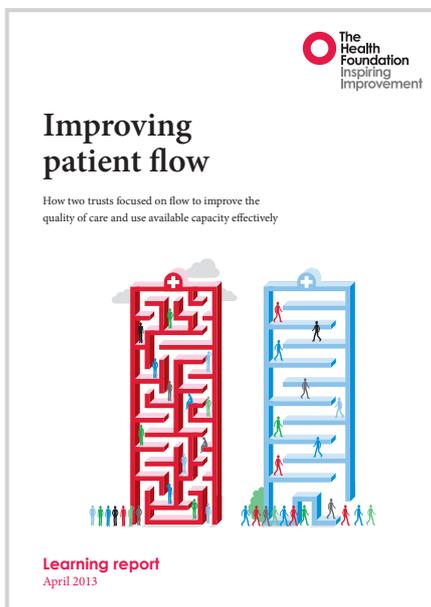


Improving the flow of older people

Sheffield Teaching Hospital NHS Trust's experience of
the Flow Cost Quality improvement programme

This case study accompanies the learning report *Improving patient flow*.
For more details, please see www.health.org.uk/flowcostquality



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This case study gives details of the work undertaken by Sheffield Teaching Hospitals NHS Trust as part of the Health Foundation's Flow Cost Quality programme. It accompanies the Health Foundation learning report, *Improving patient flow*, published in April 2013. For more details, and information about the work done by South Warwickshire NHS Foundation Trust, please visit www.health.org.uk/flowcostquality

Introduction

The aim of the Flow Cost Quality improvement programme was to explore the relationship between patient flow, costs and outcomes by examining patient flow through the emergency care pathway, and developing ways in which capacity can be better matched to demand. The programme ran in two NHS hospital trusts: South Warwickshire NHS Foundation Trust and Sheffield Teaching Hospitals NHS Foundation Trust. Dr Kate Silvester, a dedicated clinical systems improvement expert, supported the teams in both organisations.

The team at Sheffield decided to focus on the trust's geriatric medicine service, recognising it as a 'fractal' (part of the system that represents the whole) of the emergency care pathway. Their aim was that results from work with this key patient group will provide learning for the wider system.

The results have been very positive, with a 37% increase in patients who can be discharged on the day of their admission or the following day – with no increase in the re-admission rate, implying that patient outcomes are not adversely affected by the faster throughput. Bed occupancy for emergency care for the elderly also reduced, allowing two wards to be closed. Sheffield also reported a decrease of in-hospital mortality for geriatric medicine of around 15%. At a notional bed day cost of around £300 per day there could be an estimated cost saving/avoidance of around £3.2m per annum. This level of saving is largely theoretical and has yet to be realised.

Identifying the problems

Understanding the system

Analysis of hospital data showed that more than a third of beds were occupied by patients over 75 years and an increasing number by patients over 90 years old. Weekly audits of the geriatric medicine wards, using a tool developed by the nurses to measure 'waste' bed use, revealed that only 50% of these patients were receiving acute specialist medical, nursing or therapy care. The other half were waiting for discharge downstream into a range of services primarily including intermediate health and social care services outside the hospital.

A multidisciplinary team, representing all the roles involved in the care of patients in geriatric medicine, met regularly to gain deeper understanding of the problems and delays in the current system and to identify potential solutions to test. The team included GPs, consultant geriatricians, ward nurses, physiotherapists, occupational therapists, pharmacists, discharge liaison coordinators and discharge nurses.

High level process mapping showed the key stages in the care pathway of frail elderly patients, from when they arrive at hospital to being discharged (back home or to a residential or nursing home) or to dying in hospital. The key stages include the medical assessment, diagnosis and planning stages that apply to all patients. The initial clinical assessment results in the patient being discharged back to their home and GP, or to being admitted for specialist medical and nursing care. In both cases, the assessment or admission may be followed by a multidisciplinary nursing and therapy assessment for intermediate healthcare at home.

A closer look at data for frail older patients admitted to hospital showed that the majority were discharged within a week, and the mode (most frequently occurring) length of stay was 24 hours after admission. However, the data also showed that a few patients could spend months in hospital (see Figure SH1).

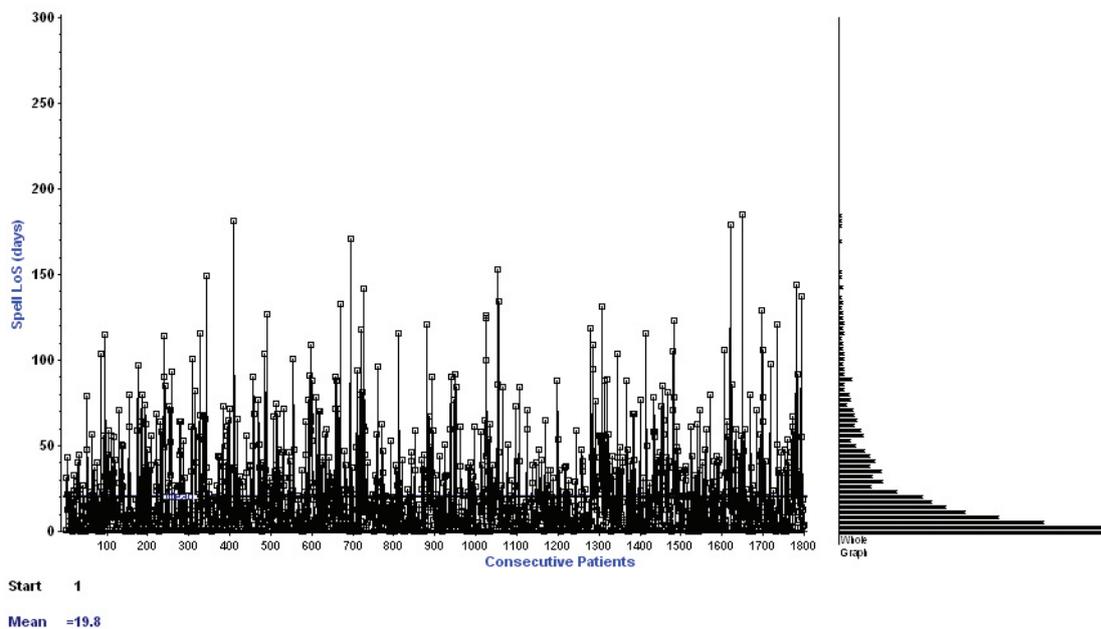
A consultant analysed the notes of 23 of the 100 patients with the longest lengths of stay. This review highlighted the difference between 'possible' length of stay (based on the first definitive note by a geriatrician that the patient was medically fit to be discharged) and 'actual' length of stay. The notes revealed multiple points when the patients could have been discharged. Opportunities were missed partly because the services involved in discharge were unable to respond quickly enough, as a consequence of a mismatch between capacity and varying demand.

