt comfortable bleeping junior doctors but nervous about bleeping other, more experienced, nurses.
Other nurses were very supportive:

‘It works for me. The coordinator always responds promptly and it’s OK to bleep for advice. They are more involved than they were two years ago.’

Ward Nurse, Medicine

The success of bleep filtering and the role of the coordinator are seen as being dependent on effective teamwork between doctors and coordinators.

The impact on patient care

There was a general consensus that the combined elements of Hospital at Night had had either a positive impact or neutral impact on patient care. This was reported by all members of the multidisciplinary team.

Positive impacts

Patients are treated more quickly
The mechanisms introduced by Hospital at Night prioritise acutely ill patients. This was emphasised by all respondents, who said that as a consequence:

- patients are seen more quickly;
- nurses seek help more readily; and
- patients get medication more quickly.

Patients don’t get ‘missed’
Patients don’t get missed or forgotten. In the past, it was reported that tired doctors may have gone to bed before seeing patients. Care under the Hospital at Night model is considered to be more planned and proactive rather than reactive, for example doctors can put in place management plans for patients during handover.

Patients are seen by the most appropriate person
Under the Hospital at Night model, the most appropriate person sees the patients because the coordinator can let the most appropriate doctor know about the sickest patients. In addition, the coordinator’s skills have been enhanced so that they can treat patients and in some cases prescribe medication.

Patients get more time with the doctor
Doctors and nurses can spend more time with their patients as doctors are not distracted by bleeps. Both doctors and nurses report being able to plan and anticipate patients’ needs.

Patients are seen by more alert doctors
Despite concern about education and training opportunities being lost with the introduction of shifts, doctors are reported to be less tired, feel ‘fresher’ and have a better work/life balance. These factors are considered to have a positive impact on patient care:

‘If we have got a very sick patient, we have access to someone who is there, awake, that can see the patient, we have not got to get somebody out of bed.’

Coordinator

Better continuity of care
Continuity of care between teams is reported to have improved with handover, with the coordinator acting as a ‘bridge’ between members of the team:

‘There is more cohesion between doctors and nurses and the bridge is the coordinator role. It is better for patient care that there is more cooperation.’

SpR Medicine

Improved patient safety
Two key aspects were identified as improving patient safety. First, coordinators were seen as potentially preventing junior doctors from making common mistakes and could ‘keep them out of trouble’. Second, ‘more pairs of eyes on acutely ill patients’ was seen as inevitably improving safety.

Negative impact
The negative impact of Hospital at Night identified by staff was associated with shift working rather than with aspects of Hospital at Night.
Neutral impact
A few staff saw no impact, positive or negative, on patient care:
‘... no effect either way on patient care.’
   Staff Nurse, Medicine and Surgery
‘Some patients may get seen by a nurse rather than a doctor... but if someone needs a doctor they get one.’
   SHO Medicine

The impact on doctors’ education and training
There has been considerable debate about the potential impact of shift patterns and new ways of working at night on education and training.

Positive impacts
Doctors in the pilot trusts identified a number of positive training opportunities.

More time to observe procedures
The multidisciplinary night team can provide support for doctors at night and frees up time for them to spend with senior medical colleagues and coordinators, observing procedures carried out by senior colleagues, for example.

More focused working
The job of junior doctors is reported to be more focused because of Hospital at Night and attention is more focused on enhancing learning:
‘Nights are where I learnt most medicine. I felt totally supported. The clinical coordinator and the registrar talked me through lots of situations and didn’t take over. It was brilliant for learning.’ PRHO

Some respondents also felt that doctors were getting taught how to prioritise their work better.

Shift work means that senior colleagues support junior colleagues
A positive impact attributed to shift changes, which occurred at the same time as Hospital at Night, is that many (but not all) SpRs are ‘up and about at night’, providing support and learning for SHOs PRHOs and coordinators.

Negative impact
Difficulty in using the night-time for education
It can be difficult to use this time (at night) more proactively because one is less motivated to create formal training opportunities at night.

However, some PRHOs who do not work night shifts felt that it was detrimental to training not to be on night shifts.

