NHS
Health Education England

Better Training Better Care (BTBC)
Pilot Site Evaluation Report

This report is designed to capture your pilot project in your own words. Each section should be completed in full, with appendices attached where necessary.

When completing the report, please adhere to the points below:

- Ensure that you complete each field provided.
- Ensure your answers are concise. Although there is no specific word count for each section, we are looking only for the relevant information to support wider adoption of your project. This report is intended to capture the fundamentals and the key outcomes of your project and should be succinct and easy to read, using plain english.
- Any toolkits, 'how to' guides or other resources that you feel are key to support the delivery of your project should be attached as appendices.

Please note that more detailed data and analysis of your project will be captured by our national evaluation partner Matrix Knowledge for them to independently assess.

Title

Please insert the title of your pilot and if applicable, a strapline to sum up the project in one sentence e.g.

Enhanced education in handover with supporting e-solution
Improving trainee skills and patient safety

Hot and Cold Teams: Enhancing Trainee Experience, Improving Patient Care *Creating a new medical rota to improve patient care/safety and training for doctors, particularly at weekends*

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Introduction

The introduction should to summarise the background to the pilot intervention, what it set out to achieve and why.

1. Background

1.1 Rationale and drivers

- What was the rationale for choosing the project?
- What was the situation before the pilot was initiated?
- What were the local drivers / contextual factors?
- What problems were you trying to solve by implementing the project?

East Kent Hospitals University NHS Foundation Trust (EKHUFT) [1]is one of the largest trusts in the country, serving a population exceeding 750,000, providing integrated patient care across three acute hospitals at Ashford, Canterbury and Margate along with peripheral hospitals at Folkestone, Dover, Deal and Herne Bay.

EKHUFT is one of the highest scoring trusts in the country for patient safety [2] and has achieved NHSLA level 3, being one of 15 trusts nationwide to do so. EKHUFT won the Dr.Foster Hospital Trust of the Year Award in 2010 and was also the Foundation Trust of the year, reflecting the excellent performance of the Trust.

In addition to an excellent record in service provision, the Trust has a strong commitment to education and training. We have a large community of students and trainees (445 medical students and 540 junior doctors).

In light of recent changes in doctors-in-training' hours (European Time Working Regulation), working patterns and models of patient care, we were:

- seeking to redesign the current service model to provide the highest quality training and patient care,
- focussing on improving training and patient safety/care out-of-hours and weekends as these present particular issues both locally, in our Trust, and nationally, as highlighted by the recent reports (Dr. Foster[3], Temple[4] and Collins[5]). Recent reports highlight high mortality rates at weekends in NHS hospitals nationally. [6]

The specific issues that this pilot sought to address, were:

1) Training

a) Inadequate support/supervision

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[1] Trust website for full details – www.ekhuft.nhs.uk
[2] Dr Foster recognition http://www.ekhuft.nhs.uk/patients-and-visitors/news/news-archive/officially-the-best/
[3] Dr Foster "Reducing Mortality at Nights and Weekends" - http://www.drfosterhealth.co.uk/
[4] Professor Sir John Temple: *Time for Training – A Review of the Impact of the European Working Time Directive on the Quality of Training, 2010*
[5] Professor John Collins: *Foundation for Excellence – An Evaluation of the Foundation Programme, 2010*
[6] Research from the universities of Birmingham, East Anglia and UCL

b) Lack of opportunity for meaningful learning encounters and assessments
c) Doctors-in-training feeling, at times, under-supported
d) Doctors-in-training undertaking inappropriate tasks

2) Patient Care

a) Increased morbidity and mortality at weekends
b) Increased length of stay (e.g. awaiting investigations, waiting for review by other specialists, pending team review for discharge)
c) Compliance with the acute care standards
d) Handover.

We knew from survey data that the existing rota in medicine at EKHUFT resulted in:

- Difficulties in being able to attend clinics
- Reduced supervision at weekends
- Lost opportunities to learn and to undertake assessments, particularly at weekends
- Poor attendance at handover and therefore missed opportunities to learn during this time.

We knew from our own Trust data that:

- There were increased mortality/morbidity rates at weekends
- Discharges were slower and fewer at weekends
- In-patients on the medical wards were not always reviewed in timely fashion by the right person
- Length of stay for those admitted in the day(s) before the weekend were longer than for those admitted at other times during the week (suggesting that there was a greater delay in discharging patients at the weekend).

We piloted this in medicine at William Harvey Hospital but the principle and model is designed to be transferable to any speciality, hospital or trust. The model worked alongside, but was not dependent on, the Trust's patient safety programme which includes a variety of initiatives such as:

1. Vitalpac[7] – an electronic system used to transmit/track/monitor live patient data with built-in escalation triggers.
2. Ambulatory care pathways (ACP), e.g.- pleural effusion
3. Hospital-at-Home (HAH) scheme

all of which complement and support the redesigned service model.

[7] http://www.vitalpac.co.uk/

2. Approach and engagement

2.1 Project development

- How was the project developed?
- What was the approach taken for delivering the training intervention(s)?
- Who was involved in its development and implementation?
- What were the aims and objectives of the pilot?

How was the project developed?

a) The project was developed from an initial idea of the Director of Medical Education (DME) who is a respiratory consultant physician. In both roles, she was very aware of the concerns of trainees, as expressed in the GMC survey, the pressures of the existing medical rota and the Trust data showing, at local level, a similar picture to the national one of the discrepancy between weekends and weekdays in terms of patient care/safety. A typical acute hospital, the William Harvey Hospital was experiencing the same sorts of challenges in staffing its medical rota as the majority of regional hospitals. It was felt that if a new medical rota could make a difference in this hospital the it could be transferable to other specialties and hospitals.

b) The DME discussed the possibility of changing the medical rota with clinical colleagues, with training doctors, with medical education staff and with the Trust education adviser. With a prototype model, the DME discussed a possible pilot with the Trust Board and other Trust executives in order to gauge and secure levels of support that would be necessary for the submission of the pilot in a bid to Health Education England (HEE) as part of the Better Training Better Care Pilots project.

c) With the successful application to HEE (confirmed in March 2012), a project board was set up in April 2012 in accordance with Prince2 project management principles. The Project Manager and Project Support were both Prince2 trained. The project board had the following core members:

Project Executive(s): The DME and another consultant physician. (The Project Executive is responsible for the business side of the project and holds overall accountability)

Project Manager: The Medical Education Directorate's Education Adviser and Project Manager.

Project Support: One of the directorate's Band 4 medical education administrators

Senior User: One of the higher medical specialty trainees (HST) used to working in the existing medical rota. (The Senior User represents those who will be using the final model,

or will be impacted by it, or will use the end result to deliver benefits)

Senior Supplier: One of the Trust's Medical Education Managers (MEM). (The Senior Supplier is responsible for the provision of necessary resources and skills.

The above roles are necessary for a project using Prince2 principles. In addition, as part of our core team we had:

Department Support Assistant (DSA): This role was undertaken by the DSA at the pilot site with responsibility for the medical rota.

Communications Manager: One of the Trust's MEMs. We thought it would be vital to have someone to ensure an effective communications and engagement strategy.

Nursing Representative: As a multi-professional pilot, we wanted to ensure nursing representation on the Board and this could vary from meeting to meeting, depending on availability of nursing colleagues.

Finance Representative: The Trust was able to provide a named finance officer with a set amount of hours to support the BTBC project. This person remained with the project for its duration and provided specific support to the Senior Supplier, the Project Executive and Project Manager as well as to the whole Project Board.

Senior Relationship Manager, HEE: One of HEE's Senior Relationship Manager's regularly attended our project team meetings.

Human Resources Business Partner: HR specifically designated a business partner to support the pilot.

Data Analyst: The Trust was able to provide a named data analyst with a set amount of hours to support the BTBC project. This person was able to provide the Trust's statistical data on patients and created a live dashboard of that data in order that the project team could track progress against project objectives.

Academic Partner: In addition to the Medical Education Directorate's Education Adviser (this is an academic appointment), an additional, external academic partner was sought and found in the person of a representative from the University of Kent.