As a consequence of delayed discharge, some frail patients deteriorated while others were transferred to other parts of the hospital. These transfers sometimes resulted in vital information being lost, resulting in further deterioration, re-work and delay. On average, patients spent four times longer in hospital than was initially estimated by consultant geriatricians involved in their care. It is estimated that these 23 patients received approximately £471,960 of hospital care that could potentially have been better spent on more appropriate care in their own homes, or on residential or nursing care.

There was clearly real potential to improve patient flow and the quality of care, and to reduce costs or make better use of precious resources.

‘If we can get the efficiency of older people’s healthcare better then I believe that so many of the other dimensions of quality – safety, timeliness, patient-centredness, equity and effectiveness – will drop out. There is enormous opportunity there.’ (Tom Downes, Clinical Lead for Quality Improvement)

Figure SH1: Control chart for 1,800 consecutive geriatric medicine patients discharged between October and December 2010 and its accompanying frequency distribution chart (right) showing the wide range of variation in their length of stay



Focusing on care for the frail elderly

Through their analysis of the whole emergency pathway for older people, the team were able to understand the key constraints in the emergency process. The main patterns of flow through the process were:

- 90% of the emergency patients who were referred to geriatric medicine by their GP or A&E staff first presented to the healthcare system between 8am and 6pm
- those who contacted their GP first were not seen and referred on to the hospital until after midday
- the first of these emergency patients arrived at the hospital in the early afternoon (those using private transport arrived more quickly than those arriving by ambulance)
- patients arriving at A&E directly did not get referred on to geriatric medicine, or moved onto one of the four medical assessment units (MAUs), for at least four hours.

As a consequence of these patterns, two-thirds of the frail older patients ‘arrived’ on the MAU after 6pm. At this time only junior medical staff were available to assess them. Patients waited until the following morning for a consultant ward round review, often seen first by an acute physician before being seen by a geriatric

medicine consultant. The traditional model of ‘post-take’ ward rounds resulted in the ‘batching’ of patients, with the geriatric medicine consultant waiting until their post-take ward round to review up to 20 patients at a time on the MAU.

The delays in getting specialist geriatric medicine assessment meant that many frail older people had to stay in hospital overnight unnecessarily. In addition, during the initial tests of change, a limited audit of ward rounds showed that 20% of these patients had their diagnosis or care fundamentally changed by a geriatric medicine specialist if they were seen at an early stage compared to 20 hours after admission.

Furthermore, patients referred by their GP for an outpatient assessment faced significant delays. For some, this could lead to deterioration in their clinical condition and an emergency admission.

The team recognised that the key problem in their emergency system for older people was the time taken from patients presenting to being assessed and given a care plan by a consultant geriatrician. From October 2011, improving the assessment process for frail older people became the key focus for the Sheffield team’s Oobeya (‘big room’) process. (The Oobeya process involves regular project team meetings within a dedicated room in which all the project information is displayed. It offers an environment for real-time decision making that engages all relevant stakeholders. See page 18 of *Improving patient flow* for more details.)

The team identified, tested and have now implemented a range of changes designed to improve patient flow, reduce waste and improve the quality of care. These included:

- matching specialist medical capacity to patient demand:
 - change consultant working patterns from ‘post-take’ to ‘on-take’
 - see patients in real time, on admission
 - identified the requirement to pool junior doctors
- developing a Frailty Unit:
 - establish an MAU focused on frail older people
 - initial steps to merge inpatient with some elements of outpatient care
 - put in place a multidisciplinary assessment team
- speeding up discharge:
 - switch to a model of ‘discharge to assess’.

Implementing the solutions

Matching specialist medical capacity to patient demand

Change consultant working patterns from ‘post-take’ to ‘on-take’

The timely availability of skilled specialist staff is a key factor in the delivery of high quality efficient care. As in South Warwickshire, the Sheffield improvement team recognised that they needed to change the timetable of consultant activities and increase senior medical staff availability to meet patient demand as it occurred. This would prevent the delays and potential safety issues inherent in ‘storing’ patients in the MAU overnight. It would also address the distortion in demand, passed on to departments and organisations downstream in the patient pathway, caused by the ‘batching’ of patients for the post-take consultant ward round.