Key findings:
quantitative evaluation
This section outlines the main data sources for the quantitative study and discusses the key findings. (See Appendix B for more information about data sources.)

The quantitative evaluation addressed the final three primary research questions:
• Have there been any changes in clinical outcomes since the introduction of Hospital at Night?
• What impact has Hospital at Night had on the pattern and distribution of workload during the night-time?
• Has Hospital at Night affected the achievement of national performance targets in the areas of A&E waiting times, cancelled theatre operations and inpatient waiting times?
Clinical outcomes

There were no observable detrimental effects on outcomes in the areas of:
• death rates of patients;
• critical incidents recorded; or
• sickness and absence of staff.

The number of deaths was used as a proxy to evaluate this, as more sensitive indicators were not routinely available. No noticeable differences in the numbers of deaths were apparent across any of the pilot sites. This quantitative finding was also reiterated by the qualitative interviews as all members of the multidisciplinary team reported that there was a general consensus that the combined elements of Hospital at Night had had either a positive or neutral impact on patient care.

A small increase was apparent in the number of incidents classified as critical during the night. It is difficult to determine if this is a result of improved recording mechanisms rather than an actual increase. (Informal discussions with staff at the pilot sites suggest that the former is apparent since the introduction of staffing changes.) This is an important, routinely available indicator that is ideal to evaluate Hospital at Night, and mechanisms should be introduced to assess this on an ongoing basis. The impact of improved recording mechanisms will provide a baseline against which to compare future events.

The sickness and absence rates of staff were analysed to see if any changes in the rate were apparent following changes in staffing under Hospital at Night. Positive impacts on staffing could be reflected in a decrease in these rates, whereas negative impacts could be reflected in an increase. No particular changes, neither increases nor decreases, were evident in the sickness and absence rates. However, the qualitative interviews suggested that, in general, staff viewed the changes positively. This implies that the overall sickness and absence rates were not sensitive enough to enable this to be identified and more detailed information would be required, such as the reason for the absence, to allow the reasons within the control of the trust (e.g. stress) to be identified, and analysed separately. However, such data was, understandably, not available to the research team.

Workload patterns

The pattern of activity was similar across all three audits:
• Workload peaked before 11pm and decreased gradually after 11pm.

The distribution of tasks by grade of staff changed over the audits:
• An increased proportion of tasks were undertaken by the nurse coordinator.
• There was a greater prioritisation of tasks.
• There was a decrease in the number of ‘urgent’ tasks that had to be undertaken within the hour.

The analysis showed that the pattern of workload remained similar across the three audits. There was a distinct peak in activity before 11pm across all sites and workload gradually decreased throughout the night, with a small increase in tasks occurring after 7am. This would be expected due to patient sleep patterns and greater staffing during the twilight shift.

The urgency of tasks over the three audits showed a decrease in the tasks required within the hour and an increase in the number required during the shift. This was expected, as the Hospital at Night model should reduce the urgency of tasks by bleep filtering, the nightly handover and the role of the night coordinator. This finding was confirmed by the qualitative interviews, where it was suggested that the handover was useful in providing feedback about patients who were acutely ill, and therefore care could be anticipated. This could partly explain the decrease in tasks required during the hour, as the task would be carried out before it was urgent, therefore it would be classified as required during the shift.
The hypothesis that work will be undertaken by staff of a more appropriate grade as a result of Hospital at Night was not supported in all pilot sites across the three audits. In Trust A, the overall trend was as expected, i.e. an increase in the percentage of tasks classified as ‘appropriate for me’ and a decrease in the tasks classified as ‘more than just mine’. This suggests that the model adapted in Trust A is more able to assist with the allocation of appropriate tasks, compared with the procedures in place at the other trusts. This might be because the coordinators coordinate those specialties involved in Hospital at Night through a single multidisciplinary handover and filter bleeps for all grades of doctor.

Performance targets

There was no apparent impact on national performance targets as measured by:

- inpatient waiting times;
- A&E waiting times; or
- the proportion of cancelled theatre operations.