Lay representative: Although we did not have a lay representative to begin, we eventually were able to secure a lay representative for the project board.

In addition to these core members, the project team had additional named members from the consultant and senior nursing body as well meetings remaining open to other representatives from training doctors of every level and nursing and other healthcare professional staff. This ensured that at meetings there were always training doctor representatives and frequently representatives from other healthcare professionals.

a) The project board met fortnightly in the initial months of planning the pilot. In

addition, there were other planned and ad hoc meetings between the Project Manager and different members of the project team.

b) The project team provided regular updates to key stakeholders both internal and external.

c) The project board/team, between April 2012 and August 2012:

- collected baseline data on both patients and training
- fully developed the new, proposed medical rota
- observed and collected baseline data on Friday handover and devised new processes and resources to support that handover
- devised, with nursing colleagues, ways of recording/monitoring nursing and phlebotomy activity over the weekends.
- worked with the Trust's data analyst to analyse baseline data, to set up a dashboard of live data and to decide on the most appropriate methodology for assessing the pilot against the data.

d) Original expectations that the project board would need to meet less regularly once the pilot was up and running were revised as it became obvious that the pilot did require a hands-on approach and a flexibility that infrequent meetings would preclude.

What was the approach taken for delivering the training intervention(s)?

a) The new medical rota pilot was devised and was put in place for the new cohort of training doctors arriving in August 2012. A brief overview of the pre-existing medical rota and the new pilot is provided below with :

The William Harvey Hospital – Medicine

- Numbers of consultants: 16
- Numbers of HSTs/registrars:10
- Numbers of F2 doctors/CMTs/SHOs:20
- Numbers of F1 doctors:10
- Number of wards:CDU (2 wards) plus 7 other wards
- 'Hot' areas: Clinical Decision Unit, Ambulatory Care Unit, Accident and Emergency.

b) The 'old' medical rota (Note: the medical rota does not include A&E):

- The old rota was fragmented as teams of Consultants, typically 3 shared a team of junior doctors who were on call at different times and days to that of the Consultants (see Appendix 1). There was little continuity of care and few opportunities to attend clinics and other procedural sessions. The weekend on call team consisted of one medical registrar, two Core Trainee/F2 combination and two F1 doctors, this meant that their time on call was stretched between acute admissions and unwell patients on the wards. The registrar was frequently called to emergencies on medical and surgical wards leaving very little time for timely assessment of acutely unwell patients admitted on the emergency take.

c) The new pilot medical rota: (see Appendix 2)
- The new rota saw training doctors have their time organised into hot and cold blocks. All their on-call activity was concentrated into 'hot' blocks where they could focus on acute work without being pulled to the wards. Similarly, when in a 'cold' block of time, they would work on the wards without having on-call duties.
- For F1s and HSTs – the rota meant 2 weeks 'hot' followed by 4 weeks 'cold'.
- For F2s, CMT1/2s – the rota meant 4 weeks 'hot' followed by 6 weeks 'cold'.
- Built into the rota for all training doctors were three educational half days. These were invariably attached to zero hours following an on-call period but were paid time blocks that counted as part of their 48 hour working week. These educational half days are used by doctors for attending clinics, for teaching, for observing, for assessments etc. They are in addition to protected teaching time and study leave.

d) The pilot also saw the creation of an enhanced 'cold' weekend team. Under the old system, at weekends:

- 2 Consultants, 1 HST, 2 F2/CMTs and 2 F1 doctors covered the hospital. Due to the pressure at the 'front door', this invariably meant that an F1 doctor would be covering the wards alone. Whilst supervision from seniors was available, in theory, these doctors could and did feel under-supported. HSTs, required by other wards e.g. surgical, could find it difficult to leave the emergency areas and could be pulled from one to the other. Plebotomy services were only provided on Saturday morning.

- **The new, 'enhanced', 'cold' weekend team:** The pilot provided additional monies that enabled an additional HST at weekends, a new Senior Nurse at weekends and a new Band 2 nurse for phlebotomy support – all in addition to the existing F1 doctor. Existing HSTs had their banding enhanced so that these additional weekend on-calls could be put into the new rota. The senior nurse and Band 2 nurse roles at weekends were provided by means of a volunteer, overtime rota.

- This new 'cold' team works as a dedicated ward-based team and the 'hot' team are no longer called to the wards.

e) The Friday handover was altered in a number of ways:
- The time and place was altered to ensure better attendance
- The 'cold' HST/registrar takes responsibility for leading the handover
- The handover sheets were amended to require doctors to provide justification for requiring weekend 'bloods' and also to provide all the necessary details and contingent factors relating to discharge. The aim being that the weekend team should be able to prioritise appropriately and also be able to discharge smoothly and effectively as a result of all necessary actions required before discharge being either undertaken by the weekdays teams in advance or being clearly outlined so that they could be undertaken on the Saturday or Sunday.

f) A communications and engagement strategy was in place to ensure that current staff were all aware of the new medical rota and to induct new staff into the rota. (see Appendix 3)
g) An additional aspect of the pilot was the intended development of a bespoke electronic medical rota – MediRota – developed by an external company that was already working with different specialties in the Trust in the provision of electronic rotas. Our original audit of the existing medical rota suggested that an electronic system that allowed for ease of planning ahead, highlighting gaps and shortages and for flexible reworking of rotas and it was felt that this was a valuable component of the pilot.

Who was involved in the development and implementation of the project?

a) The *project board* as outlined above.
b) The *consultant body*. Their views/input was solicited in advance of the project and throughout it via regular attendance by the Project Executive(s) and the Project Manager at the monthly Physicians' meeting.
c) *Trainees*. Regular meetings and focus groups were held with trainees both in the development and implementation of the project.
d) *Nursing colleagues*. In addition to their representation on the Project Board, the Project Manager and Project Support attended ward meetings and visited wards to communicate with colleagues and to solicit their views.
e) *Site Lead for Medicine*. (The consultant heading the medical department)
f) *Site and Trust managers* (operational)
g) The *phlebotomy department* needed to be engaged in the early development of the project in terms of shaping the pilot/new medical rota. The original intention was that phlebotomists would be engaged on a voluntary, overtime, weekend rota in much the same way as the Senior Nurses. However, it became apparent that there was insufficient interest from the phlebotomists and at the suggestion of nursing colleagues, the offer of additional, weekend phlebotomy working was offered to suitably qualified Band 2 nurses instead.

What were the aims and objectives of the pilot?

1.Enhanced support/training for training doctors, especially at weekends

o *Improved Friday handover*: Specifically - improved handover sheet, improved attendance, better justification for bloods required over weekends, better identification of potential discharge patients.
o *Provision of focused blocks of training i.e. hot – with focus on the acutely ill patient and cold – with focus on the stabilised patient*:
o *Provision of an enhanced weekend cold team with increased senior supervision for junior doctors*:
o *Provision of dedicated learning time at the weekends*:

2. Improved care/safety for patients by:

o *Ensuring they are seen by the right person, in the right setting – first time*: Specifically through the creation of an enhanced weekend cold team to provide a multi-disciplinary team to ensure that patients are seen appropriately and in quicker time; the creation of hot and cold blocks to ensure that doctors are not being pulled away from the patients most needing

them, either the acutely unwell or the more stable patient on the wards.
o *Maximising the learning opportunities for doctors-in-training*: Specifically, to create rota'd time for training doctors to enable them to attend clinics more frequently, attend teaching/training more regularly and to be able to maximise other learning opportunities e.g. carrying out procedures.
o *Speedier discharges for the well, fit-to-go-home patient*
o *Focused review of deteriorating patients at the weekends:* Specifically through improved handover which clearly identifies those patients who are, or at risk or, deteriorating over the weekends and the cold team are able to focus their review of these patients.

3. To provide a project template for other departments, hospitals and Trusts to deliver the same or similar pilot with regard to hot and cold working/rota redesign: This objective is currently being fulfilled through the rollout of the project to the Trust's other two main hospitals. A final project template will be provided following evaluation of the rollout programme in order that it can be made available for other Trusts.