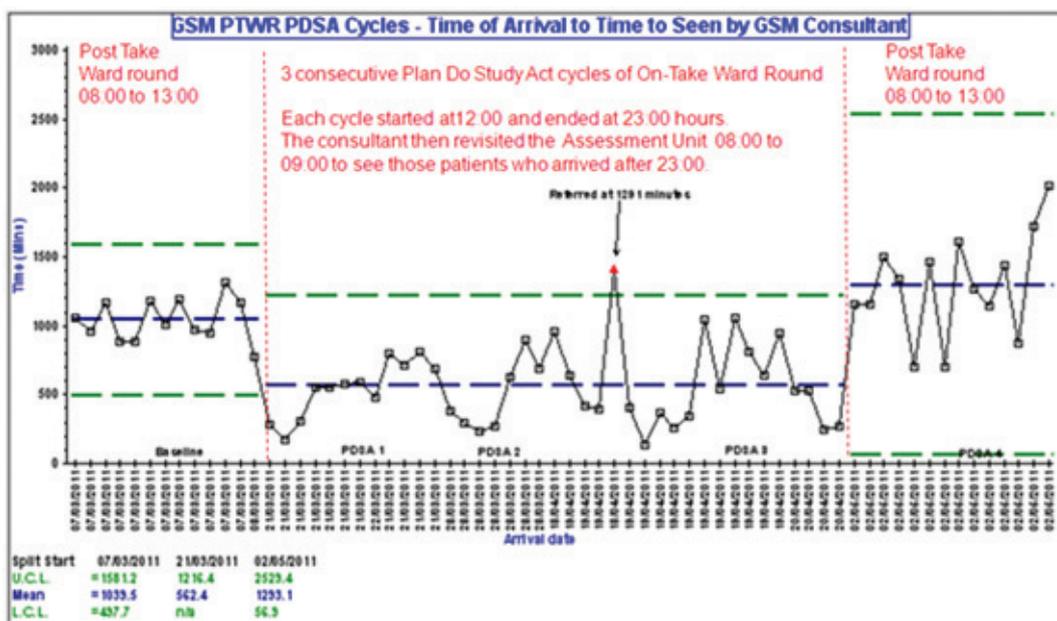
- The involvement of consultants in the various tests persuaded them that the current job plans were hindering the provision of care. This involvement was the main enabling factor in them agreeing that the job plans needed to be altered to extend the on-call service to 8pm and to increase weekend cover from 8am to 5pm. This was achieved through the job planning process, releasing time by using clinic capacity more efficiently and timetabling periods of time back in lieu. The change increased the number of older people who could be assessed on the day they presented at hospital and prevented the build-up of patients over the weekends.

- All 16 geriatric medicine consultants changed their on-call duty rotas on 1 April 2012. Although a significant change, this was a natural step from a series of tests (each with a single consultant) that had shown a range of benefits and built staff confidence.

'Different consultants learned different things. For example, one consultant with an educational interest began seeing patients alongside the junior doctor clerking them. He was able to give feedback immediately, supporting competency based learning in real time' (Tom Downes)

Figure SH2 shows the impact of different tests of change (PDSA cycles) on the time from arrival at hospital to the consultant's plan for treatment (written in the notes).

Figure SH2: The impact of different tests of change (PDSA cycles) on the time from arrival at hospital to the consultant's plan for treatment (written in the notes)



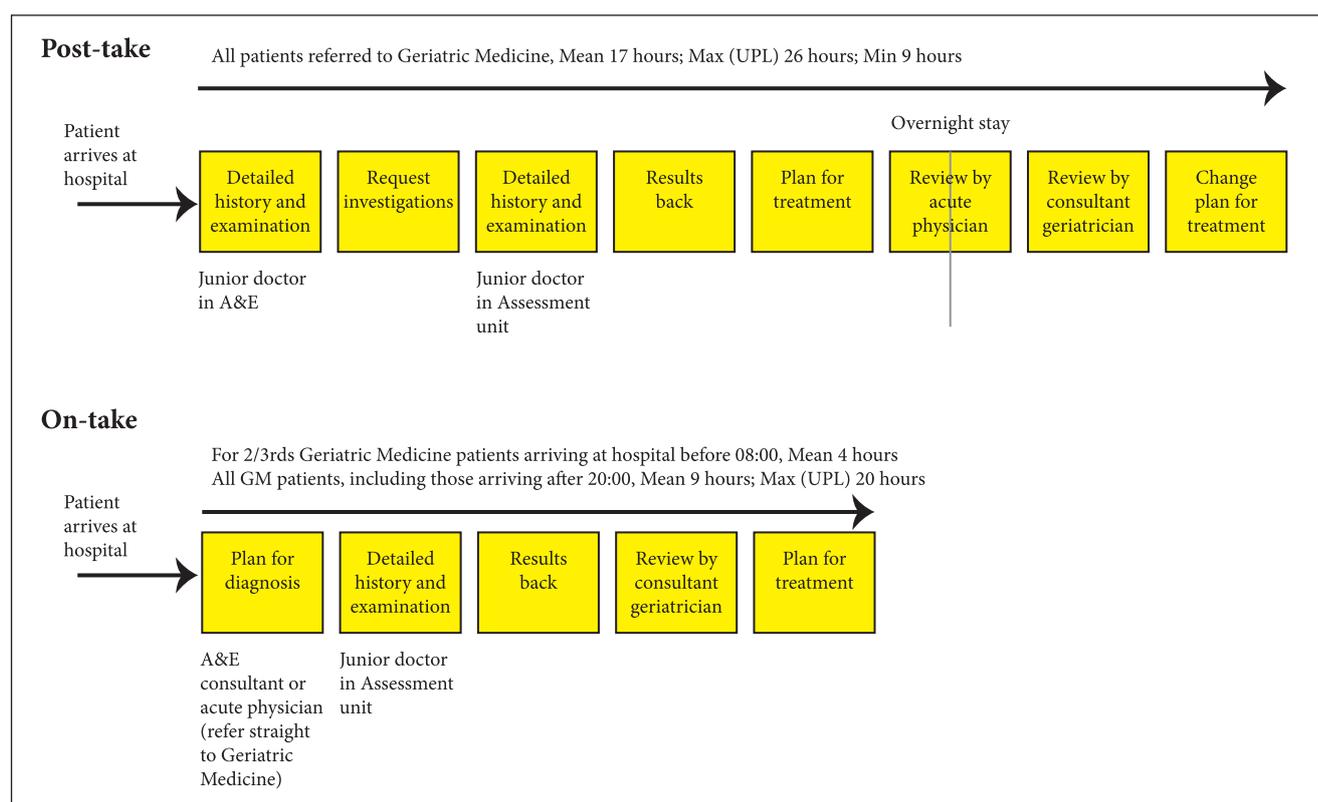
Despite the new rotas creating a few difficulties, such as some consultants finding it difficult to take back time elsewhere, the reactions of the geriatric medicine specialists have been positive. Many were unhappy with the service they had been providing and can see clear benefits in the new system, for example:

