University Hospitals Birmingham NHS
NHS Foundation Trust

The Health Foundation
Inspiring Improvement

Shared Purpose

Shared Purpose

Final Report

Project: MyDay@QEHB – a personalised schedule of care events for inpatients

Organisation: University Hospitals Birmingham NHS Foundation Trust

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Contents

Abstract

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1. Please provide a brief overview of your project

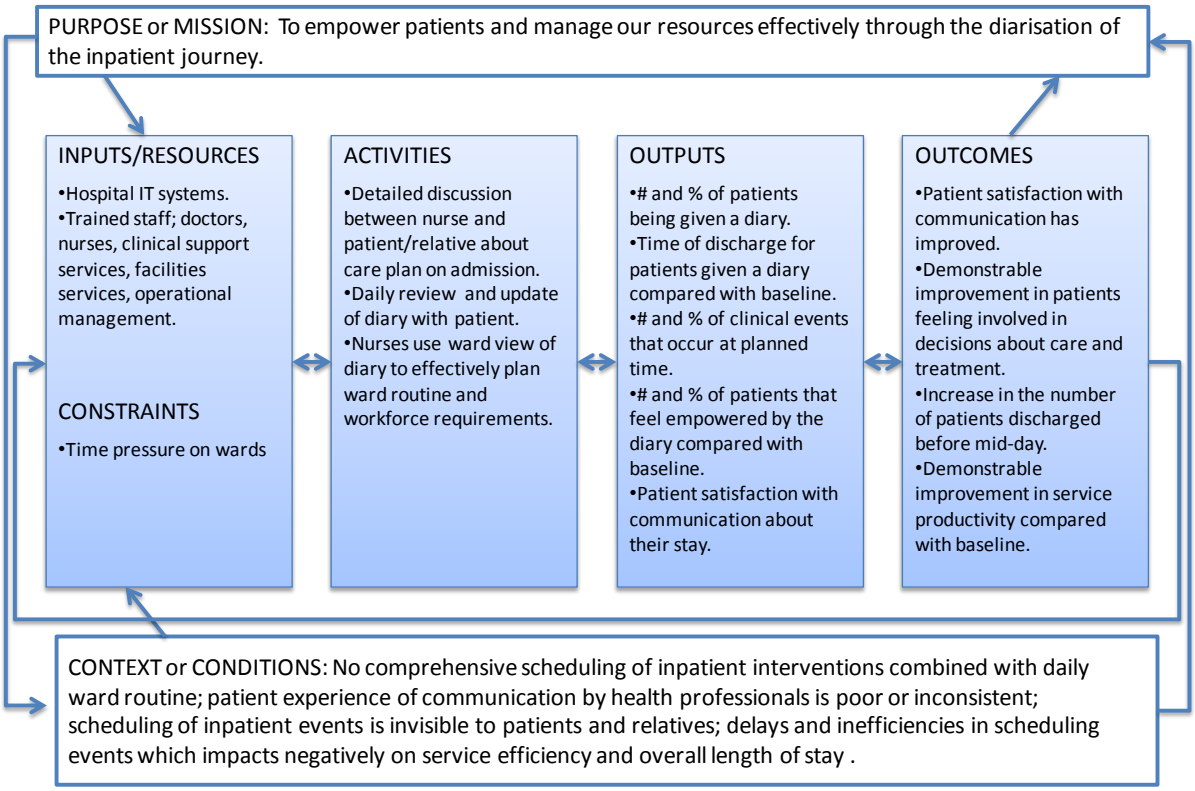
In 2011 we carried out process mapping and completed a survey of inpatients to determine the extent to which the scheduling of planned clinical events were accessible to inpatients and ward staff. We learned that most inpatient scheduling was invisible to the patient and staff alike. A literature search found no evidence of systems that presented patients with a logical, co-ordinated schedule of inpatient events.

Patients told us that they perceived ward nurses as being too busy to interrupt and only half of the patients we spoke to recalled being told about the day to day routine of the ward.

Ward staff reported that they spent significant time finding out when patients were scheduled to receive an intervention; often having to access a number of different computer systems or making numerous telephone calls. Porters told us a lack of booking co-ordination often meant they experienced wasted journeys to collect patients who were unavailable.

The primary driver of our project was to put patients at the centre of care planning; empowering them to participate in their care in an adult:adult relationship as opposed to a parent:child or clinician:patient relationship. The vehicle for achieving this was MyDay@QEHB; a daily schedule of ward routine and planned clinical interventions. Our intervention would be pivotal in this concept of therapeutic alliance. This alliance includes the interrelationships between patient, healthcare professionals, friends, family and carers and is indicated by mutual trust and co-ordinated healthcare.

LOGIC MODEL FOR DIARISING THE INPATIENT JOURNEY



2. What was the problem that you were seeking to address?

Richard and Hilary's Story

Richard was admitted as an emergency via the Clinical Decisions Unit. He was so poorly that he had no recollection of his first 2 weeks in hospital. His wife, Hilary, was worried about leaving his side in case she missed something important about his planned care. Hilary felt she was in a constant battle to get information about Richard's care plan from busy staff. Hilary recalled being told Richard needed a CT scan but not knowing whether it had been arranged.

Richard was transferred to another ward and they both had to get to know different staff and a new routine. They worked out the new routine for themselves after a while. Richard thought he would never walk again and he was frightened about the future. He slowly got better and was particularly grateful to his physiotherapist who visited most days and encouraged him to walk again.

Both Richard and Hilary felt that had MyDay@QEHB been available to them during Richard's admission it would have empowered them to ask questions and challenge staff, reduced the anxiety they both felt and given them confidence that a care plan was in place.

The reality for us was that even though some information existed within our clinical systems about which inpatients had been referred to services and even the date and time that those services would be provided, this was invisible to patients and staff alike. We found evidence that clinical support services – although aiming to provide a responsive service - organised their schedules to suit staffing and resources available. This made it all too easy to delay

and reschedule inpatient interventions for operational reasons without causing any obvious inconvenience to the patient. There was however sometimes a detrimental impact on organisational efficiency and productivity. One of our survey respondents told us:

"Two porters sometimes come up for the same patient. A few days ago one porter came to take the patient for a CT scan and the next minute another porter arrived to take the same patient for an ultrasound".

Even more challenging was the fact that some clinical services; imaging and therapies, did not operate a booked appointment system. We had to work with these services to embed significant operational process change before we could introduce MyDay@QEHB on the wards.

A survey of ward staff told us that they were frequently asked schedule related questions by patients and relatives:

"When are the doctors going to be on the ward?"

Or

"What time am I having my procedure?"

One of our hypotheses was that by presenting ward staff with an overview of schedules for all inpatients on a ward, resource clashes could be avoided and the visibility of planned events would save staff time they currently spend seeking out information to pass on to patients and relatives. These benefits could only be realised if ward staff interacted with MyDay@QEHB and used it as a vehicle for communicating with patients. Our challenge was therefore to find a way of fitting MyDay@QEHB into an already busy routine and avoid it feeling like a burden to staff as this would risk sustainability of the intervention.