2.2 Engagement

- Who did you need to engage in the pilot – for example: trainees, trainers, consultants, patients, executive Board members?
- What was the level of lay and patient involvement?
- Did you get support from an academic partner to develop the evaluation and outcome measures?

Who did you need to engage in the pilot?

- See above (Section:Who was engaged in the development and implementation of the project?)
- Please also see attached communications strategy (Appendix 3) and communications report (Appendix 4)

What was the level of lay and patient involvement?

- Patient focus groups were held in order to establish some baseline, qualitative data on patient experience of weekend stays in hospital.
- In addition, patients were consulted about the new rota and asked for their views and input.
- A lay representative was appointed to the Project Board.

Did you get support from an academic partner to develop the evaluation and outcome measures?

- The directorate's Education Adviser (an academic appointment via KSS Deanery) was able to provide early guidance in the developing of evaluation and outcome measures.
- With the appointment of an external academic partner (University of Kent), the board was able to utilise that expertise in reviewing/testing its evaluation and outcome measures with any necessary amendments/additions.

2.3 Project management and governance

- How was the project managed and implemented? i.e. what governance, project management structures and processes were put in place?

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Governance and structures:

- As above, and please refer to flowchart (see Appendix 5).

Processes:

- An early business case was written and was incorporated into a Project Initiation Document (Appendix 6). This included other documentation such as our Communication Strategy, Risk Strategy (see Appendix 7), Configuration Management Strategy (see Appendix 8).
- A monthly report process was established whereby the Project Manager, Project Support and Communications Manager produced a brief overview of progress against objectives to date, including current risks and monthly communications objectives and achievements. This was using the template provided by HEE and was made available at internal project board and other meetings.
- A risk register was maintained with risks reported on, highlighted at meetings and with appropriate mitigating actions recorded and reviewed.
- An issue register was also maintained so that issues could be dealt with, highlighted at meetings, escalated into risks etc.
- All documentation relating to the project, including emails, were stored/filed in appropriate locations but were made accessible to all project board members.
- All meetings connected with the project were minuted. In addition, any meetings with stakeholders recorded through informal note-taking.
- Exception reporting: any issues that arose and which needed to be handled urgently/in advance of project board meetings were highlighted/brought to the attention of Project Support/Project Manager/Project Executive depending on the urgency/importance of the issue.

3. Resources

3.1 Funding

- What funding did you bid for as part of your application and how much were you awarded?
- What were the overall financial resources required to deliver your project? Please include the amount of trust funding required in addition to the BTBC funding.
- What was the final budget amount at the end of your project? (Please include the detailed funding schedule as an appendix.)

What funding did you bid for as part of your application and how much were you awarded?

- The Trust was successful in bidding for, and being awarded, the maximum monies available, given the scale and ambition of this project – namely, £100,000.

What were the overall financial resources required to deliver your project? Please include the amount of trust funding required in addition to the BTBC funding. What was the final budget amount at the end of your project? (Please include the detailed funding schedule as an appendix.)

- See initial pilot bid financial resource allocation (Appendix 6)
- See revised PID financial resource allocation (Appendix 6)
- See final financial resource allocation (Appendix 9)

What was the final budget amount at the end of your project? (Please include the detailed funding schedule as an appendix.)

As can be seen from the initial pilot bid costings, the initial projection for the pilot costs included £31,500 that was to be Trust funded. Revision of that figure, in light of the additional time committed to the project by key members of the board, resulted in that sum being increased to in excess of £43,568.34. In reality, whilst some of the time commitment was funded by staff squeezing extra time out of their job plans/work plans, a great deal of time was 'gifted' to the project by individual members of the project board and beyond.

The final resource allocation shows a total spend of £97,170.33 and the remaining £2879.67 has been paid into the Medical Education Directorate budget to offer a minimal offset against the gifted human resource costs as indicated in the PID.

3.2 Staffing

- What were the human resources required to deliver your project?

Extracts taken from the Senior Supplier's Report (Appendix 10)

1. Medical Higher Specialty Trainee (HST)/Medical Registrar

- The new rota involved Higher Specialty Trainees (HSTs)/registrars already in post (August 2012) having to work differently and in new shift patterns for a period before a new group of HSTs/Registrars started in post from October 2012.
- Negotiations were held with the HSTs/registrars in order to resource the new rota, especially at weekends. In addition to a successful negotiation to gain agreement, additional funding was also required for enabling the resourcing of this weekend registrar requirement.
- The new rota also required additional HST/registrar cover to adequately resource the new models of working i.e. enhanced 'cold' weekend team.
- Funds were expended from the pilot budget for locum HST/registrar payments during these months.
- As of October, the new in-coming HSTs/registrars were notified of the new rota which avoided the re-negotiations of working differently. The new models however continued to require additional registrar banding of their pay scale for which funding was used to effect this with match funding by the trust.

2. Additional Clinical Support

Additional clinical support services (at weekends) were provided by Band 6 nurses, deployed from within the trust's existing pool of nurses. A rota for weekend working (Saturdays and Sundays) was administered by a Senior Matron and volunteers signed up for overtime working.

3. Phlebotomy services

A routine clinical task undertaken by training doctors was taking blood samples from patients at weekends. To relieve the doctors from some of this work and free them up to other duties, and in order to speed up the process of asking for and receiving the results from bloods at weekends, it was decided that further phlebotomy services were needed on Sundays. The option of utilising phlebotomists was the preferred option. The deployment of dedicated phlebotomy weekend services was explored from the trust's existing phlebotomy and laboratory department. This proved to unsuccessful as the current weekend (none available on Sundays) services provided by the department was very limited and although the opportunity of overtime working for existing staff was explored, there was insufficient resource to be able to commit to provision of a Sunday service.

Health Care Assistants

- Given this limitation, and at the suggestion of nursing colleagues, Health Care Assistants (HCAs) were considered as an alternative resource. Discussions with a number of HCAs were held facilitated by the Matrons and Senior Nurses. The HCAs were provided with competency skills training before deployment. This proved to be very successful and has the potential of being extended wider throughout other clinical areas of the trust in the absence of any weekend service development plans by the Phlebotomy and Lab Department.

5. Other Human Resources

A range of other funded human resources were factored into the project implementation in order to ensure effective support was available for a successful implementation and completion. They are as follows:

- Project Executive, Project Manager, Project Administrator, Senior Supplier, Communications Manager, information analysis services, finance management services, E-Rostering administrative support.
- Additional time/money from the pilot was allocated for existing administrative staff (departmental support staff), in particular that individual responsible for writing, creating, maintaining the medical rota.
- There was considerable additional human resource involved in the project, as can be seen from those involved in the Project Board and wider team. Clinical and non-clinical staff were involved and the vast majority of this time was ‘gifted’ to the project either in terms of individuals giving of their own free time (often out of working hours) and/or time made in job plans/work plans.

3.3 Other key resources

- Did you require any IT equipment or other types of equipment / specialist input?
- Did you require any specialist medical devices or materials?

Did you require any IT equipment or other types of equipment / specialist input?

- As part of the original pilot, an electronic rota or e-rostering software was commissioned. This involved the Project Board working with an external company who were already providing software/e-rostering services within the Trust. The Project Board was able to secure this work at a 50% discount given the developmental nature of the software and given that creating/customising the software was part of a pilot that might not be continued. The software was designed to run on existing IT hardware within the Trust as well as being accessible via mobile technologies.
- Not originally planned for, or required, in the pilot, we purchased a specialist nurse trolley and attached iPad for the Senior Nurses on the weekend ‘cold’ team at their request. The nurses were able to make a case for the trolley, given the roving nature of weekend ward work and the efficiencies to be made if they could carry their own resources, and for the iPad, given that the Trust had provided all wards with an iPad for use with the VitalPac monitoring system.

Did you require any specialist medical devices or materials?
No.

4. Achievements and outcomes

4.1 Overall achievements and critical success factors

- What have been your greatest achievements and why?
- What have been the critical success factors for enabling these achievements?