National performance targets are used routinely to assess trusts. It is important to assess whether the Hospital at Night staffing changes adversely affected the achievement of performance targets for inpatient waiting times, admission times from A&E or the percentage of theatre operations cancelled. Demonstrating no such adverse effect enables confidence in these staffing changes and promotes wider acceptance of the proposed models at a national level. The analysis undertaken as part of this evaluation showed that there were no particular changes in these national performance targets. Again, this is evidence to indicate that no negative impact occurred. In some adaptations of the Hospital at Night model, particular emphasis was placed on Hospital at Night as a means to support meeting targets (especially waiting time targets in A&E). This was particularly the case in Trust A, where Hospital at Night was seen as a facilitator for meeting targets.

Discussions with project managers suggested that the Hospital at Night model would lead to a refocus on Confidential Enquiry into Perioperative Deaths (CEPOD) guidelines and an improvement in the decision-making process determining whether operations during the night should go ahead. The effects of these two factors were expected to cancel each other out, as reflected in the hypotheses. Again, although some variable changes were apparent in the number of theatre operations carried out across the pilot sites, the magnitude of the changes meant that they were not likely to be attributable to Hospital at Night and were a result of changes in workload, such as overall increases in admissions. The research team was not able to identify any particular changes in the case mix of patients undergoing operations during the night.

Discussion and conclusions

The Hospital at Night model, as developed by the Joint Consultants Committee (representing the British Medical Association and the Academy of Medical Royal Colleges) and the Modernisation Agency, aims to help trusts comply with the WTD, improve the working lives of clinical staff, and improve patient care. This evaluation has demonstrated that the model as implemented in the four pilot trusts is achieving these aims. Teamworking provides valuable support to staff at night, and through handover and improved clinical coordination, the model results in better clinical prioritisation and management of patients.

1 CEPOD recommended in 1987 that: ‘The implementation of the CEPOD classification of operations (emergency, urgent, scheduled and elective) would concentrate the attention of all staff on the fact that very few operations need to be performed at night.’ The National Confidential Enquiry into Patient Outcome and Death revised the classification of operations and circulated them to hospitals in January 2005.
It is important to note that each of the four pilot trusts used Hospital at Night as a key element of their strategy to achieve WTD compliance, and all the pilot trusts have sustained the model. Several are now exploring how to adapt the model to daytime working.

The evaluation has also generated important learning for other trusts about what some of the pitfalls of implementation can be. The Hospital at Night model requires medical and nursing staff to work very differently, and represents a significant cultural shift. For the pilot trusts, this had to be achieved within a very tight timeframe. A key message from the pilots is that such a profound change requires careful management, ideally over a longer period than they had available to them.

The learning for trusts implementing or planning to implement Hospital at Night can be summarised under the following four themes:

- recognising the benefits of change;
- communication strategy;
- introducing new ways of working; and
- staffing levels.

### Recognising the benefits of change

Where the change is perceived to be of value, it is more easily implemented, and this is evident in the apparent difference in ease of implementation between physicians and surgeons. Communicating the benefits of Hospital at Night is crucial in the change process. Since most of the respondents perceived Hospital at Night to be good for patients, communicating these findings to staff involved in the implementation.

### Communication strategy

Hospital at Night was often promoted alongside changes associated with the WTD, including the modification or introduction of shift working for doctors. This has its complications and the Hospital at Night ‘brand’ may prove a hindrance, perpetuating negative connotations of shift working. There were also variations in levels of awareness of some of the components of Hospital at Night among staff. This may have reflected the different communication strategies used to roll out the model. It is important to ensure that the components of the model are adequately communicated to all staff affected by the change in working practices.

### New ways of working

Some staff felt threatened by the changes and there were different perceptions of the obligations and expectations for different types of staff (e.g. physicians and surgeons) working at night. Ensuring that clinical champions are drawn on to support roll-out of Hospital at Night is crucial for successful implementation. Giving staff information about what will be expected of them as a member of the multidisciplinary team is also important.

### Staffing levels

Reliance on agency nurses, locums and sickness will affect the successful implementation of Hospital at Night. In some sites and for some grades of doctor, doctors appeared to be under-managed. Full support for the scheme from hospital consultants is important. Full and successful implementation of Hospital at Night requires a full complement of skilled staff who are familiar with the model.