Our plan was to use MyDay@QEHB as a platform for innovation and a way of stimulating cultural change on the ward and in clinical and corporate services alike.

Key stakeholders included patients and carers, who participated in co-design workshops, ward staff, who helped us understand and publish ward routines; imaging and therapy staff, who we supported to redesign their patient scheduling processes; porters, who we supported to redesign the way they responded to patient transport requests; and the IT and Informatics teams, who developed a reliable way of extracting referrals and booking information to present as a single, personalised schedule for inpatients.

3. What were the original aims of your project at the point of your proposal?

Our primary aim was to improve inpatient experience and put patients and carers at the centre of their inpatient care and management. MyDay@QEHB is a printed schedule of planned clinical interventions and ward routine events which, when shared with patients, acts as a central point to co-ordinate booked events from the many different services involved, whilst remaining focussed on the individual needs of the patient.

We believed the benefits of this therapeutic alliance were twofold; firstly a patient's positive perception of the care and support they have received should promote emotional well-being and secondly, increasing patient trust in clinicians should increase satisfaction with care and adherence to treatment plans. The issue of increased trust in an organisation that can adhere to an agreed schedule was flagged up by staff who pointed out that using MyDay@QEHB would demonstrate the co-ordinated nature of their care and would increase trust in the organisation and its staff.

A secondary aim of the project was to facilitate improved co-ordination of resources. By providing ward staff with an aggregated view of patient schedules, combined with redesigning processes in corporate and clinical support services, it was anticipated that care would be delivered more efficiently.

At the time of our proposal ward routines were not published so one of the early objectives was to observe, collate and share a timetable of ward routine events for each ward. This proved to be so helpful to ward staff and patients that ward routine posters were printed and displayed on a number of wards. An example of one of our MyDay@QEHB ward posters is included as an appendix.

MyDay@QEHB works by "mining" referrals and booked appointments from a range of different clinical systems. These are then presented within a single personalised schedule as timed events alongside regular ward routine events. See Appendix one for an example MyDay@QEHB schedule. At the outset we were challenged by the fact that key clinical support services; inpatient imaging, physiotherapy, occupational therapy, dietetics and speech and language therapy, did not schedule inpatient appointments at all.

A major concern in sharing the timing of planned clinical events with patients was whether or not those events could be delivered reliably and on time. At the time of our proposal the portering service worked by responding to patient transfer requests on an ad-hoc basis which was also inefficient because porters were not deployed in a logistically intelligent way.

The project, therefore, had to support all of these services to fundamentally redesign the way that they worked. These redesign projects had to be completed before the MyDay@QEHB schedule could be deployed.

Journey

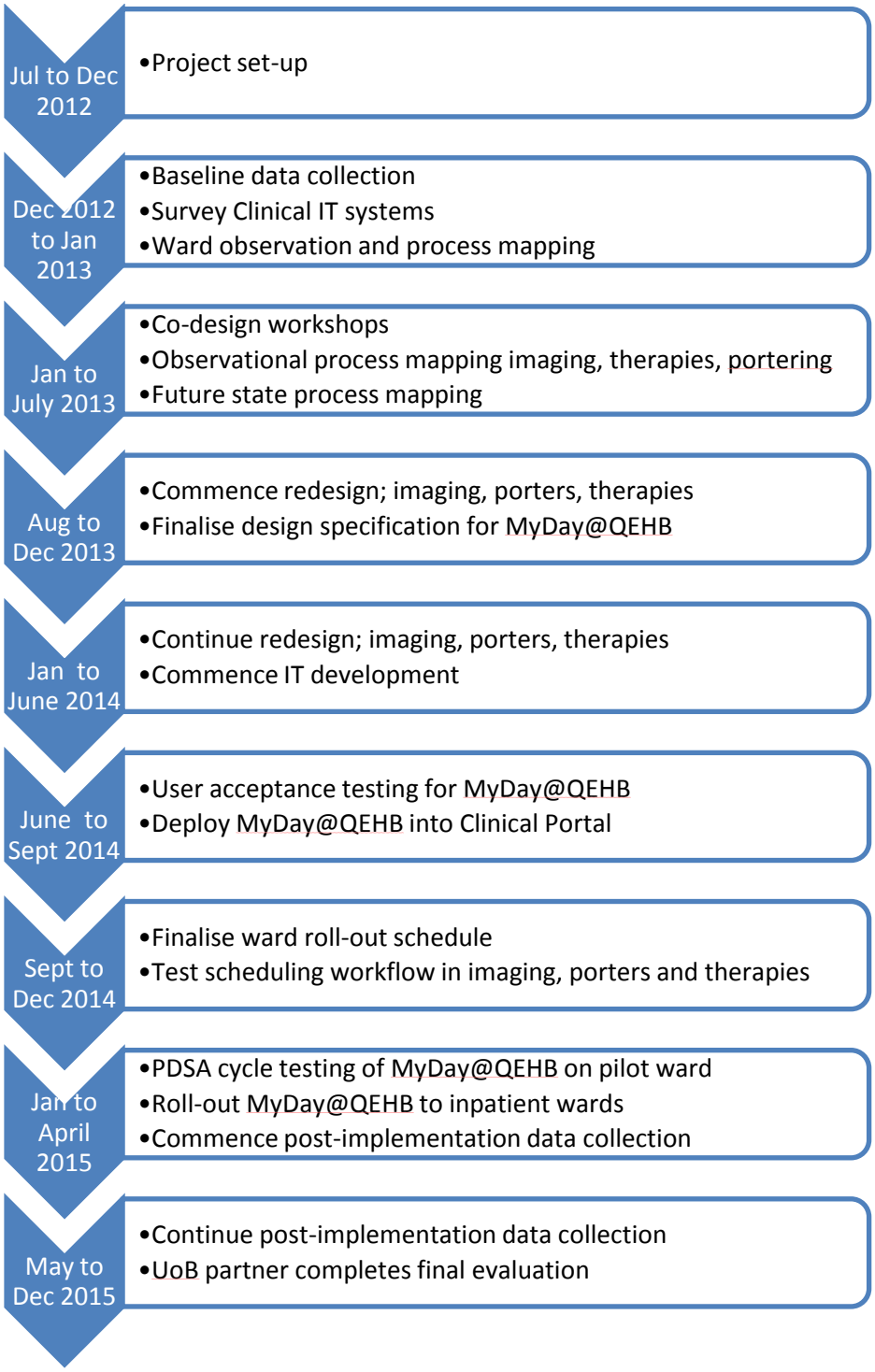
4. What changes have you made to the design of your project along the way?

Our project title started out as “diarising the inpatient journey”. However, feedback from the co-design workshops (see Appendix 1A) was that this title was not meaningful and conjured up an image of a diary as a journal. The title became MyDay@QEHB; a positive and recognisable identity for the project.

The design of the MyDay@QEHB schedule (see Appendix 1B) did not fully emerge until December 2013; half way through the implementation phase. This was deliberate as we were determined not to pre-empt our work with stakeholders by developing a prototype which may then have limited creative thinking. An unexpected outcome of not having a tangible design until so far into the project was a reduction in project momentum – not from within the core project team – but from colleagues involved in the process redesign work that would underpin the development of a schedule. We learned how to manage the expectations of colleagues and we adjusted our project steering group membership to “bring them inside” the core project group.