What have been your greatest achievements and why?

- Discharges – increased number of safe, appropriate discharges at weekends
- Reduced ength of stay
- Improved mortality rates
- Increased attendance at clinics by training doctors
- Improved handover on Fridays (greater attendance, clearer justification for weekend bloods, management plans etc, improved leadership)
- Improved supervision – especially during the hot periods/assessments of acutely unwell patients.In same team structure, reg not being pulled away etc. Plus weekends.
- Creation of the weekend cold team - improved patient care and improved supervision and multi-professional working
- Multi-professional project working and pilot/service working
- Improved leadership in training doctors
- Board approval for roll out to other sites and maintenance of the model at WHH
- Successful project management in a very busy hospital with overstretched staff (and staff vacancies) in both clinical and other areas.

What have been the critical success factors for enabling these achievements?

- Leadership at Project Executive level
- Project Executive – consultant physician and DME – this was significant in the merging of clinical and educational roles, experience and expertise in the role of Project Executive of a project with this dual focus
- Board expertise and support
- HEE engagement and support i.e. Senior Relationship Manager
- Active and enthusiastic engagement of all project board members especially training doctors and nursing staff.
- Detailed, efficient project management processes.
- The services of Trust data analyst.
- Effective communications and engagement strategy to ensure people were informed, enthused, advised, listened to and kept on board with the project.
- Willingness/enthusiasm of nursing staff to volunteer for weekend overtime work.
- Leadership from training doctors and nursing staff in implementing and leading change.

4.2 Delivered outcomes

What outcomes has the project delivered for the following:

- For trainees
- For trainers
- For patients

- Across the wider multidisciplinary team
- That provide value for money

Please provide headline key findings with possibly a bar, line or pie chart to summarise the findings, rather than detailed analysis and tables. Matrix Knowledge will ensure that they capture the detailed data as part of their evaluation.

For trainees (see data in Appendix 11)
• Improved supervision and support. Trainees have recorded, via survey and in focus groups, feeling better supervised/supported – in both hot and cold blocks of working. • Increased time/opportunities for educational activities. Time was allocated specifically during 'hot' blocks and there is evidence of trainees making sound use of this time. • Focussed learning in blocks e.g. 'hot' – on the acutely unwell patient and 'cold' on the stabilised patient • More structure in their rotas i.e. fixed in one place and avoiding being pulled from 'hot' to 'cold' areas and vice versa • Support at weekends (particularly for F1 doctors) • Opportunities at weekends for leadership (e.g. HST/registrar) and for multi-professional working
For trainers
• Ability to train in a more focussed way e.g. in emergency areas, consultants can train/supervise trainees during their 'hot' block knowing that they are there for a fixed amount of time and that they won't get pulled to the 'cold' areas. They are able to work with trainees and encourage them to repeat procedures etc. • More dedicated time for assessment. • Huge culture change. Indirectly, people had to work in a completely different way due to the new rota – this was not always easy but trainers could acknowledge the benefit to patients. The pilot represented a step towards a consultant delivered service as consultants were much more hands on in the wards.
For patients
• More weekend discharges (see data in Appendix 12) • Reduced length of stay (see data in Appendix 12) • More doctors/nurses at the weekend • Seen by the right person at the right time • Speedier and more bloods and other tests at weekends • More 'holistic', patient-centred care possible at the weekends due to more staff on the wards. • Improved mortality. (see data in Appendix 12) In the last quarter (September 2013 – January 2014, The Trust's weekend mortality/morbidity rates have improved to match weekday rates, so that there are, overall, lower than national levels.) since the pilot has been rolled out to all sites, there are early data to suggest BTBC has contributed to this improvement.

Across the wider MDT
• Nurses able to provide much needed and valued support to junior doctors • Nurses felt empowered at weekends to make a significant difference to the patient experience and to work effectively as part of a new enhanced weekend team.

That provide value for money
The data look at the length of stay of medical patients at the William Harvey Hospital, comparing figures for August 2011 to July 2012 and for August 2012- July 2013 (the period of the pilot). • During the pilot period, there was an overall reduction in length of stay of 0.21 • Based on the costing of a medical bed day being £200-£250, this represents savings to the Trust of up to £663,912 • Working out exactly the percentage of this overall reduction as attributable to the BTBC pilot is extremely difficult, however the increase in medical discharges over the weekend (3%) during 2012-2013 must necessarily have contributed to the reduction in the length of stay.

5. Experienced challenges

List the challenges you experienced, why you experienced them and what steps you took to overcome them, or if not, why not? It is important to capture any challenges or issues that made an impact on progress - irrelevant of how small.

- *Resistance to change.* Despite clear unhappiness with the existing medical rota, as expressed by training doctors in the GMC survey and other forums, there were staff who were unconvinced by the new rota and who felt that arranging work into blocks meant that there was too much focus on the 'front door' during the week at the expense of the wards. In addition, there were training doctors, new in post who had not experienced the 'old' rota and who were resistant to some of the ways of working required with the new rota. The most resistance came from a number of unconvinced consultants. As with all change, careful consultation and management was required together with an effective communication strategy that kept people well informed. This resistance to change was particularly difficult for the project in the early days as an untried pilot was put in place. The service of our data analyst and the capturing of early trends in the data was invaluable as it became obvious that there were clear patient benefits to the new rota. The weekend working team was an instant success and, working with the Trust data analyst, the Project Board was able to demonstrate data evidencing clear patient benefits at a relatively early stage. Whilst that data was clearly not robust, based on only the initial 3-4 months, it provided sufficiently encouraging signs of improvement that helped towards winning hearts and minds. Presence at the Acute Physicians' Group monthly meetings by

both a Project Executive (a clinical peer) and the Project Manager helped answer questions and inform as to the progress of the project and this was vital in gradually eroding resistance to change and winning support for the pilot. Similarly, regular focus groups with trainees helped allay concerns, answer questions and build support.

- *Unfilled posts within the rota.* We were conscious of the problem that unfilled posts would represent to the pilot, particularly with regard to finding locumHSTs/registrars willing to undertake the extra weekend work (our own HST/registrars were given enhanced banding as part of the pilot so that the 'cold' weekend on-call element could be built into their rotas.) However, unfilled posts are a fact of life and the Project Board was determined to run the pilot even without full staffing. How was this challenge dealt with?:
    - Hands-on approach to recruiting locums where needed – both planned in advance and last-minute due to sickness etc – by consultants on the Project Board and by rota administration staff.
    - The enthusiasm of training doctor members of the Project Board and wider team meant that many stepped up to additional shifts and/or assisted in the recruitment of colleagues.
- At the heart of the pilot was the revision of the medical rota. In addition, a new electronic e-rostering system was to be created and implemented. Both required the dedication of the existing departmental support administrator. The Project Board had negotiated with Trust managers to secure additional time from this member of staff in order that they could commit to the project. Additionally, the project offered additional working hours and pay to that member of staff. Specific concerns and risks associated with the rota, the electronic rota and with this specific role within the project arose:
    - Additional workload, not relating to BTBC, was given to this role and this placed a huge amount of additional pressure and stress on the individual concerned.
    - The creation/development of the new electronic e-rostering software and the necessary close working with the external company required greater levels of IT expertise and confidence than had been anticipated.
    - There were some specific, but wider than BTBC, performance issues relating the key rota member of staff which the project highlighted.