### Potential

There is potential to improve, consolidate and expand elements of Hospital at Night.

### Team composition

A key aspect of implementing Hospital at Night is determining what skills and
The principle of a team whose composition is determined solely by the competences required to manage patients safely at night will take time to achieve fully. All the pilots were constrained by the competences of the staff currently employed and did not have time to recruit new staff prior to starting the pilot programme. The nurse coordinators have expanded their competences in all sites and in some sites junior medical staff have acquired specific skills to support cross-cover arrangements. Over time, more radical staffing mixes could emerge that are truly competence-based, more reliant on nurses and other staff, and less dependent on doctors in training, especially surgeons. Developing such a team should only be done gradually and with a deep understanding of the case mix that needs to be supported.

**Bleep policy**

There was the potential at some sites for the bleep filtering policy to cover more doctors. It is very important to ensure that the reasons for and the process by which the bleep system is operated are communicated to all staff covered by the policy.

**Handover**

Handover is a critical element of the model. Good handover supports continuity of care and good team-working and provides educational opportunities. In order for handover to work well, the following elements seem critical:

- Medical and surgical handovers should be combined.
- There should be clarity about who is leading the handover.
- All team members should attend.
- There should be a dedicated room for the handover.
Appendix A

Summary of key themes emerging from qualitative interviews at the Hospital at Night pilots
(Mahon, Harris and Faragher, 2004)

Managing implementation
- Importance of senior management support and appropriate clinical and managerial input.
- Strong support for principle underpinning Hospital at Night from senior managers.
- Importance of gaining the views of doctors and nurses implementing Hospital at Night.
- The ‘Hospital at Night’ label and its association with the WTD had both positive and negative impacts on implementation.

Factors influencing implementation
- Changes were promoting positive cultural changes within medicine (e.g. cross-cover), between doctors and nurses, and between clinicians and management. Some antagonism within medicine and nursing and between medicine and nursing emerged as proposals were discussed and implemented.
- Many of the changes introduced were building on previous developments within the trusts and these were more easily implemented and accepted than those perceived as more radical and different.
- All felt that the timescale for implementation was challenging and some felt that a tight timescale generated a greater sense of urgency, which was needed to promote change.
- The importance of communication and the challenges of ensuring that all relevant staff were informed of any proposed or planned changes was considerable. Many felt that more time to communicate and negotiate change would have been beneficial.
- Consultants were concerned about workload and the association of changes with the WTD and with making financial savings.
- SpRs were perceived to have the ‘greatest to lose’ through implementation in terms of out-of-hours pay banding and increased intensity of workload.
- Other challenges associated with new ways of working related to resistance from nurses to adopt new ways of working and inter- and intra-professional antagonism.

Perceived impact of changes
- There was a strong sense of the potential for specific changes to improve the quality of patient care, and many respondents felt that they were beginning to witness this.
- Concerns were expressed about the quality of care provided through cross-cover arrangements in some pilots, particularly where this was a radical departure from established practices.
- All pilots reported that systems were in place to identify critical incidents and at the time of the interviews no concerns about patient care had been reported.
- There was widespread recognition that Hospital at Night was one of many connected changes involving new ways of working. No evidence was presented or suggested in the interviews that the changes had reduced or increased activity in any areas.
Appendix B

Research aims, research questions and hypotheses

To carry out a *qualitative* assessment of the impact of the Hospital at Night pilot projects on the staff most closely involved with its implementation: doctors in training, ward nurses and night coordinators.

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How are staff experiencing the implementation of the key elements of Hospital at Night?</td>
<td>H1: Staff have a common understanding of the nature and purpose of the key elements of the Hospital at Night model.</td>
</tr>
<tr>
<td>RQ2: What are staff perceptions of the impact of Hospital at Night on doctors’ education and training?</td>
<td>H2: The multidisciplinary team is working effectively at night-time.</td>
</tr>
<tr>
<td>RQ3: What are staff perceptions of the impact of Hospital at Night on patient care?</td>
<td>H3: The key elements of the Hospital at Night pilots have had no impact on doctors’ education and training.</td>
</tr>
<tr>
<td></td>
<td>H4: The key elements of the Hospital at Night pilots have had no impact on the quality of patient care.</td>
</tr>
</tbody>
</table>
To carry out a *quantitative* evaluation to establish whether changes in how the hospitals are staffed at night have had an impact on the pattern and distribution of workload, clinical outcomes and service targets.