With the benefit of hindsight, it was not until the Shared Purpose Learning Event in June 2013 that we fully appreciated the value of storytelling as a means for communication. That learning set presented a turning point and we realised we were not making good use of the stories we had collected. Subsequently we agreed to describe MyDay@QEHB to stakeholders using the themes and stories that emerged from our co-design workshops. For example, one patient told us they had left the ward for an x-ray and missed their lunch. When we used this story to illustrate our rationale it resonated with ward staff who appreciated how beneficial it would have been to have had advance notice of that x-ray appointment.

5. What has happened throughout the lifetime of your project?



Our project commenced in summer 2012 when we appointed the project team and began baseline data collection. One of our earliest tasks was to survey clinical systems in order to scope the extent to which booked appointments were available for extraction and publishing. We undertook this survey in early 2013 and it demonstrated that the timing of surgical

procedures was available from within our theatre IT system. We were also able to identify predicted date of discharge – although this proved to be subject to frequent change. Referrals to imaging and some therapies were available from within our Prescribing Information and Communication System (PICS). However, neither therapies nor imaging had a process for scheduling inpatient appointments. Both worked on an ad-hoc basis and organised their daily workload according to the resources available that day. In the case of therapies, this meant that staff would visit the wards each day to respond to referrals and assess which patients required intervention. For imaging, routine inpatient requests would be printed each day and placed in a basket for porters to respond to. Clinically urgent requests were prioritised. Therefore, the focus during mid-2013 was engaging with therapies and imaging to redesign the way their inpatient work was managed and introduce appointment systems that could then be published into the MyDay@QEHB schedule. This early implementation work was significant, time-consuming and critical to the delivery of the final product.

Another area of focus during early implementation was the redesign of the porter task allocation system. A new system was introduced whereby porters were allocated patient transfer requests based on the location of their last completed task. An on-line request tool was introduced which allowed patient transfer requests to be prioritised by location and clinical priority. When combined with the scheduling of appointments, we were able to both publish appointment times and have a high level of confidence that patients would be collected in good time. The introduction of these new systems also provided us with productivity data for pre and post-implementation evaluation.

Once we were confident that we were able to “mine” clinical events from our various IT systems we turned our attention to the design of the MyDay@QEHB schedule itself. Using the evidence based technique of Experience-Based Co-Design (EBCD), we engaged with patients, carers and staff between December and March 2013 to establish design principles and essential functionality for MyDay@QEHB. More detail is provided in section 6.

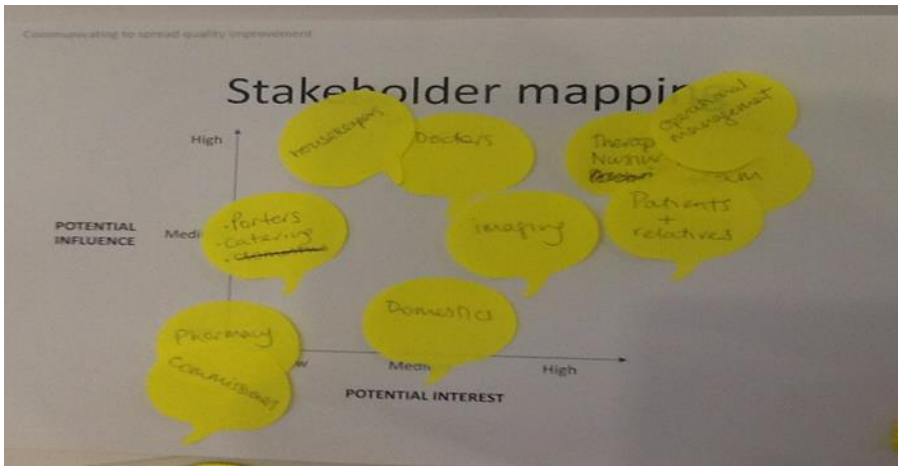
Working with colleagues in our IT department, we developed a technical specification of requirement in order to create MyDay@QEHB as a module within the Trust’s Clinical Portal system. The Clinical Portal is an electronic patient record system, combining information from a number of other trust systems to present the user with information about a patient’s referrals, correspondence, attendance history, laboratory results and demographics. The logic for using an existing clinical system was that we did not want to introduce a new and separate tool to staff who expressed a preference for the familiarity of existing systems. Neither did this development happen remotely in the “back-office” as we had a strong belief that a direct connection between our patient group and IT developers would produce a stronger and more intuitive design. This proved to be the case and the lead developer attended all EBCD events and got to know our patient group well. A MyDay@QEHB prototype was shared with the EBCD group and adjusted over a number of weeks using PDSA cycles (Plan, Do, Study, Act; a recognised service improvement technique). The final module was tested and deployed into the live Clinical Portal system in summer 2014.

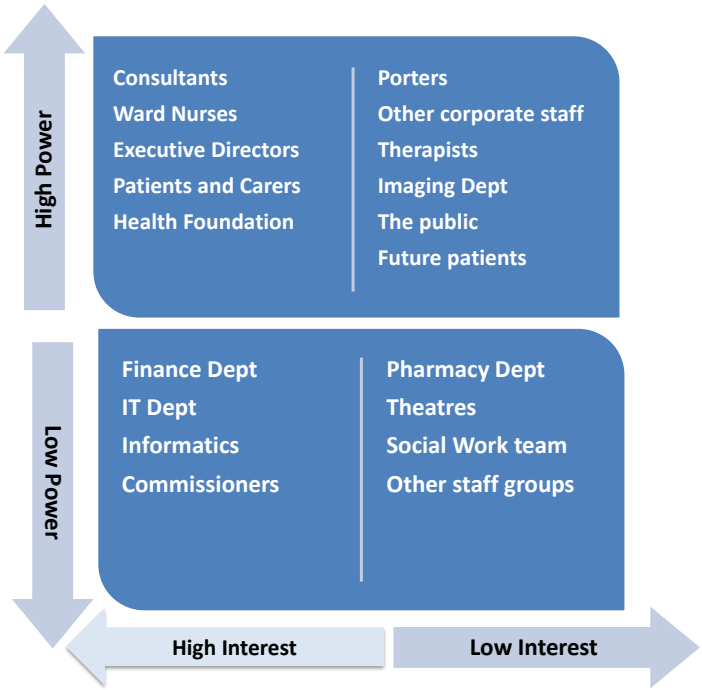
Staff are able to select a ward within the MyDay@QEHB module and then view and print a schedule for each patient. Schedules are given to patients each morning as part of the usual ward routine. On most wards this involves the healthcare assistant or ward

housekeeper handing out the schedule during the morning drinks round. Patients are able to opt in or out of receiving a schedule each day.

6. Who was involved in the project and how were those relationships managed?

We carried out a stakeholder analysis during pre-implementation. Using the "power/interest grid" technique (Bourne and Watkin, 2003) we were able to visualise and map stakeholder influence and expectations and use this to develop our relationship management, engagement and communication plans.