These challenges were dealt with in the following ways:

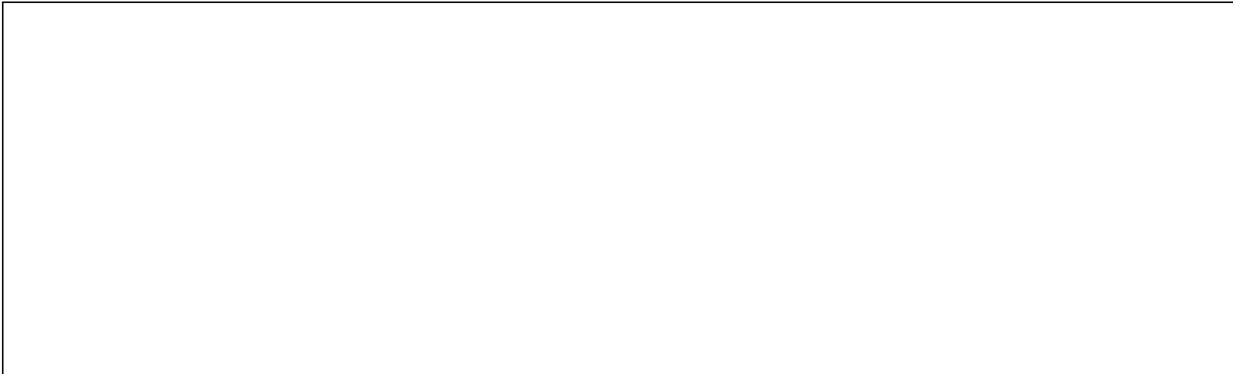
- Meetings with operational management within the medical directorate sought to provide additional managerial and other support for the member of staff.
- The Project Board recruited additional resource within the team to support the work relating to the electronic rota.
- Ultimately, it was decided to abandon the electronic rota software element of the project (with a view to revisiting it once the pilot was over) in order that the core pilot business of the rota itself could be prioritised and not put in jeopardy. This enabled a focus which meant that the rota could be revised, maintained, monitored in advance of and through each rotation of new doctors.
- *Phlebotomy.* This was felt to be a vital component of the new enhanced 'cold' weekend team. There proved to be insufficient resource within Phlebotomy Services. At the suggestion of nursing colleagues, the decision was made to ask HCAs if they would be willing/keen to provide phlebotomy services on a Sunday in order to

support the weekend team. They were very keen and the creation of a rota for HCAs to staff the Sundays throughout the year proved very straightforward. The fact that this was a solution to an issue and the phlebotomists had been asked first was an important factor in ensuring continuing harmonious relationships.

- *Communication.* Throughout the pilot, it was clear that communication – clear, accurate and effective – was vital. Lack of detailed knowledge/understanding of the background to the pilot, its working, the need for change, the local and national context and specific objectives and outcomes linked to training and patient outcomes could and did easily result in misunderstandings and sometimes, a willingness to associate the BTBC pilot with issues, concerns, problems and risks that had nothing to do with it. Despite what was felt to be a carefully worked out Communication Strategy (Appendix 3), this challenge was largely overcome through the provision of additional meetings, one-to-ones, email communication and briefings – in excess of that planned for at the outset. However, this proved vital in terms of ensuring that there was a proper understanding of the remit, workings and potential benefits of the pilot and that people were carried with the project.
- *Resourcing* – staff time. The project absorbed a huge amount of staff time, both in set up and in the running of the pilot throughout the year. This was an ambitious project and required a great deal of management. The time required was certainly in excess of that envisaged.
- *Finances* – relating mainly to the point above, whilst the finances in relation to the additional clinical staffing requirements of the project were almost exactly as projected, the costs associated with overall project management did exceed those planned for. Working within the constraints of the monies provided for the project by MEE, the Project Board benefited from the gifted time provided by many of those involved.
- *Proving that change/benefits could be attributed to BTBC.* Any large trust is subject to almost continuous change in the name of service and training improvement. At the same time as the BTBC pilot were a variety of other initiatives and changes in practice within the medical directorate. As data emerged that showed improvements to patient outcomes, it became ever more necessary to establish the specific causal connection between the BTBC pilot and those improvements. Whilst the pilot has never claimed to be the single causal factor, it was possible, particularly with the assistance of the data analyst, to compare and contrast data across time and between two acute hospitals within the Trust, one with the BTBC pilot and one without, in order to unpick the data. Consultations and meetings with operational and medical managers at the highest level were necessary in order to demonstrate that the BTBC pilot was the single most significant factor in bringing about the outcomes detailed above.
- *Leave and the rota.* One of the most significant factors impacting on rotas is leave. Fixed leave had been considered at the outset but, after consultation with trainees at all levels, it was decided against. However, despite clear processes for the application and granting of leave, taking leave at the last minute, changing leave at short notice, swapping of leave between trainees etc all made planning for the rota extremely difficult and stressful. Eventually, halfway through the pilot, it was decided that from August 2013, leave would be fixed for trainees under the level of HST/registrar. Consultants were keen for this to be the case and the majority of trainees accepted that it would be better. For the duration of the pilot, trainees at the

beginning of their rotation were asked to provide dates and book their leave (with no opportunity to revise except under exceptional circumstances) within the first week of commencing their rotation. This vastly improved matters.

- *Medirota*. As above – this electronic software element of the project was laid to one side. It has since been revisited.
- *Recording the additional educational activities*. Trainees were asked to provide evidence of the additional activities they were undertaking as a result of being provided with additional, rostered time within their rotas. The Project Board felt that the provision of this evidence was too patchy and was insufficiently robust for us to provide a full account of improved educational activity for ALL trainees. Whilst many completed our survey and also took part in focus groups, others did not evidence their activity during the half days allocated within their rota. It was decided that all trainees be asked to complete an educational activity log, to be handed in at regular intervals, so that the range of educational activities and the individual's experience could be mapped. This has taken place since August 2013.
- *Nurses frustration at not being able to access ward resources whilst on the cold weekend team*. About 4-5 months into the project, nurses informed the Project Board that one of their frustrations at the weekend was in not being able to easily access necessary resources in the wards and/or having to spend time sourcing resources from all over the hospital rather than spending time with patients. They provided a solution to this problem, namely a trolley in which they could keep their 'own', dedicated resources/consumables, purely for weekend purposes. In addition, they felt that a dedicated iPad, in addition to the one per ward that the Trust provides, would enable them to quickly monitor patient signs and details without having to go to or ask to access the ward iPads. The Project Board agreed that the proposed solution represented real benefits, efficiencies and cost savings and approved the purchase of both from the BTBC pilot monies.
- *Gather lots of data about the old system.* We found that people had 'forgotten' or had no experience of the old rota and so didn't fully appreciate the problems that the new one was addressing. It would have been useful to have collected some qualitative data – maybe brief paragraphs from interviews – which could have been used to explain the problems that the pilot was seeking to address and which could have provided individuals' experiences.
- If you implement any change and there are other changes at the same time, if there are any problems with that other change, it can be attributed falsely to yours e.g. moving from ward based to team based working was implemented and BTBC became associated with that in some people's minds.



6. Lessons learnt and recommendations

6.1 Lessons learnt

- Other than the above challenges, what have you learnt through your experience of designing and implementing the project?
- Were there additional benefits realised that were not originally identified at the start of the project? E.g. knock-on impacts to other members of staff who were originally not targeted; greater collaboration across teams; and/or a financial gain which was not originally in the plan.
- If you were to undertake a similar project, what would you do differently?

Other than the above challenges, what have you learnt through your experience of designing and implementing the project?

- **The need for adequate and sustained project management time allocation/commitment**
  - This was recognised during the initial planning and bidding stages and was something that was emphasised at the initial MEE launch meeting. However, for an ambitious project that was, effectively,17 months in length, and which was directly impacting on both frontline and ward-based services (both subject throughout the year to both predictable and unpredictable pressures), we underestimated the amount of hands-on management and flexibility required.
  - We were able to meet this need but were reliant on the generosity and enthusiasm of those involved to a significant extent.
- **The need for greater Trust resourcing for the administration of rotas.**
  - The work of staff involved in putting together and administering rotas is onerous and can be stressful. The medical rota is a particularly challenging rota, especially given unfilled posts and the pilot highlighted the fact that the role in the Trust was possibly insufficiently supported. There have been changes since the pilot and additional administrative support has been provided by the Trust for the role.
- **The benefits of using proper project management principles and resources**
  - The Medical Education Directorate and the Trust more generally recognise that project management principles and resources are

essential to effective delivery, evaluation and benefit realisation in any project. This project further highlighted this. It was extremely valuable to have both the Project Manager and the Project Support as qualified Prince2 practitioners.