- seeing patients as they present helps pace work throughout the day and provide consistent quality of care
- earlier specialist assessment increases the chances of early supported discharge with the associated reduction in risk of healthcare-associated adverse events
- reduced inequality of service for people admitted at weekends
- improved job satisfaction and enjoyment from seeing a better service for patients.

See patients in real time, on admission

In the new system, consultants (geriatric medicine specialists) are available 'at the front door' to assess patients as soon as investigations have been done and enough clinical information is available. This is 10 to 20 hours sooner than in the previous system of post-take daily ward rounds. Faster turnaround for diagnostic tests and a clear plan of care by consultants has increased the number of patients who can be discharged on the day of admission.

Figure SH3: The change in process from the traditional ‘post-take’ system to the new ‘on-take’ system of assessment



Pool junior doctors

Reducing the time from admission to senior medical assessment may be facilitated not just through changing consultant rotas but also by changing working patterns for junior doctors.

The first delay encountered by most emergency patients is in waiting for an initial assessment by a junior doctor. However, in analysing demand, the improvement team found that there was, in fact, sufficient overall junior doctor capacity to review all presenting emergency patients within an hour of their arrival at hospital.

Pooling the capacity of junior doctors from A&E, the MAUs and the medical and surgical specialties could enable the trust to meet the peaks in emergency patient demand and eliminate ‘wasteful’ repeated assessments that were not adding value (see Figures SH2 and SH3).

Developing a Frailty Unit

Establish an MAU focused on frail older people

From their initial work on securing earlier specialist assessment of frail older patients, the team turned to reducing unnecessary overnight stays for people who were able to return home with support. One of the hospital’s three MAUs has now become a unit focusing on the medical admissions of frail older people. The Frailty Unit opened in May 2012. Its key benefit is the co-location of all the specialist, medical, nursing and therapist staff who deal with frail older people, thus improving communication and team working. Relatives of patients admitted both before and after the change have commented that the Frailty Unit is more calm and more patient focused than a normal MAU.

Merge inpatient and outpatient care

Analysis of the patient pathway had highlighted significant delays for patients referred by GPs for an outpatient appointment. As part of the process, patients often had to be referred elsewhere for investigations, such as scans or physiotherapy assessment, stretching the overall wait for weeks, sometimes months. Some were reaching crisis point before their medical outpatient appointment and the delays meant that GPs sometimes had no option but to send frail elderly patients as emergency cases to the hospital.

The improvement team set themselves a challenge: to reduce the outpatient process time from around three months to less than eight hours. They tried a small test with their next two referral letters, telephoning the patients to ask them to come in the next morning. For those two patients, all the issues identified by the GP were dealt with that day. They had all the necessary investigations, were reviewed by the geriatric medicine specialist and seen by other team members, such as therapists or a social worker, if needed.

'We were able to deliver all the value of that three-month process for those two patients in less than four hours. That morning was one of the proudest mornings of my 18 years being a doctor.'
(Tom Downes)

An unexpected finding from this test was that there was often no clinical difference in the severity of conditions for older patients who presented (or were referred by their GPs) as an emergency case or those who were referred to an outpatient clinic. There was also no difference in the process of care they required.

This led to a larger test of change: combining outpatients and emergency patients into a single system of care.

'We realised that the divide of outpatients and emergencies is artificial because most patients being referred by GPs require a secondary care consultation and in geriatric medicine that's usually sooner rather than later.' (Paul Harriman, Assistant Director, Service Improvement)

Adopting a common process for urgent and routine patients (merging inpatient and outpatient flows) aimed to achieve a manageable demand that is smoothed through the day, and to reduce both waiting and 'process' times for routine patients. Initial tests show that it has reduced the need for follow-up outpatient capacity and suggest that the outpatient service will ultimately become an integral part of the Frailty Unit.

Put in place a multidisciplinary assessment team

The trust had already put in place a dedicated 'Front Door Response Team' (FDRT). This multidisciplinary team of occupational therapists and physiotherapists, a social worker and general and mental health nurses works alongside the medical staff, providing input to clinical assessments and focusing on what needs doing to get patients back home as soon as clinically possible. However, the dispersed nature of the admission units often led to delays in accessing the service once a patient had been identified for discharge. A test was undertaken with a dedicated group working in the Frailty Unit. This showed that it made teamwork there much more cohesive and further benefiting patients.

'If we can pick patients up sooner, do the assessment in a more real time, at the right time, then we can actually work with the services outside in the community to get these patients home quicker.' (Elaine Atkin, Operational Manager, FDRT)

Speeding up discharge

Switch to a model of 'discharge to assess'

The team recognised that getting patients home more quickly required not just earlier assessment and care planning, but also work on the discharge process within and beyond the Frailty Unit. This required inter-agency working with both the local authority and primary care.