Over the life of the project both Therapists and Imaging staff moved from High Power, Low Interest to High Power, High Interest. This was in response to the significant process changes that were embedded in order to offer booked appointments to inpatients. We encountered challenges associated with resistance to change and change-weariness;

subjects which are explored further in the section on learning. However, both of these staff groups also produced strong champions for MyDay@QEHB; a factor which played an important and pivotal part in the spread and embed phase of the project.

We used Experience Based Co-Design (EBCD) technique to engage with the high power/interest stakeholders; patients and ward staff. EBCD involves patients in the design of a product instead of completing a design and then asking for views. We invited 150 recent inpatients and carers to participate. 22 patients and carers responded and we held our first event in March 2013. We created 3 activity stations which focussed discussion on experience during an inpatient stay; a) pre-admission/day of admission, b) ward routine and c) day of discharge/post discharge.

This co-design technique was of significant importance. We learned a number of critical design principles that we were unlikely to have otherwise known; for example the importance for patients of knowing when they had "free time", allowing them to leave the ward without fear of missing something important. Involving patients and carers created a powerful influencing ability for the team. This helped us manage stakeholder relationships and in particular helped us counter resistance to change, persuading some staff of the benefits of an inpatient schedule balanced against concern about additional workload burden.

The involvement of IT Developer colleagues in our EBCD events was also very positive and is an approach we have repeated in two subsequent projects at the Trust.

We recorded patient and staff stories which have been received very positively and there was a request to use them as part of clinical teaching and feedback to staff at UHB. Three of these stories have been included in sections of this report. The success of this methodology in capturing patient experiences is 'spreading' through the organisation. For example the Trust commissioned the creation of an Institute for Translational Medicine.

Experience based co-design has been used effectively in this project to design a patient resource room for patients with rare diseases. A summary of the output from the first EBCD event are included within the Appendix to this report.

Another engagement method we used was to set up a stall outside the staff restaurant. We did this on several occasions during April and May 2013 in order to engage with as wide a staff group as possible. Staff heard about our project, what patients had told us during EBCD and they had the opportunity to leave comments and suggestions. These included:

"I'm concerned about how we will manage patient expectations."

"What an excellent way of providing information for relatives."

"I can see how this will help the staff handover process."

A photograph of our stand outside the staff Restaurant in April 2013

Impact

7. What has your project delivered - what difference has it made and in what ways?

Transparency and accessibility of information

MyDay@QEHB has made the invisible visible. MyDay@QEHB provides inpatients with access not just to the ward routine but also timing of planned clinical events. As evidenced by Richard's story, Jay's story and Polly's story (next section), we have seen that MyDay@QEHB is reducing patient anxiety and allowing staff to better manage resources. Evidence from staff and patient questionnaires demonstrates that in 2015 72% of patients said they had a good understanding of the timing of ward events and 86% of patients recalled being given information about the ward routine on the day of admission. In 2012 71% of patients said they had a good understanding of the ward routine and only 54% of patients were told about the ward routine on the day of admission. A carer told us they found MyDay@QEHB helpful because it provided her with information about the timing of consultant ward rounds; enabling her to co-ordinate her visit at the same time as a discussion with the consultant.

Sustained service redesign in Therapies, Imaging and Portering

These services did not previously offer timed appointments to inpatients and required a significant amount of redesign during early implementation. More detail is provided in the next section. Service changes are now embedded and staff report improved communication between imaging, therapies, porters and wards. During an interview a member of imaging staff told us that scheduling had empowered his team and allowed them to better measure progress with their workload each day. Staff have also learned new skills, particularly in the use of technology and data analysis. Each porter has a smart phone device which enables them to accept requests and provide an outcome for each. This provides valuable information about productivity and is essential for essential operational management activities such as matching capacity with demand.

Improved efficiency and productivity

Baseline data demonstrated the majority of ward staff spend 10-20 minutes investigating, co-ordinating or re-arranging appointments when a clash of resources or other problems are brought to their attention. This can happen several times a day. Evidence from staff interviews and questionnaires demonstrates that this rework has reduced to 5 minutes per issue on the wards with MyDay@QEHB. This is because the availability of the schedule negates the need for investigation and potential clashes are often addressed in advance. Productivity has improved in imaging which is demonstrated already by a 6% increase in the number of tests carried out within 24 hours of being requested; this is despite the overall number of tests requested being higher in 2015 than in 2013. In 2013 an audit of porter tasks over a ten day period identified that 34% of patient transfer requests were delayed or cancelled for a reason that could potentially have been avoided if advance notice of the request had been shared with the ward or patient. Delay reasons included patients having lunch, engaged in other clinical activities, ward escort not available or additional resources not being available (wheelchair, oxygen etc). Just before we rolled out MyDay@QEHB in January 2015 we reviewed porter request data that was now being automatically produced from the new task allocation system. We discovered that across all wards 10% of patient transfer requests were delayed. After initial roll-out in May 2015 we reviewed delayed porter requests on wards using MyDay@QEHB and compared it with those wards not using the

schedule. We found the rate of delays was 9.2% in both cases. However, by October 2015 delays on MyDay@QEHB wards had reduced to 6.9% compared with 9% on other wards.

Improved patient experience

Patients reported short notice appointments or not understanding why a procedure had been arranged caused anxiety. Nurses seemed too busy to disturb. Instead, other more accessible staff were approached, eg Healthcare Assistants. Learning this was critical to the way we rolled out MyDay@QEHB. Healthcare Assistants or Ward Housekeepers hand the MyDay@QEHB schedule to patients during the morning drinks round. This is working well and involves both a face-to-face conversation and the provision of a printed schedule. Patients can opt out if they wish.

Wider adoption of EBCD technique

The use of EBCD technique was fundamental to the project. It provided a deep understanding about inpatient experience. Understanding emotional touchpoints allowed us to design a solution which reinforced positive touchpoints – eg, a strong preference for face to face communication - and "design out" negative experiences – eg, ensuring if we plan an intervention at lunch-time alternative meal arrangements are made. EBCD has been adopted as a technique within the organisation and has been used in several other projects, for example we used EBCD technique with a group of rare disease patients and their carers to design a patient resource room in the new Institute of Translational Medicine.

8. What outcomes have you seen, including any wider evidence of impact?

Service Redesign – Imaging Department

The imaging department did not offer an appointment based system for inpatients before MyDay@QEHB. Inpatient imaging requests were dealt with in an ad-hoc way with request forms prepared by Imaging staff and left in a tray for porters. Requests were not managed chronologically and often the day's work was not completed, leaving an overspill for the evening team or the next day. A schedule was created within the Imaging IT system, allowing appointments to be presented in the MyDay@QEHB schedule. The imaging department changed the way they allocated resources in order to deliver timed appointments. Imaging staff were concerned about this in the pre-implementation phase. Concerns were mainly about how they would cover short notice staff absences and whether porters would be able to respond to timed appointments. The evaluation found that on average 56 more tests were carried out each day in 2015 compared with in 2012. There was a slight reduction (1.1%) in the proportion of tests carried out in core hours (8am to 6pm) however the average number of tests carried out in core hours increased by an average of 13 per day; something the imaging department staff thought was attributable to the focus that scheduling offered. In addition there was a 6% increase in the number of tests carried out within 24 hours of being requested; an important operational standard to the service. The service redesign in imaging has demonstrated that imaging productivity has increased and can now be measured more effectively, staff are more focussed on delivering interventions in a timely way and less time is being spent organising patient transfers.