- **Change management requires patience, resilience, enthusiasm, leadership, commitment, team-working, flexibility, positive thinking.**
  - Building a project team that was committed and enthusiastic was vital to the project. The need to sustain that commitment and enthusiasm over the period of the project was similarly crucial.
  - Composition of the project team was also vital. The need for lead clinicians with the authority, experience and credibility was obvious, as was educational, administrative, managerial, nursing, trainee roles and experience.
  - There was a real need for members of the project board and wider team to take ownership of particular tasks and workstreams. The inability or failure of project members to recognise from the outset the requirements of them as members can be hugely detrimental.
- **Communication and engagement vital**
  - Despite careful thinking and preparation regarding our communication strategy, we learned that the need to communicate effectively, broadly and repeatedly cannot be overestimated and our operationalising of our strategy became more detailed and repetitive throughout the project in order to consistently 'get the message out'. Undoubtedly, we failed in some instances and at some times but, in general, our evaluation of communications throughout the project suggests that they were effective.

Additional benefits

- **Collaboration with Trust data analyst.**
  - Involving a Trust data analyst in the project was a clear advantage in terms of being able to provide and analyse quantitative data.Working with the Project Board, the analyst was able to learn of the specific data requirements of the project and to provide customised dashboards that were extremely useful both in terms of analysis and communicating data outside the Project Board/team.
  - Due to the very effective working relationship(s) established with the Trust data analysis services, the Medical Education Directorate have continued to draw on these services and have been working on devising/building similar dashboards to assist in data analysis within the work of the directorate to help inform decision-making and action planning.
- **Healthcare Assistants**
  - The involvement of the HCAs has been an unexpected benefit to the project and their enthusiasm and commitment for the project has been very beneficial. Qualitative data from the HCAs suggest that by deploying them in the weekend team, patients, nurses and doctors not only benefited from their provision of phlebotomy services but patients

also welcomed them as a familiar face on the wards.

- **Divisional management/ clinical staff**
  - The project has been very helpful in building greater recognition within the medical divisions of the benefits of changing a training model in terms of the benefits to patient care. There can be a perception that 'training' is something that goes on alongside patient care and the dual focus in the BTBC project, the totally integrated nature of the pilot itself and the patient outcomes of the pilot all helped to consolidate the view promoted by the Medical Educaton Directorate and the wider Trust that high quality education /training and patient care are integrated and mutually dependent.
- **Leadership for FP doctors at handover**
  - We discovered that Foundation doctors were taking a leading role in Friday handovers. With renewed emphasis on the handover process and with improvements in the process and protocols associated with handover, FP doctors reported to us that they found these meetings to be more valuable and that they were able to take a lead on occasions. (Please see feedback from Dr Nik Tomanovic in Feedback and Testimonials below)
- **Benefits to medical students**
  - We offered the opportunity to work as part of the enhanced cold weekend team to our medical students. We encouraged two of our medical students to survey those who had participated and to analyse the feedback. Overwhelmingly, medical students felt that the weekend experience had been of real educational value to them. (Please see comments in Feedback and Testimonials below)
- **Innovative project work as a launch pad for research and development.**
  - As part of the project, we were keen to support those involved, particularly those relatively new to research, to use the project as a way of being supported in this sort of activity. We were able to support medical students, foundation doctors, core trainees and nurses in contributing to the research and evaluation elements of the project and encouraged them to submit abstracts on their work to an international medical education conference (The Association of Medical Educators Europe – AMEE). With all submissions accepted, the conference was a very effective communication tool in bringing the pilot and BTBC more generally to the notice of an international audience and also in enthusing participants in terms of thinking about moving on and undertaking further research/audits within projects/pilots intending to bring about change. (see Appendix 13)

If you were to undertake a similar project, what would you do differently?

- Build in more time for project management resource e.g. time, human resource
- Not tried to implement a new electronic rota system at the same time as revising the old rota
- Collect more qualititative data- surveys, focus groups, individual interviews. Implementing a new project in a busy hospital with busy people is very time-

consuming and we were so busy 'doing' that although we did collect this data at different staging points, it would have been useful to have more. We were aware of 'survey fatigue' however and the risk of poor response rates if surveys were repeated to often.
- It was difficult, at times, to communicate to trainees what the 'old' system was like if they had no experience of it. It would have been useful to have collected some qualitative data – maybe brief paragraphs from interviews – which could have been used to explain the problems that the pilot was seeking to address and which could have provided individuals' experiences.

6.2 Recommendations – project enablers

What recommendations can you provide to other NHS trusts who may want to adopt your project? Please think about the critical 'enablers' that need to be in place to ensure the success of the project.

Project Board/Team
- Ensure you have a project team
- Have a medical consultant lead involved in the project team
- Ensure everyone has time to commit
- Ensure everyone is aware of the need to commit to undertaking tasks
- Assign responsibilities
- Try to involve at least one trainee who will be with the project implementation from start to finish e.g. at least a year.
- Work out a clear financial plan in terms of implementation and sustainability and get approval for this
- Ensure that you involve the trainees from the very beginning, ideally from the full range of training levels/grades

Data Collection
- do an audit of the existing rota and identify probems with it
- gather baseline data
- ensure both quantitative and qualitative data gathering throughout
- spend time designing any questionnaires to ensure you get back useful data and data that you can analyse
- Gather lots of data about the old system. We found that people had 'forgotten' or had no experience of the old rota and so didn't fully appreciate the problems that the new one was addressing (as training doctors move on regularly).
- Get early data to encourage and build support
- Think through carefully how to monitor and evaluate learning and educational opportunities and activities for trainees.

Communications and stakeholder involvement
- Have a clear communication strategy. Any change requires effective communication. Communication needs to be with all those impacted by the change.
- Involve all stakeholders right from the start

- Work closely in advance and throughout the project with any clinical, managerial and administrative staff with responsibilities for rota prepraton, monitoring etc.
- Get leadership buy in – senior Trust leadership, leadership of the medical directorate/division, senior nursing leadership, senior management
- Produce regular updates on the implementation of the new rota
- Build a relationship early on with any Trust data/information analysts
- Get early data to encourage and build support (Same point as above but use data to communicate with people about progress/success of the project)
- Work in a multi-professional way both in terms of project team and on the shop floor
- Hold regular stakeholder meetings
- Get trainees involved right from the start
- Sell the new rota both in terms of being of benefit to patients and to trainees.

Designing, implementing the new model

- Work out in advance how to get phlebotomy services at the weekends. Either ensure that existing phlebotomists can support the new rota or that a HCA model, as ours, is one that is supported by nursing colleagues.
- Do a full audit/evaluation of the existing rota/service model and decide how your new model will/could improve it. The basic principle behind our model was that trainees' rotas should be organised into 'hot' and 'cold' blocks. Exactly how these blocks are structured/organised is very much up to the individual hospital and should recognise the specific context and demands of that hospital. It is key to implementation of the model that individual teams/departments/hospitals take ownership and customise it appropriately.
- Do a full audit/evaluation of Friday handover and decide ways in which this can/should be improved.
- Get the weekend team to record activity in order to provide qualitative data to support value of the weekend team.
- Assess the need for and availability of locum doctors that might be needed for the rota if there are unfilled posts.

7. Sustainability and adoptability

You should be able to use the information provided in your project closure report as a basis for completing this section.

- What plans are in place to continue the project within your trust – please include details of wider trust roll-out and/or spread to other specialties?
- How is the project being managed and by who?
- What are the governance arrangements in place?

What plans are in place to continue the project within your trust – please include details of wider trust roll-out and/or spread to other specialties?

- The Trust committed (in May/June 2013) to maintaining and rolling out the pilot within medicine. This means that the new rota remains in place at the William Harvey

Hospital in Ashford, Kent and that it has been rolled out at the Trust's other acute hospitals – the Queen Elizabeth the Queen Mother Hospital in Margate and the Kent and Canterbury Hospital in Canterbury.