In an early meeting, the team worked with wider stakeholders to map out in detail exactly what happened along the patient pathway. Staff were then able to understand the reasons for delays and lengthy hospital stays.

‘What we’re brilliant at in Sheffield is assessing. The discharge process involved multiple assessments of patients – current and past abilities and forecasts of future abilities. In the Sheffield system, we always kept people in hospital. We sorted out medical care. Then the physios sorted what they needed to, then OT [Occupational therapy], then social services... It was a drawn-out process – a conveyor belt.’
 (Peter Lawson, Clinical Director, Geriatric Medicine)

Changes included segmenting patients. Some were straightforward discharges: once the patient could get up and walk, they were able to go home, helped by their carers. For others, there were concerns that they might not be able to manage at home once their medical treatment was over and they were clinically well.

In the past, the latter group would have been kept in hospital for assessment of intermediate and social care needs, before going home with the appropriate package of care or discharged and then brought back to hospital for assessment. In the new system, patients are discharged once they are medically fit and have an assessment – with the appropriate members of the social care and community intermediate care teams – in their own home. This enables them to access the right level of home care and support much more quickly.

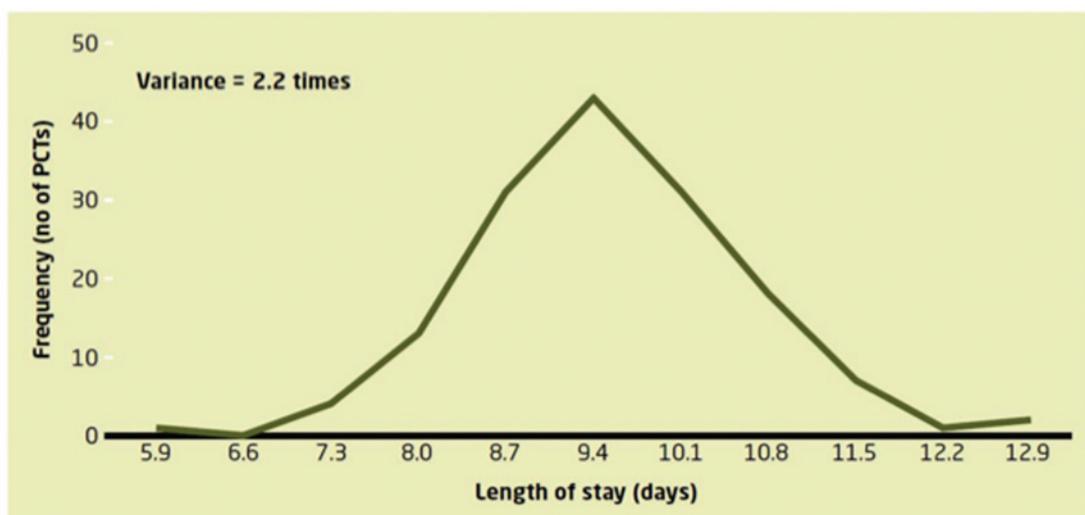
The change has truncated a discharge process of up to two weeks to care packages being put in place directly with the patient at home, enabling the Frailty Unit to reduce length of stay and therefore shortening the overall patient pathway. The ‘discharge to assess’ process is now being spread to other units within the hospital. While there have been some challenges with the capacity of post-discharge services to deal with the demand from this process, there is consensus that it provides a better model of care and work is ongoing to address this next bottleneck in the system.

Impact and learning

The suite of changes implemented in Sheffield’s geriatric medicine emergency pathway has resulted in measurable improvements. The biggest impact has been on the timeliness of assessment and treatment. The earlier in the day that a patient is assessed by the medical team, the more quickly they can get the care they need and be moved towards discharge.

A recent report from the King’s Fund (*Older people and emergency bed use: Exploring variation*, King’s Fund, August 2012) illustrated the wide national variation in average length of stay (LOS) for emergency patients over 65. Sheffield data for 2012 would have placed it at the high end, with an average LOS of 12.1 days.

Figure SH4: Average emergency length of stay for patients over 65, national distribution (King’s Fund, 2012)



While demand has stayed the same (Figure SH5), the changes have enabled the team to achieve a 37% increase in patients who can be discharged on their day of admission or the following day (Figure SH6).

Figure SH5: Number of daily emergency admissions to geriatric medicine

(provided by Sheffield Teaching Hospitals NHS Trust)