Polly's Story

Polly is the manager of the Inpatient Imaging Department.

My involvement with the project started in April 2011 when we began process mapping how inpatient imaging requests were organised and how patients were collected from the wards. In those early days the focus was very much on introducing booked appointments and linking those to the new porter task allocation system. We started small by booking appointments for one ward. Because MyDay@QEHB was not yet available in those early days we communicated booked appointments with the ward by telephone. There were teething problems; sometimes the ward did not answer the phone but once we knew the best times to call this got easier.

We had to train clinical staff in how to book appointments and I developed a standard operating procedure for this. It took several weeks for staff to get used to the booking system and it is important that staff are available to start each session on time.

We weren't really aware of the significance of this work to the MyDay project until the Autumn of 2013. At that point I started to see how all the strands of work were coming together to improve communication between the imaging department, portering, the ward and the patient.

If I was a patient I would want to know what is happening to me. That is the key to the project really. Patients know they can go for a coffee and not miss a test which might delay their treatment or lengthen their stay in hospital.

Service Redesign – Therapies

Similarly, we worked with therapists to develop a system of timed appointments for inpatient interventions so that these could be presented in the MyDay@QEHB schedule. However, the replacement of the therapy clinical information system in 2014 was an unexpected challenge for the project and had not been accounted for in the planning phase. The service moved to another clinical information system which did not support the scheduling of appointments and so an alternative approach was required. MyDay@QEHB was already developed when this change of direction occurred and whilst MyDay@QEHB included information for patients about when they had been referred to a therapy service, it was not possible to publish any appointment times for therapies.

It was agreed in 2015 that the best course of action would be to work with therapies to redesign functionality within MyDay@QEHB to enable therapy staff to schedule an inpatient appointment within MyDay@QEHB itself. This work was completed in the summer of 2015 and went on to be tested in December 2015. The impact on therapies productivity will not be known until Spring 2016.

Service Redesign – Porters

Porter task allocation was also redesigned to support the delivery of MyDay@QEHB. Previously porters worked in an illogical, ad-hoc way, often retracing their steps unnecessarily throughout the day. An IT system was developed in-house, parallel to the MyDay@QEHB project, which allocates the next porter task based on the location of the

previous task, priority and appointment time of the clinical intervention. As a result the porters were ready and able to respond to the schedule when it was implemented.

Ward staff and patients have benefited because timed events are published. Potential resource clashes are visible and waste can be avoided by taking advance action, rather than dealing with clashes as they occur. As described in the previous section, wasted porter tasks have reduced since 2013.

Timeliness of Hospital Discharge

We looked at the impact that MyDay@QEHB had on the timeliness of hospital discharge and found some evidence of a slight increase in the proportion of patients discharged before mid-day; a shift from 25% in 2014 to 27% in 2015. We also saw a shift in peak discharge time on wards using MyDay@QEHB with the peak in discharges moving from the 2pm-4pm time band in 2014 to the 1pm-3pm time band in 2015.

We identified many factors which may influence discharge times and not all can be controlled for in a complex environment like the busy wards where MyDay@QEHB was launched.

The collection method for discharge data is variable with the exact time of discharge difficult to capture and dependent on whether there are staff available and if so the role of the staff member. Any changes to practice or staff members could produce a change in a limited data set. In addition a number of concurrent service improvements were implemented at the Trust, making it difficult to tease apart their impact on discharge performance from the impact of MyDay@QEHB. Example co-incidental developments include:

- A new 24/7 nurse-led site management team introduced from January 2015. This is supported by an electronic capacity management system which allows virtual management of each ward bed and shows patient status at a glance. Some wards have also introduced Board Rounds in addition to ward rounds to progress patient discharge.
- MyHealth is a patient portal which allows patients access to their hospital record information, helping to manage their health condition from inside and outside of hospital.
- MyStay is a Trust developed patient facing ward dashboard.

Impact on inpatient attendance at outpatient appointments

We have also seen a reduction in the DNA rate for inpatients attending an outpatient appointment during their inpatient stay. We analysed outpatient appointments that were attended or not attended when they occurred during an inpatient stay between 2008 and 2014. The DNA rate increased year on year from 12% in 200/89 to 17% in 2014. During the pre-implementation phase we discovered that DNA avoidance was highly dependent on a relative or the inpatient themselves informing ward staff that they had an outpatient appointment. MyDay@QEHB alerts ward staff of an impending outpatient appointment, if necessary allowing it to be rearranged with enough notice for the slot to be reused. This also avoids the unfortunate situation of a patient receiving an outpatient DNA letter when they are an inpatient in the hospital. During the first half of 2015 the DNA rate for inpatients attending an outpatient appointment fell to 12%. The missed opportunity income for each

Outpatient DNA is approximately £120. A reduction in missed opportunity cost of £66,000 was seen in the first 6 months of MyDay@QEHB implementation.

Jay's Story

Jay is the Ward Sister on one of our surgical wards.

It's good that we are really listening to patients and taking positive steps to improve communication. Patients frequently ask staff members when procedures are likely to occur or when a therapist is going to visit. A lot of patients find it helpful to have more information and MyDay@QEHB is also a real benefit to their relatives or carers. This project helps us to work on areas which patients have said they would like to see improved.

Being able to provide appointment times to patients has been very successful; it can be difficult to tell patients that you are unsure of when they might be having their procedure. The schedule gives patients confidence and reduces anxiety.

There are other benefits that we are beginning to see, when bed managers want to identify potential discharges we can let them know tasks that are outstanding for patients. They are then able to prioritise activities that help with the discharge process.

Patients can see when they are going to be discharged and they start to prepare themselves to leave. We have found that nursing staff can focus on the nursing duties planned for the day.

One of the biggest challenges during the project was ensuring all staff on the ward had chance to meet and discuss progress or concerns. The ward is busy and sometimes finding time to meet can be difficult. Some of the problems staff expressed at the start turned out to be minor; for example managing patient expectations and increased workload, but generally staff are happy with trying new ways of working and adapting to change. We have had really good support and backing from the Matron and senior managers.

My advice for the wider roll out of MyDay@QEHB is to outline the key wins for staff on the ward. We have found patients to be pleased with knowing what is happening and we have become more organised as a result.

9. How did you measure and evaluate the impact and outcomes of your project?

Our quantitative data was analysed and reported by the Trust's reporting services team who work within the Health Informatics department and were separate from the project team. Observational studies, questionnaires and interviews were co-designed with our evaluation partner, University of Birmingham. A Research Fellow from the University worked alongside the project team from early 2014. The project team carried out observations, questionnaires

and interviews throughout the project and results were analysed and reported independently by the Research Fellow.