How is the project being managed and by who? What are the governance arrangements in place?

- At each of the two hospitals where the pilot rota is new, Clinical Leads have been assigned to the roll out of the rota. In addition, there has been continuing support from the Project Executive, the Project Manager and others from the existing Project Board. Additional monies have been provided to facilitate specific Project Support activities by existing rota administrators on each of those sites.
- In terms of sustaining the rota at the William Harvey Hospital, a slimmed down Project Board remains with ongoing, more infrequent meetings.
- An evaluation of the roll out and sustained rota at WHH is going to be undertaken in order to assess the impact of the new rota. This will involve the same methodologies as employed for the original pilot.

8. Feedback and testimonials

- Please use this section to capture the feedback and testimonials you have received throughout the pilot project (where consent is given). This will be used for the final case study to support the engagement with and adoption by other trusts. You may include this as an appendix, weave the comments throughout the report or insert them in this section. Please state the title of the person concerned.

- Please aim to include a good selection of quotes from trainers, trainees, other members of the MDT, the Medical or Education Director and CEO if possible.

Sir Richard Thompson, President of the Royal College of Physicians, said:
"East Kent Hospitals University NHS Foundation Trust's pilot project has provided an excellent opportunity for clinical staff to advance their training and education in a thought-out and structured way. The pilot enables trainees to experience important emergency situations, without getting pulled onto the wards, and similarly, trainees can focus on their ward-based training and development without being pulled into emergency situations.

"The project team at the Trust has already delivered some exciting early results and I am sure that with their continued enthusiasm and commitment, we shall see even more encouraging findings. As President of the Royal College of Physicians, I strongly believe that excellent training is imperative to the success of the NHS and ensures that it delivers the best possible patient care. I look forward to reviewing more findings from East Kent's Better Training Better Care pilot, and if the final evaluation proves successful, I hope to see the project adopted in appropriate trusts across the country."

Patrick Mitchell, Director of National Programmes, from Health Education England said:
"East Kent has been a great Trust to work with and their enthusiasm to make a difference

was evident from the start. Their focus on making sure education and training were central in their thoughts during the redesign of their front door services has brought success for their patients and those doctors in training. I would urge anyone looking at redesigning their clinical services to do the same – if you can tick the box for education and training, then you are more than likely to have designed services that are truly patient focussed and safe."

Testimonials from consultants:

"The component of BTBC that had the greatest impact on patient care and safety was the introduction of a weekend 'Cold' Team; so much so, that it has subsequently been difficult to imagine how the service managed without it. I think the key to its effectiveness was the presence of senior clinicians (SpR's) and nurses in the team who could make decisions about patient care and discharges. The trade off of this was shorter lengths of stay, and better urgent care of deteriorating in-patients, thereby liberating the on-call 'Hot' Team to get on and manage the acute emergency admissions. As a consultant responsible for in-patients , as well as acute emergency admissions, this additional cover gave me a lot more confidence in the safety of patients." *Dr Morris, Respiratory Physician*

Dr Prathibha is also happy to provide a full testimonial, as is the Medical Lead for the WHH, Dr Jonathon Hawkins.

Feedback from consultants

- The weekends are much better than before. Having two HSTs/registrars is very good (the additional 'cold' registrar at the weekends means that the 'hot' registrar in the emergency areas is no longer pulled to the wards)
- The new rota works well at the weekends . It is important to make sure in designing the rota that there is adequate staffing during the cold blocks.
- Consultants at the WHH were asked during the pilot if they wanted to maintain the new model and there was an overwhelming consensus that we should.

Testimonial from a Foundation Year 1 Doctor

"The BTBC pilot was a great training experience. As a foundation doctor it gave me a varied experience with the opportunity to gain clinical experience whilst adequately supervised both in the ward and the acute setting. It was a comfortable safe environment to work in and ensured optimal clinical care for patients. " *Shreya Bali* (Shreya was one of our foundation doctors who was able to meet with Sir Keith Pearson (Chair of HEE) when he visited WHH to hear about the pilot. Sir Keith was keen to speak to those actually working the rota and visited all the clinical areas impacted by the pilot, speaking to HCAs, nurses, training doctors, consultants and members of the Project Board as well as senior leaders within the Trust)

Report from *Dr Shreya Bali* after her attendance at an event organised by Matrix (the external organisation evaluating the BTBC pilots for HEE) for trainees involved in the pilots.

"I said from my point of view and for such a large scale project it was a good thing that

actually what implemented was well thought out and had been developed with input from many different people (nurses, consultants, trainees etc) which made a difference- the project plan was well thought out and actually hit the ground running.

Furthermore I felt in our group we had a great project leads (Dr P and Susan) who were very approachable and amenable to feedback. This allowed trainees to be actively engaged in the scheme. With this scheme there were opportunities right from the senior trainee to the FY1 level to get involved in all aspects of training. Not only did it improve clinical training, it also gave us the opportunity to get involved in leadership, quality improvement and training in a broader sense (I used myself and AP as examples of senior and very junior trainees). I said how having collected robust data helped to show to trainees, and in fact trainers (consultants), that the project has brought about a positive change on many levels and this has helped motivate and engage others in the project." *Dr Shreya Bali*

Testimonial from a Foundation Year 1 Doctor

"In leading the handover meeting, on-call Foundation doctors have taken the opportunity to use their clinical knowledge to obtain necessary information, triage patients accordingly, discuss difficult cases, question the indication or importance of certain requests, and subsequently use that information to lead the ward-cover (enhanced cold weekend) team by setting priorities and allocating time and resources appropriately. This project has succeeded in ensuring that patients are reviewed in a timely fashion by appropriate people, that investigations ordered are justified and that resources are maximised. By encouraging appropriately supported Foundation doctors to take the lead in Friday handover meetings, and thereafter guide the ward-cover team's duties, we were provided with valuable opportunities to develop our medical leadership competencies whilst still providing better care to patients." *Dr Nik Tomanovic*

Testimonial from Band 6 Nurses who have regularly worked as part of the enhanced cold weekend team

"An enjoyable experience to support the doctors and work as a team with patient assessment and offering expertise and knowledge in a clinical setting. Changes in practice include timely assessments and an easily contactable staff member to triage patients facilitating improved patient care on the wards. Ward areas are very receptive and always responsive to your presence.

My personal experience is that there is always good working relationships within the team. The pilot has enabled safer patient discharges with good patient flow." *Emma Bull*

"The nurses on the wards appreciate that the enhanced team are able to help with cannulas, venepunture and facilitating discharge. Very junior doctors appreciate having a Band 6 Sister on-board to help them and they are eager for reassurance and advice. We definitely feel that the provision of a skilled nurse on the team helps to promote safe and effective care." *Liz Bonham*

Testimonial from Elizabeth Nyawade, HR Business Partner and Member of the BTBC Project Team

'The project was a demonstration of great multi-disciplinary team working across clinical and non-clinical roles internal and external to the Trust and shows how much can be achieved by a diverse group. I enjoyed the commitment and dedication shown by the project team members and the leadership'. *Elizabeth Nyawade, HR Business Partner*

Testimonial from Dr Anup Patel, Trainee

Pre-implemetation

Prior to the design and subsequent staggered rollout of BTBC in August 2012 the junior doctor medical rota consisted of 4 weekend on-calls (2 night and 2 day) and once weekly day on-calls. Annual leave required arranging and on-calls needed swapping as a result. Junior doctors would often start week day on-calls doing ward rounds for their own teams before being called to clerk patients for on-call purposes. This lead to conflict and pressure between ward work and on-call work. In modern hospital working the idea that ward work was less important than on-call work was leading to delays in discharging patients and delays in seeing patients who were unwell on the ward. If the junior doctor was the only doctor on that team for the day they were torn between ward patients and on-call patients. Junior doctors also did 11 day stretches working 115 hours in those periods.

Weekend on-calls prior to BTBC consisted of one registrar, 2 SHOs (including F2 grade) and 2 house officers covering all admissions, discharges, post take rounds and in-patient ward care. The weekend system was reactive and patients were poorly served as a result.