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ4: What impact has Hospital at Night had on the pattern and distribution of workload during the night-time?</td>
<td>H5: The pattern of workload will remain similar over the three audits.</td>
</tr>
<tr>
<td>RQ5: Have there been any changes in clinical outcomes since the introduction of Hospital at Night?</td>
<td>H6: The urgency of tasks will reduce over the three audits.</td>
</tr>
<tr>
<td>RQ6: Has Hospital at Night affected the achievement of national performance targets in the areas of A&amp;E waiting times, cancelled theatre operations and inpatient waiting times?</td>
<td>H7: The workload will be more appropriate by grade of staff over the three audits.</td>
</tr>
<tr>
<td></td>
<td>H8: There will be no impact on the number of deaths within the hospitals.</td>
</tr>
<tr>
<td></td>
<td>H9: There will be an increase in requests for pathology investigations (using FBC and U&amp;E as marker tests) during the night-time.</td>
</tr>
<tr>
<td></td>
<td>H10: There will be no increase in the number of critical incidents recorded during the night.</td>
</tr>
<tr>
<td></td>
<td>H11: There will be no increase in the level of sickness and absence rates.</td>
</tr>
<tr>
<td></td>
<td>H12: There will be a reduction in the number of call-outs to consultants during the night-time.</td>
</tr>
<tr>
<td></td>
<td>H13: There will be an increase in the use of Modified Early Warning Scores (MEWS) within ICU/CCU.</td>
</tr>
<tr>
<td></td>
<td>H14: There will be no impact on inpatient waiting times.</td>
</tr>
<tr>
<td></td>
<td>H15: There will be no impact on the time taken to admit a patient from A&amp;E.</td>
</tr>
<tr>
<td></td>
<td>H16: There will be no impact on the percentage of theatre operations cancelled.</td>
</tr>
<tr>
<td></td>
<td>H17: There will be no change in the actual number of theatre operations carried out.</td>
</tr>
<tr>
<td></td>
<td>H18: There will be an increase in the level of severity of the case mix of operations in theatre.</td>
</tr>
</tbody>
</table>
Research questions and data collection methods

### Qualitative study

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Data sources/methods</th>
</tr>
</thead>
</table>
| RQ1: How are staff experiencing the implementation of the key elements of Hospital at Night? | • Observation of Hospital at Night handover and shadowing of Hospital at Night coordinators  
• Focus groups with PRHOs and SHOs  
• Interviews with doctors in training, ward nurses and Hospital at Night coordinators |
| RQ2: What are staff perceptions of the impact of Hospital at Night on doctors’ education and training? | • Focus groups with PRHOs and SHOs  
• Interviews with doctors in training, ward nurses and Hospital at Night coordinators |
| RQ3: What are staff perceptions of the impact of Hospital at Night on patient care? | • Focus groups with PRHOs and SHOs  
• Interviews with doctors in training, ward nurses and Hospital at Night coordinators |

### Quantitative study

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Data sources/methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ4: What impact has Hospital at Night had on the pattern and distribution of workload during the night-time?</td>
<td>• Hospital at Night audit</td>
</tr>
</tbody>
</table>
| RQ5: Have there been any changes in clinical outcomes since the introduction of Hospital at Night? | • Hospital Episode Statistics (HES)  
• Locally-collected data |
<p>| RQ6: Has Hospital at Night affected the achievement of national performance targets in the areas of A&amp;E waiting times, cancelled theatre operations and inpatient waiting times? | • National Performance Indicators |</p>
<table>
<thead>
<tr>
<th>Pilot site</th>
<th>Observation and shadowing²</th>
<th>Focus groups</th>
<th>Interviews with doctors</th>
<th>Interviews with ward nurses</th>
<th>Interviews with coordinators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust A</td>
<td>✔️</td>
<td>✔️³</td>
<td>N = 9</td>
<td>N = 6</td>
<td>N = 5</td>
</tr>
<tr>
<td>Trust B</td>
<td>✔️</td>
<td>–</td>
<td>N = 6</td>
<td>N = 6</td>
<td>N = 4</td>
</tr>
<tr>
<td>Trust C</td>
<td>✔️</td>
<td>✔️⁴</td>
<td>N = 2</td>
<td>N = 2</td>
<td>N = 4</td>
</tr>
<tr>
<td>Trust D</td>
<td>✔️</td>
<td>✔️⁵</td>
<td>N = 4</td>
<td>N = 4</td>
<td>N = 4</td>
</tr>
</tbody>
</table>