Qualitative Data:

Phase I: Baseline information – commenced July 2013 and involved questionnaires seeking patient and staff views about communicating ward routine and clinical events. We subsequently modified our approach; initially we surveyed inpatients, however, this process did not elicit many responses. We concluded that patients were too ill, or they felt uncomfortable answering questions whilst an inpatient. We changed our approach to asking patients whist they were in the Discharge Lounge or at their first follow-up outpatient appointment which proved more successful.

Phase II: Commencing summer 2015 we conducted semi-structured interviews with patients and staff to gather post-implementation data about communicating the ward routine and clinical events.

Phase III: We observed nursing staff on wards and also spent time with porters and therapists in August and September 2015.

Phase IV**:** A further round of semi-structured interviews commenced in Autumn 2015 informed by the findings of earlier observations and interviews, supplemented by questionnaires seeking changing attitudes and experiences post-implementation.

We used the Gale et al (2013) analysis framework, an approach to analyse qualitative data in multi-disciplinary health research. We analysed the questionnaires using descriptive statistics.

Quantitative Data:

We collected baseline and prospective data on the following indicators:

- Percentage of discharges that occur before mid-day and 3pm.
- Porter tasks delayed for scheduling or resource reasons.
- % missed outpatient appointments because the patient was an inpatient.
- Productivity change in imaging department over time.
- Productivity change in portering department over time

10. What has your project added to the discussion or evidence base for corporate and clinical teams working together in improvement?

Both clinical support services and corporate services have played a significant role and have lived up to the Shared Purpose aims of creating examples of best practice and working together to improve patient care. The creation of a patient schedule was the central theme that pulled services together; each of them contributing and also benefiting in some way.

There is now a greater appreciation between services about the interdependencies in the way they work. For example we brought porters and imaging staff together to redesign the inpatient scheduling and escort process. Sharing experiences from the perspectives of both teams provided an appreciation of how each could co-operate to manage their use of resources; for example patients arriving on time is important to imaging productivity and efficiency and knowing in advance the hour by hour demand for portering helps with the planning of rotas.

We found that one of the roles of corporate services is to design platforms across which clinicians and patients interact. The direct involvement of IT Developer colleagues in our EBCD events was also very effective. Hearing patients describe their experiences first hand improved the IT Developers' level of understanding about what we were trying to achieve and it sped up the process of asking questions and proposing solutions. This is an approach we have repeated in two subsequent projects at the Trust.

Learning and challenges

11. What have you learned throughout your project?

MyDay@QEHB has been delivered over an unusually long timescale compared with other Trust projects. A 6 month set up phase provided us with sufficient time to recruit a project team and analyse our stakeholders. A team development day allowed us to explore Belbin and MBTI indicators, supported by Tavistock Consultancy. We gained an understanding of team dynamics, roles and responsibilities and this enabled us to allocate tasks and responsibilities to the person most likely to achieve success. On the less positive side, the long timescale has seen experienced team members leave and new staff join and whilst this does bring fresh objectivity to the project it can also interfere with continuity and knowledge transfer.

During implementation we learned the importance of understanding local context in innovation. Each ward has its own ways of working (within a standard framework) which influences how MyDay@QEHB is deployed. By understanding local context we were able to take account of differences in working practice and receptiveness to change. In our work with the imaging department we liaised with each modality separately, keeping an overview of the wider picture within the project team. Likewise, redesign in each therapy service was managed independently of others.

One of the biggest surprises has been the change in some key staff attitudes towards the project. There was considerable resistance by some staff in starting to schedule procedures and we spent a lot of time as a team discussing the potential impact of this at our very first event in 2011; we have done what we thought was impossible!!. We established clinical advocates for the project who helped us work with colleagues who were sceptical about how they were going to schedule bookings. This taught us that it is worth being persistent and repetitive in our messages but applied at a pace that can be managed by those who are trying to process and understand how to change their ways of working.

Patient and staff feedback has been a powerful tool for dispelling myths and alleviating fears in response to challenges presented by others. A common challenge from staff has been around setting patient expectations. There was a fear that MyDay@QEHB might increase complaints and challenges from patients when appointments have been cancelled or missed. Patients helped us to alleviate such fears by suggesting a 2-hour time window is adequate, rather than a specific timed appointment, and as long as they know why something has been cancelled, they don't mind.

We have also learned that the extent to which staff communicate the ward routine to patients is dependent on patient interest and the member of staff's perception of a patient's ability to understand. Through evaluation we identified barriers to communication which included confused patients, or those lacking confidence to ask about their care, and a lack of consistent communication between staff. During interview staff reported that the introduction of MyDay@QEHB had provided benefits including increased patient reassurance and satisfaction with care, better communication between staff groups and a reduction in the rework associated with investigating and / or rearranging appointments.

12. What were the unintended consequences and side effects of your project?

A positive unintended consequence was the utilisation of social media to engage with the general public regarding their preference for symbols used within MyDay@QEHB. Whilst social media was not one of our planned communication routes, we learned it is an effective tool for accessing a wide population. We have adopted this communication route in other projects.

Another positive unintended consequence was how the concept of actively sharing the ward routine with patients has developed over time. During early implementation we worked with wards to collate ward routines to be published later in MyDay@QEHB. This information was too valuable to wait for the IT development to be completed. A number of wards agreed to publish their ward routine as a poster several months before MyDay@QEHB went live (See Appendix 1C). We initially envisaged removing the posters once MyDay@QEHB was launched but they proved popular with patients and staff and have remained in place. MyDay@QEHB posters are now in place on every ward and each is a bespoke reflection of the ward's routine.

A negative unintended consequence was the perception from some staff that the passive identification of conflicting appointments in MyDay@QEHB makes any lack of co-ordination visible to the patient and relies on staff or patients themselves doing something about it. Some ward staff expressed a view during interview that this could lead patients to lose faith in the reliability of the schedule. Two patients who were interviewed in 2015 expressed their frustration at being given conflicting information about their schedule.

Another negative unintended consequence was the frequency of occasions when patients would leave their MyDay@QEHB schedules out at the bedside, prompting concerns from staff about confidentiality and untidiness. Confidential waste bins were provided on the wards so that schedules could be disposed of safely but staff reported having to remind patients to put schedules away or having to dispose of schedules left behind when a patient is discharged. These issues will be largely resolved when the electronic schedule is introduced in 2016.

Finally, our project assistants were appointed using Annex U of the Agenda For Change contract, meaning they were supported to undertake a Master's Degree. Whilst we anticipated this would be a benefit, the impact exceeded expectations by providing invaluable theoretical insight to project approach, issues, barriers to change, leadership and other elements key to a projects' success. Both assistants went on to secure Project Management roles, benefiting the Trust and another local NHS provider.

13. In what ways would your intervention be useful or replicable for people working in another context?

We believe that much of what MyDay@QEHB has achieved is replicable in other NHS organisations. We know from the enquiries we have received that other organisations empathise and recognise the aspiration to empower patients by improving therapeutic alliance.

The process of mining clinical event information from various clinical systems was relatively straightforward and most Trusts will have the informatics capability to do this. The more challenging issue for us was developing the scheduling systems in key clinical services in order to provide a comprehensive inpatient schedule. The co-design approach we followed is replicable and we recommend EBCD wholeheartedly.