BTBC was designed primarily to improve patient safety on the weekend. This required addressing the rota to produce a protected team for the wards over the weekend. It was also an opportunity to change the weekday rotas to protect an separate on-call duties from ward work. This would allow exclusive working in either domain and the benefits of continuity and education that come with that.

Post Implementation

The introduction of BTBC faced the usual problems of introducing change in a large organization with a transient junior doctor workforce. Communication was difficult and despite good efforts made there were teething problems with rotas; doctors having booked pre-existing leave, and staff shortages when doctors needed sick leave or urgent leave for other purposes. This was mitigated by a slow rollout of SHO and F1 grade rotas initially and then registrar grade rotas later. More notice to prospective doctors involved in the changes would have been beneficial with an information pack going out beforehand to supplement information and explain why the changes were being made.

As a junior doctor who has continued to work in the trust after BTBC there is a clear improvement in weekend care for in-patients. The leadership and man power provided by the weekend cold team provides directed, proactive care leading to timely reviews and discharges. It has been a good step to true 7 day working demonstrating the benefits this

would bring in terms of safety and efficiency.

The hot teams have seen less intensive on-call periods. This is because their 35 days away from the ward incorporate 14 working days, 3 half days for training and the remainder being rest or annual leave. This is a step-wise change from 11 day stretches purely because it allows rest and education.

The cold teams during the week are stretched as a result of having doctors on block rotas. Ward work, because of the unprecedented number of admissions, mainly over the winter can be difficult. This is potentiated by the fact that doctors on cold teams will work weekdays for 5 weeks at a time. This produces continuity but can also lead to over-working if there is sickness or gaps in the rota. The Trust has taken steps to employ 3 long term locum doctors to move between teams to cover long and short term gaps.

Initially BTBC was contentious, especially about cold team working on the weekday. The Trust continues to evolve and provide more support to these weekdays teams and in some ways BTBC has led to more recruitment of doctors on weekdays to ensure the running of the hospital continues efficiently. The weekend care is where the vast improvement has occurred. Patients on the weekend now benefit from a dedicated team looking after their medical needs, speaking to their families, escalating their care, and when appropriate, safely discharging them. This, together with protected education and block –oncalls, is clearly a progressive and safe way of working and there is little argument for returning to the old way of working.

There are areas which need addressing though and many of these are related to the number of junior doctors out of hours. The night team still only consists of three doctors. Even with the advent of an outreach team this is painfully inadequate and does not reflect the rising demands of night working. The week day working is also exposing the workload of junior doctors during the course of a normal day and certain teams clearly could use extra doctors to reflect the number and turnover of patients they are responsible for.

Overall BTBC has been successful and although there have been problems attributed to it, these are not new problems. Going back to the old way of working would clearly be deleterious for training and safety. If anything, the model should be built upon. *Anup Patel, Trainee, East Kent Hospitals University NHS Foundation Trust*

Feedback/Testimonials taken from training doctors during the pilot (mostly gathered at focus group meetings and Project Board meetings)

- "the "hot" experience is really very good – it's a real adrenalin rush → really good learning experience." ST1 doctor
- Restructured the rota – blocks of on-call to ensure enough staff covering acute take. Also helped with ward cover at the weekends – previously there was just one F1…which was a bit overwhelming. Benefits – weekends work really well. Takes a lot of pressure off the acute registrar. F1s have given really positive feedback, really value having the registrar around to give support and advice. It works well during the

week. As a hot registrar at the weekends, it is really good. Previously, if someone from the specialty ward,surgical wards, for example, called you and said 'I've got this patient, I want some advice' you just wouldn't have time but if you are on the cold team, you are still busy, but you've got a bit more time to go and review. As cold registrar at the weekends, you meet with the senior nurse and the F1 and go through the handover folder and split up the jobs between you, generally they will say the type of review or the role that should review e.g. registrar, nurse, F1 doctor. We'll generally reconvene at lunchtime to review the work. Handover has improved – people during the week identify patients who are potentially able to be discharged and prepare the EDn but with specific criteria for discharge and this is working much better. (ST4 – gastro-enterology)

Feedback/Testimonials taken from nurses during the pilot

- "…the junior doctors really like having us there (at the weekends), they come to us for advice."
- "…before – a lot of junior doctors were called to do bloods / cannulas etc and not able to do other more important jobs, we can do help with that now."
- "As we go around we can highlight the sick patients to them."
- "I really enjoy it. Doctors are used to us, not afraid to ask questions."
- "We have built up a relationship with the doctors who are happy to talk to us."
- "Patients appreciate our presence as we can be called quickly when doctors are on a different ward, to do cannulas etc …which saves everyone time."
- "BTBC has made a huge difference and is a brilliant idea, it's working really well. We enjoy the work as it is not manic, more like 1 to 1 nursing and meeting people…not stressful and more autonomous…no-one is on our case. We get to know the caseload and are able to work through it independently."
- "The nurses on the wards like to see someone every weekend and appreciate that the extra nurses are there helping with cannulas, bloods etc which saves time."
- "The patients are happier as the system expedites their discharge."
- "If the ward nurses ring the Cold Registrar or they ring the Band 6 nurses ."
- "The availability of extra nurses and doctors ensures increased patient safety."

Testimonial from medical students who participated in the enhanced cold team at the weekends

- "The BTBC pilot provided an excellent experience for training. The changes to service structure ensured adequate personnel and support were available whenever needed. Perhaps even more importantly, extended hours enabled training from high level staff to continue even during evenings and weekends, allowing for increased

opportunities for learning beyond the normal working day. As a medical student these proved some of the most valuable experiences during my time at the William Harvey Hospital." *Ishaac Awatli*, Year 4 medical student, King's College London

- At the weekends you definitely get to spend more time with patients. I really felt there was an increased opportunity to clerk patients and to take bloods. It was also really good to work with the 'hot' team as I was able to present much more." *Anushka Sieunarine*, Year 5 medical student, St George's University International School of Medicine, Grenada

Comments from medical students provided on a survey asking them about their experience of participating in the enhanced cold weekend team at the weekends

- I did feel part of the team and there was the opportunity to talk more to the F1 and the reg. I got to participate in the review of acutely unwell patients. Definitely an active role on the team. I think this role could be expanded for med students
- Great assistance working at the weekends
- I feel the quality of learning was dependent on the team on call. In some case you learnt so much to the point of explosion while others you were doing more technical jobs e.g carrying the folders, IPAD, drawing blood; which are all part of the learning process but there needs to be a balance and a reasoning for every patient management explained t the student.
- There were many opportunities to practice both clinical skills and communication skills with patients as well as being able to function and be a part of the medical team on weekends.
- Definitely helpful and gave me better idea of how weekend work is. I think this is a very good experience for med students.
- Really useful - good to work with nurses and with F1
- It was a good experience, and got to be more active
- This is a good learning opportunity for students as they see first hand acutely unwell patients and can therefore observe and aid in there management. There is more contact with seniors during the weekend than a normal weekday which benefited me a lot. The only problem was that the instructions given to us about where to meet the team at the beginning of the shift were wrong.
- So much more time with the doctors, and you feel part of the team and that you're actually helping with something.

Feedback from patients (focus group) about the need for improvements to weekend working on medical wards. These were patients who had experienced being in hospital at weekends BEFORE the new rota and new weekend team had been implemented.

- "Sometimes there are delays … delaying discharge…sometimes for up to a whole day when patients could easily go home which would free up beds."
- "If you come in before Friday you just assume you will stay over the weekend, you may see the doctor but if you are well you won't be discharged. Generally, you do not expect to see a doctor at weekends."
- "It is much worse at the weekends…waiting a long time for blood results… the hospital grinds to a halt over the weekends."
- "Patients being stuck in hospital (at weekends)costs money for the Trust."
- "The new model sounds like it will make a real difference – just having more doctors and nurses around at the weekend will make a difference."

Appendices

If you have developed any toolkits, 'how to' guides or other resources that you would like to share, please include these as an appendices to the report.