² Observation and shadowing was carried out in at least one site in each trust, but not in all sites.

³ This focus group involved 15 PRHOs. Fifteen is an approximate number as doctors joined and left the group during the focus group session.

⁴ Two focus groups were held in this trust: one with PRHOs (23) and one with SHOs (20). These numbers are also approximations as doctors joined and left the group during the focus group session.

⁵ One focus group was held in this trust with 10 PRHOs.
## Appendix C

<table>
<thead>
<tr>
<th>Hospital at Night pilot</th>
<th>Key features of the implementation</th>
</tr>
</thead>
</table>
| **Trust A**             | • High level of understanding of the model (ward nurses slightly less so).  
                          | • Clinical site managers coordinate HaN.  
                          | • Multidisciplinary, multi-specialty handover – viewed positively.  
                          | • Bleep policy – covers all doctors – viewed positively. May be working ‘better’ in medicine than in surgery. |
| Single-site, medium-sized (500+ beds) district general hospital, located in an inner-city area. | |
| **Trust B**             | • High level of understanding of model (but implemented differently at different sites).  
                          | • Night coordinators coordinate HaN.  
                          | • Separate surgical/medical handovers – some mixed views, but perceived to work better in medicine.  
                          | • Bleep policy – covers all doctors – generally viewed as positive. |
| Large and geographically dispersed trust incorporating three main sites. | |
| **Trust C**             | • High level of understanding of the model.  
                          | • Night nurse practitioners/duty managers coordinate HaN.  
                          | • Separate surgical/medical handovers – viewed positively, but perceived to work better in medicine.  
                          | • Bleep policy – covers only PRHOs – viewed as positive but may be improved. |
| Two-site trust. The main site is a large inner-city teaching hospital with 900+ beds. The second site is a 300-bedded non-acute hospital. | |
| **Trust D**             | • High level of understanding of model (ward nurses slightly less so).  
                          | • Night coordinators coordinate HaN.  
                          | • Separate surgical/medical handovers – generally positive views, but perceived to work better in medicine.  
                          | • Bleep policy – covers only PRHOs – works better in medicine than in surgery. |
| Two-site trust. One site is a large district general hospital with 800+ beds. The second site is a small 200-bed non-acute hospital. | |
References


Health Care Team Effectiveness Project. *Team Working and Effectiveness in Health Care*. Aston Centre for Health Service Organisation Research, Aston University, Birmingham.


Speech by Rt Hon John Hutton MP, Minister of State (Health), 18 May 2004, on the Working Time Directive.

www.performance.doh.gov.uk/hospitalactivity/data_requests/index.htm
Further support

If you need further assistance with your HaN project, your first contact should be your Strategic Health Authority workforce lead. If you need further assistance with risk assessment of your HaN solution, please feel free to contact the NPSA.

National Patient Safety Agency
4–8 Maple Street
London W1T 5HD
Tel: 020 7927 9500
www.npsa.nhs.uk

DNV Consulting
Palace House
3 Cathedral Street
London SE1 9DE
Tel: 020 7357 6080
www.dnv.com/consulting

Feedback

It is intended that this document will be revised in the future. We would therefore appreciate receiving feedback from those using the proposed approach and reading this document. Please send your comments to the address above or enquiries@npsa.nhs.uk, marked for the attention of ‘Head of Investigations and Safer Practice Lead responsible for emergency care’.