Having a consistent and compelling story that illustrates what you are trying to achieve is essential and our advice to other organisations would be to give this sufficient thought. As a project team we all had a good understanding of the aims of our project and could articulate the MyDay@QEHB concept well. However, it took a while for us to realise that telling the MyDay@QEHB story from the perspective of the audience achieved the best results. We had a number of patient stories from our EBCD work and would use key elements of those to illustrate the points we were making. Telling our audience Richard and Hilary's story illustrated that not knowing when Richard's CT scan was going to happen, or even if it had been booked, caused them significant anxiety. This helped to allay staff concerns that sharing a schedule with an inpatient might lead to complaints if perhaps a scan was cancelled or there was a failure to deliver it on time, because we had evidence that rearranging a known appointment was preferable to a complete absence of any information at all.

Taking the time to understand local context when redesigning clinical support and corporate services is particularly important. Local context can be dynamic and changes occur over time. Our advice to others would be to continually re-asses local context. On reflection we spent more time working with the imaging department than with Therapy Services in the earlier phases of the project. This was because the imaging department were initially very sceptical about the benefit of scheduling inpatients and felt the risks were too great. Conversely Therapy Services were enthusiastic and motivated to improve communication with patients and publish appointment times. However, we later experienced problems when Therapy Services ceased using an IT system that allowed them to schedule inpatient appointments and migrated to one that did not. Closer engagement with Therapy Services could have helped us anticipate this change and address it earlier. We have now redesigned the MyDay@QEHB functionality to allow therapists to directly schedule appointments within the system itself but this set us back several weeks at a time we had planned to be expanding the use of MyDay@QEHB further within the Trust.

We have had enquiries from other Trusts locally and further afield in Wales and Northumberland about MyDay@QEHB and have been invited to visit other Trusts to share our approach and help facilitate the initiation of similar projects.

14. What are your reflections based on your project on how change happens, new models of care and evaluating complex change?

The project was enthusiastically supported at Executive level and Steering Group meetings were well-attended. We did, however, experience a slump in momentum mid-project. This was perhaps a negative unintended consequence of a long implementation phase. When we were busy redesigning support services, other stakeholders were less involved and for them there was a long wait from project launch to the MyDay@QEHB prototype. We addressed the slump by re-launching our Project Steering group in 2014 with new members and a focus on what had been achieved so far.

Our early findings illustrated the need to capture learning in an accessible way. For example, we learned how difficult it is to engage with busy, front-line staff who do not attend open focus group sessions. We developed innovative ways of engaging with staff but these lessons had already been learned in previous trust projects with a failure to capture and share this knowledge. We have developed a framework for capturing and sharing lessons learned to inform future service improvement projects.

We could not have delivered the MyDay@QEHB schedule without the service redesign undertaken with porters and the imaging department. We needed inpatient imaging to schedule patient appointments and we needed a reliable way of allocating tasks to porters to ensure we could transfer inpatients to the imaging departments in a timely way. Our theory of change; that in order to embed and sustain new practice, it has to provide a demonstrable benefit to both staff and patients over and above what went before, developed from this work.

The MyDay@QEHB concept was met with varying degrees of resistance and scepticism from staff. The reasons were mainly due to concern about increased workload burden. We discussed the why, how and what associated with this resistance consistently throughout the life of the project and have been able utilise academic theories to understand its origin, such as Huy, Pettigrew and Weiner.

At the start of the project we assumed services would be receptive to change because they had recently completed a successful move to the new hospital and were accustomed to change. However, we found that teams still needed time to embed and concentrate on delivering their service within a new environment. This ‘change fatigue’ meant they were exhausted and needed time to re-energise before more change.

We have found that evaluating complex change can be difficult and time-consuming. Understanding the process is important but we need to evaluate outcomes as well. We had to go back and double-check some of our results on numerous occasions. For example we were surprised that so many patients could recall being given information on the ward routine on the day of admission but very few could recall the detail of the ward routine afterwards and results were consistently similar for this pre and post-implementation.

Evaluation of complex change is difficult because of the number of processes, people and behaviours that are required by people delivering and receiving our intervention. The number and variability of outcomes was increased by the degree of flexibility we permitted at ward level with regard to how MyDay@QEHB was used. We attempted to identify the “active ingredients” in MyDay@QEHB and to understand how they were exerting an effect. We understood that the first active ingredient was sharing a schedule with patients and staff – making the invisible visible. However, the real benefit comes from somebody taking this information and acting on it; avoiding a resource clash, investigating a question or concern etc. It is possible to share the schedule but do nothing about a conflicting appointment and this probably accounts for the nearly 7% of delayed porter transfers that are still occurring.

Another factor was the multiplicity of improvement projects that were happening in an organisation the size and complexity of our Trust during the lifetime of the MyDay@QEHB project. Any number of these projects could have contributed to or hindered the impact that

MyDay@QEHB was having. For example in the last 2 years the Trust has implemented a complex discharge hub, initiated a new capacity management system, created a Discharge Lounge, and developed many IT systems including a patient portal. These projects will certainly have impacted on length of stay, timeliness of discharge and improved the way the organisation communicates with patients. It has been difficult determining the extent to which MyDay@QEHB has been the main driver for the outcomes achieved.

Embed and spread

15. In what ways has your intervention been sustained?

Our planning for sustainability and spread started early on in the project because we needed the service redesign in clinical support and corporate services to be embedded before the MyDay@QEHB schedule went live. Changes in practice were embedded and sustained in these services because we were able to demonstrate a benefit to both staff and patients compared with the way they previously worked. The identification of staff champions in each area also helped to maintain momentum and spread of service redesign, for example expanding scheduling processes from one modality to another in imaging. Staff champions also acted as a point of reference for colleagues when the MyDay@QEHB project team were engaged in other areas.

MyDay@QEHB is operational on 12 of 20 inpatient wards. We excluded short stay wards and the daycase unit. We learned that where the schedule contains little or no appointment information, for example a patient on a complex discharge pathway who is not having any active interventions, the daily schedule becomes repetitive and is of reduced value. We therefore adjusted the functionality within MyDay@QEHB so that the schedule only prints when there is a new or amended appointment. Without this adjustment there was a risk that the sharing of the schedule with patients by ward staff would not be sustained.

We are now designing and implementing further phases of MyDay@QEHB; for example, sharing the schedule with patients electronically using bedside technology or a patient's own device. This will negate the need to print the schedule (unless preferred by the patient) and will also allow us to provide patients with an immediate alert if an appointment is added, delayed or amended. We will also be able to provide links to other resources, eg patient information and guidance. We are currently testing guest Wifi provision on our wards and expect to commence testing of electronic MyDay@QEHB after this in Spring 2016.

Another key to sustainability has been the integration of MyDay@QEHB with the development of other systems and processes in the hospital. We are currently nearing the end of implementing a new capacity management system which will help the organisation to track key tasks associated with the inpatient pathway, escalating and chasing progress where necessary. The capacity management system will help us to accurately predict discharge date and time and the integration with MyDay@QEHB will ensure patients and relatives are kept aware of this important information. The small but significant changes in culture at ward level associated with MyDay@QEHB; the increased use of IT systems by staff, linked to the benefits in workflow and organisation have been building blocks for further development and change.