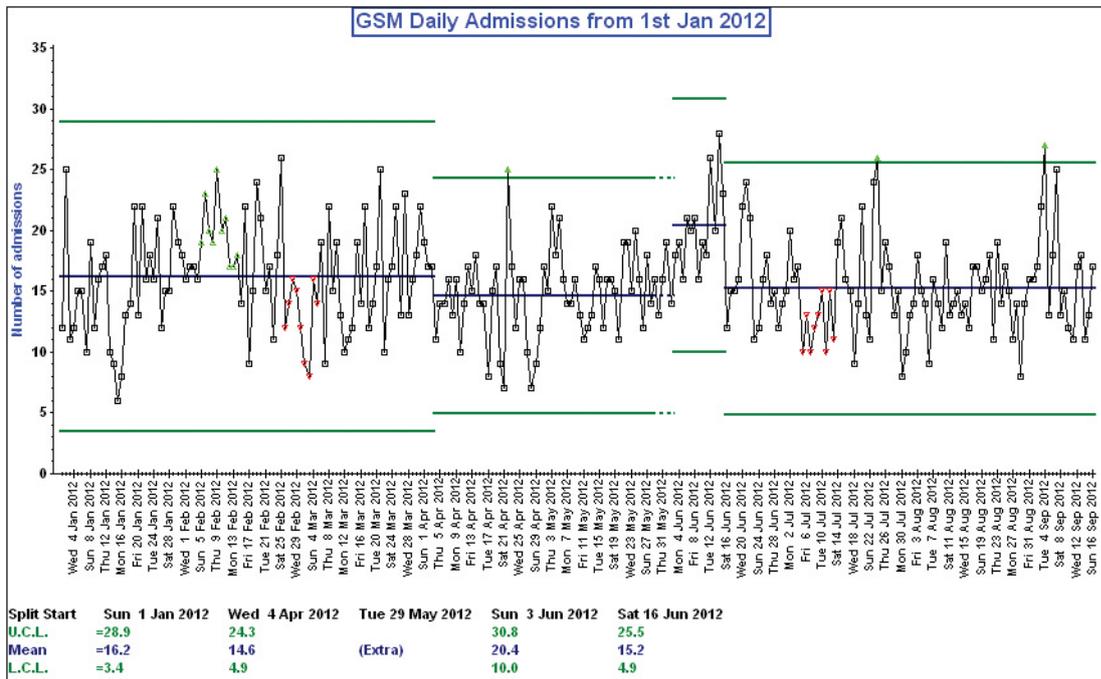
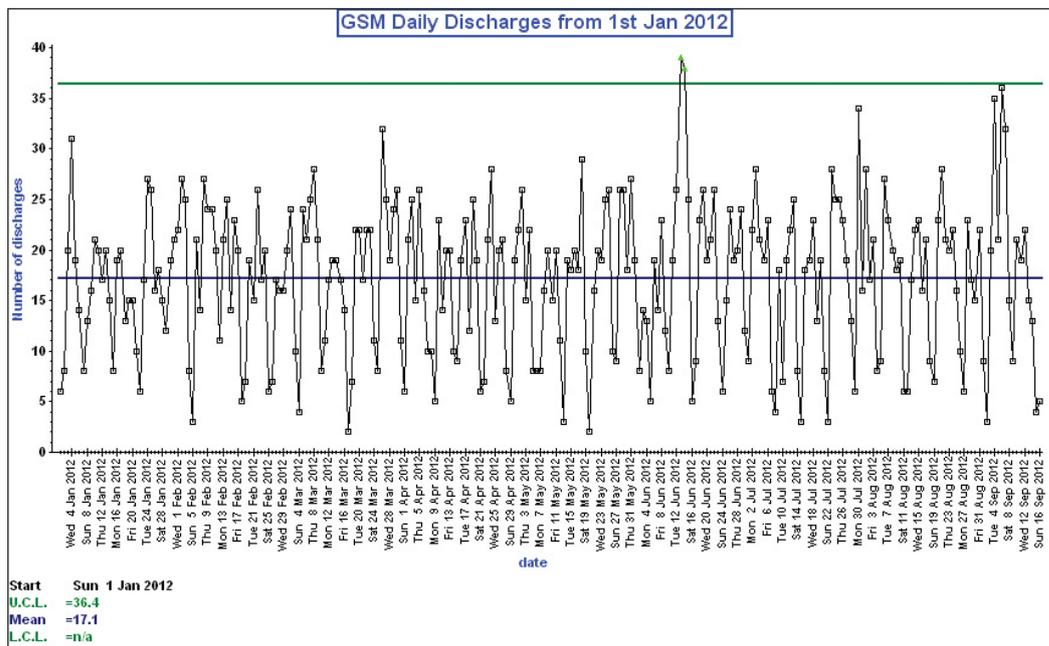


Figure SH6: Percentage of patients discharged from Frailty Unit on day 0 or 1

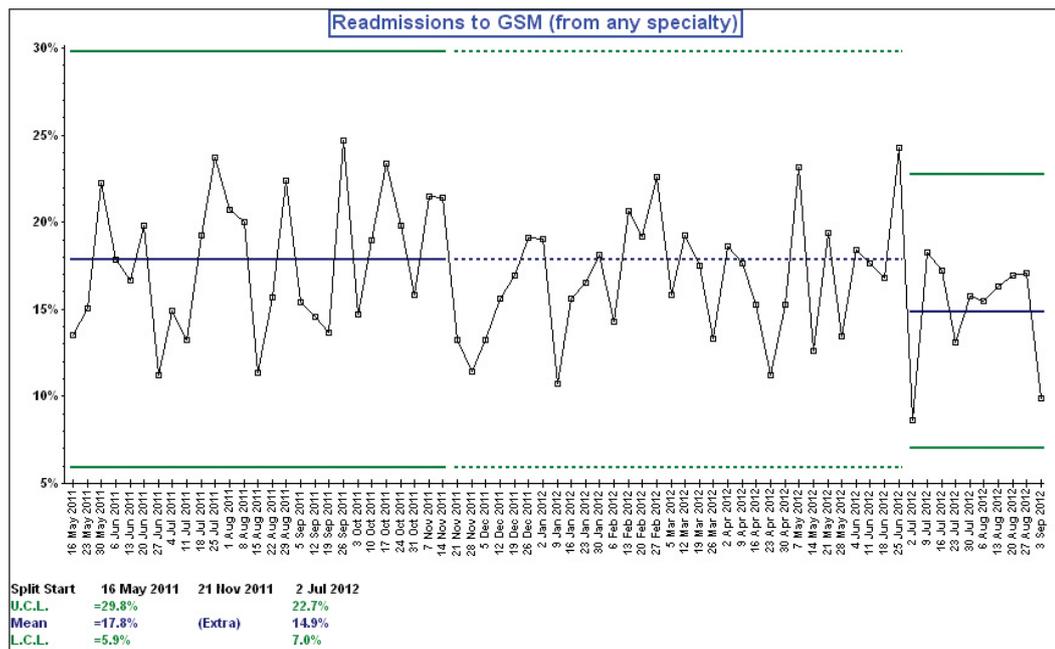
(provided by Sheffield Teaching Hospitals NHS Trust)



This equates to two additional patient discharges each day. Importantly, there has been no increase in the re-admission rate – an important balancing measure to check that patient outcomes are not adversely affected by speedier throughput (Figure SH7).

Figure SH7: Percentage of re-admissions

(provided by Sheffield Teaching Hospitals NHS Trust)

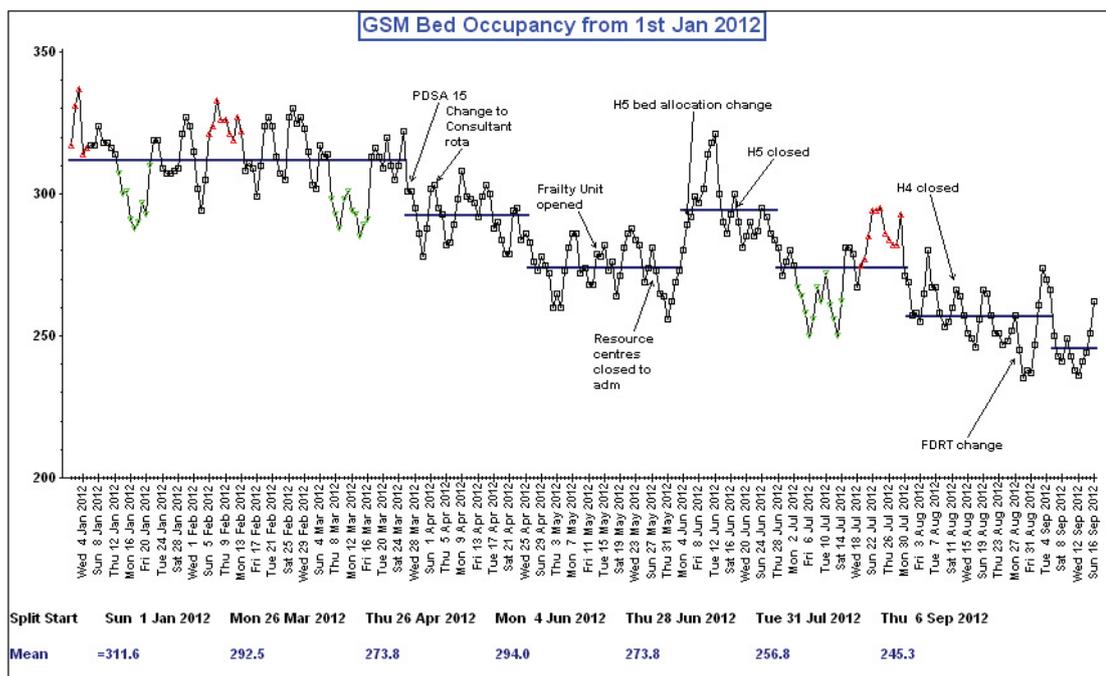


The changes have produced significant results in terms of bed occupancy (the product of the number of admissions, discharges and length of stay (Figure SH8)). This has reduced from a mean in January 2012 of 312 (max 337) to a mean in early September of 246 (lowest point 235). During this period the trust was able to close two wards, totalling 68 beds. Without the changes in geriatric medicine, these would have remained open. In addition, one geriatric medicine consultant retired and was not replaced. The cost associated with running a ward is typically quoted at around £1.5m and the full year effect of the financial cost saving/avoidance is therefore estimated to be in the region of £3.2m.

‘During the period from June to mid-September, geriatric medicine lived within its allocated bed complement for the first time that we can recall.’ (Paul Harriman)

Figure SH8: Geriatric medicine bed occupancy rate and associated tests of change

(provided by Sheffield Teaching Hospitals NHS Trust)