We have also sustained the use of EBCD as a technique for co-design across the organisation. Examples of its use include the co-design of a patient resource room in the new Institute of Translational Medicine and the co-design of on-line virtual clinic consultations for patients as an alternative to face to face outpatient appointments.

16. What success have you had in spreading and publicising your work, and what are your future plans in this area?

We were invited to speak at the Royal College of Physicians' Conference in Harrogate in March 2015. Our talk was in a session called The Future Patient. We focussed on how patients and carers had driven the design of MyDay@QEHB through EBCD.

The Chairman of the Older People's Working Group (Bristol LINk) contacted us in January 2013 via the Health Foundation Shared Purpose website. We were delighted to share information about our project, in particular the EBCD work which had just commenced. Bristol LINk shared regular project updates with local CCGs and Trusts.

Articles about MyDay@QEHB were published in the Trust Newsletter, News@QEHB, at our launch in June 2012 with a further update in July 2013. An article about the roll-out plan for MyDay@QEHB was published our on-line newsletter, In the Loop, in February 2015.

Throughout the lifetime of the project we have attended the Trust Patient Experience Group and Patient and Carer Council to provide updates on progress, challenges and successes. These meetings are attended by patients, carers and staff and have provided helpful insights and offers of support.

We hosted a visit from a team at Newcastle University in February 2013. Their patient safety project was a logbook which encouraged patients to record their own medicine regimes in order to empower them to raise any concerns. We learned that engaging ward nurses had been a challenge, risking sustainability of the logbook. They adjusted their approach by embedding the logbook within another well-established ward routine. We have been grateful for this learning within our own project.

We used Twitter as a means of communicating with the public about the use of symbols in the MyDay@QEHB schedule. We tweeted example symbols which indicated an X-ray and asked for preferences. Responses were helpful and this method helped us reach a new audience.

We attended the final Shared Purpose event, hosted by the Health Foundation, in October 2015 and showcased our project alongside the other 8 Shared Purpose projects.

We plan to make a short video in 2016 demonstrating the impact of MyDay@QEHB from the perspective of patients, relatives, ward staff and support services. This will follow the implementation of electronic MyDay@QEHB.

Appendix 1: Supporting evidence

A) Slides presented to the project steering group in March 2013 following the first EBCD event

Diarising Project Steering Group

Initial Analysis from the
Experience-based Co-design event
held on 6th March 2013

Service Improvement Team

Delivering the best in care

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EBCD Event Preparation

Sampling criteria:

- Letter to 150 patients (50/50 split elective and non-elective)
- Limited to the following specialities - Gen Med, T&O, Plastics, liver, renal, max facs, cardiac surgery & urology.
- Inpatient stay between 01.01.2012 and 01.01.2013
- With a minimum length of stay of 7 days

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EBCD Event on 6th March

- Total of 22 participants attended the event (combination of patients / carers / relatives)
- Session ran from 1000hrs -1300hrs
- Event was supported by members of the patient experience team and service improvement team
- 3 facilitated activity stations which focussed discussion on the following components of the inpatient journey:
  - Pre-admission and day of admission
  - Ward routine
  - Day of discharge and post-discharge

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EBCD Event on 6th March

- There was a balanced mix of positive and negative experience of the inpatient journey.
- The event was filmed with the consent of participants and will be edited into a short film to help the project team engage other stakeholders.
- Lunch was provided for participants and travelling and parking expenses were reimbursed on the day.

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Results - Common keywords

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Themes

"What's happening, when it is happening and why it is happening?"

"I worried about falling through the cracks during shift handovers"

Theme	Summary of comments	Suggestion
Information relating to staff	Lack of knowledge regarding multitude of staff roles	A picture board of staff, their roles and the meaning of different uniforms
Information relating to staff	Lack of information about staff handovers	Diarise the timing of handovers and who is taking over in what role
Sharing of care plan information	Provide information for relatives to help them time and plan their visits	Diarise an overview of the day, with approximate timings for interventions and ward rounds
Information about medicines	Confusion about the different medicines being administered	List medications prescribed, what they are for and when they are due to be administered

"You learn the ward routine after a while"

"Finding someone to ask was a nightmare – the staff are so busy"

"I left the ward for an x-ray and missed lunch"

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"time wasn't given to communicate treatment plan with relatives"

Themes

"I attended mass everyday at 4pm"

Theme	Summary of Comments	Suggestion
Availability of other patient services	Lack of knowledge about what services are available	Diarise religious services, etc
Information about tests	Lack of information for patient and relatives about what tests are being done, why and when the result is due	Diarise tests undertaken and also when results are expected
Communicating effectively	Would like more opportunities to ask questions without "bothering" busy staff	Provide space in the diary for patients/relatives to note their questions as they occur
Information about post-discharge	Follow-up plans are not always clear	Diarise follow-up appointment and with whom

"I didn't challenge staff because I wasn't feeling up to it"

"I was in a single room and felt overlooked"

"The porter arrived and said I was due an x-ray"

Design and functionality considerations

- Change the name from "patient diary" to something more meaningful like "care schedule"
- Build in opportunities for patients to provide feedback or note down questions via the tool if they wish
- Allow patients to access the tool via the web, both before and after discharge (possibly via MyHealth)
- Allow the patient to determine what level of access relatives can have to the tool
- Approximate timing of interventions is sufficient
- Allow patients/relatives to book appointments with key staff to discuss care plan
- Allow patients to opt-out of using the tool if they want

Next Steps

- Evaluation feedback requested from the EBCD event participants
- Develop a newsletter as a means of continuously updating the patient group throughout the project
- Engage with staff stakeholders at planned events over the next few weeks
- Develop a tool prototype by May/June
- Share prototype and seek feedback from patient group and wider stakeholders at an event in June (tbc)
- Test prototype on first ward July/August

B) MyDay@QEHB Example Schedule

SQL 2012 Pas-Support G123456
W411 Bed - 33 25/03/2015
Patient Copy Printed @ 22/07/2014 12:14:13

Meals

Task	Start	End
Breakfast	07:30	08:30
Lunch	12:00	13:00
Dinner	17:00	18:00

Medication

Task	Start	End
Medicine	07:00	08:00
Nurse Handover	07:00	07:30
Doctors' Ward Round	08:00	13:00
Bloods	08:00	12:00
Medicine	12:00	13:00
Medicine	17:00	18:00
Nurse Handover	19:00	19:30
Medicine	21:00	22:00

Other

Task	Start	End
Lights On	07:00	00:00
Bed change and wash	08:30	11:00
Visiting	14:30	19:30
Lights Off	23:00	00:00

Referrals

Task	Start	End
OutPatient Appointment	12:25	14:25
OutPatient Appointment	11:40	13:40

Future Events

Future Event	When

Past Events

Future Event	When
Surgical Procedure	08:30 06/03/15
OutPatient Appointment	12:25 11/03/15
Surgical Procedure in Imaging	00:00 13/03/15
OutPatient Appointment	11:40 18/03/15

Notes

C) MyDay@QEHB Ward Posters – Young Persons Unit and ward 515