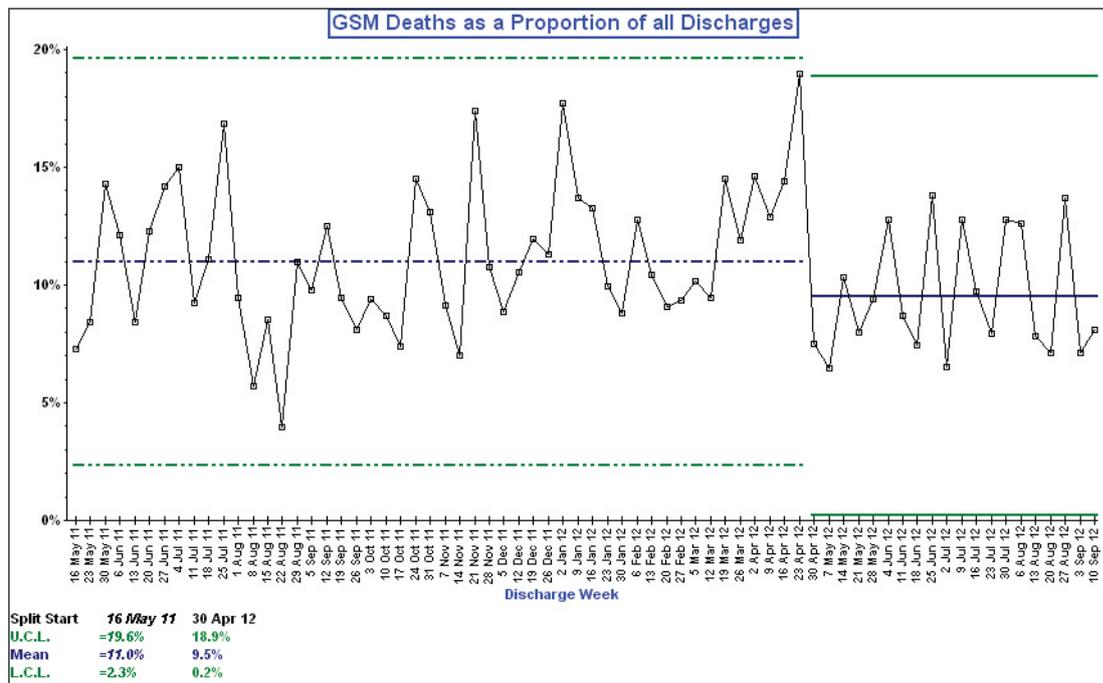


'What we've seen here is that we can have a slicker service that is not going to be as expensive to deliver and in fact will give better outcomes for the patients.' (Peter Lawson)

The Sheffield team report that deaths among this patient group (measured in the trust by raw mortality rates) appear to have fallen since April 2012 from a relative constant of 11% (past two to three years) to 9.5% (Figure SH9). This suggests a relationship between improving patient flow and improving patient safety.

Figure SH9: Deaths (emergency geriatric medicine) as proportion of all discharges

(provided by Sheffield Teaching Hospitals NHS Trust)



During late September the wider health community in Sheffield experienced major problems with patient flow. Patients were unable to access care support in a timely manner and this resulted in increasing delays to discharge, as well as an increase in patients whose admission was for purely social care reasons. This, in turn, had an immediate impact on A&E attendances and their ability to meet the four-hour target.

The hospital never fully recovered from this before the onset of flu, black ice, norovirus and other issues associated with winter, meaning that the bed count returned to previous levels. However, they hypothesise that without the improvements in the earlier part of the year, they would have been in a worse position today.

'The Flow, Cost, Quality work has had a beneficial effect in that we better understand what has caused the system to malfunction and that the teams are now enabled to address the issue across the whole city. We have started to see some of that solution coming on stream.' (Paul Harriman)

Continuous improvement

Despite their successes, the team are not complacent. They know they have further work to do on their internal processes, and that they need to improve communication across departmental silos and external links with other parts of the patient pathway, in order to further increase patient flow. Planned structural changes to update the environment of the Frailty Unit should further improve patients' experiences.

'The programme has achieved things here that we would never have achieved without it. The majority of people in this directorate can see exactly how it has improved things and can see that we don't stop here – we carry on.' (Peter Lawson)

The Oobeya (big room) process is now being used to work on accelerating discharge from the geriatric medicine 'base' wards in the bulk of the hospital. The team are working towards further improving the system design to achieve 'discharge to assess' at home and spread implementation downstream to the geriatric medicine base wards and beyond. Working in the 'big room' with community colleagues, the community teams have now redesigned to a point where they can accept referrals for assessment at home in real-time. Ultimately they aim to implement this to the community intermediate care beds.

Once the flow through and out of geriatric medicine base wards is improved, the team anticipate being able to reduce both the number of beds and the number of MAUs. Other clinical directors are interested in the results being achieved and the geriatric medicine team are keen to spread what they have learnt.

'I feel now it's really gained momentum. We now seem to be engaging more and more clinicians in the organisation, and more and more clinical teams. People are excited.' (Suzie Bailey, Service Improvement Director)

Key learning/insights

1. Use different strands of expertise

Working with complex change and applying improvement techniques requires expertise. The Sheffield team had access to that through working with Kate Silvester and the Health Foundation's programme. One of the key advantages of having an external viewpoint was in facilitating the work needed across organisations and agencies, such as improving discharge for frail older people.

The team also benefited from internal knowledge and skills, including those of consultant Tom Downes. Tom had recently completed the Health Foundation's Quality Improvement Fellowship with the Institute for Healthcare Improvement (IHI).

'Within any organisation wanting to do this work, there needs to be a cohort of people switched on and who understand the aims and methodology. Tom came back from the IHI and was able to really communicate what we were trying to achieve. He had worked in our system so he understood the frustrations and limitations and put them into context. He helped us pick apart our processes to address the key issues.' (Peter Lawson)

2. Build internal capability

The Sheffield team realised that for the work to be sustainable, they needed to grow improvement expertise among a wider group of staff. They needed to identify people keen to make changes and give them the time, knowledge and skills to do it properly. A key part of the ongoing work of Sheffield's service improvement team, and the big room process, is improvement coaching for staff at microsystem (clinic or ward) level. This is enhancing local ownership and enabling staff to run and report on their own tests of change.

'We've got projects delivering change that is benefiting patients and efficiency. That's really helping to embed quality improvement deeper into the organisation.' (Tom Downes)

A range of staff, including nurses, managers and doctors, are also being supported through a microsystem coaching academy, as part of the Health Foundation's Shared Purpose improvement programme. See www.health.org.uk/areas-of-work/programmes/shared-purpose/related-projects/sheffield-microsystem-coaching-academy/

3. Keep focused on patients and data

'Data on their own can be quite dry and un-engaging; patient stories on their own can just be dismissed as anecdote. But combine the two together and it can be incredibly powerful.' (Tom Downes)

The Sheffield team have been rigorous in collecting and analysing data to ensure that the changes they make are achieving the desired effect. Openly sharing data – much of which crosses organisational silos – has enabled staff to learn from both 'failures' and success.

Alongside this, the team have maintained a constant focus on what matters to patients and what needs to be better.

'I always took it for granted that we would be focused on the patient but every meeting starts with a patient story. It brings everybody in the room around to remembering why we're there and why we are trying to improve the service.' (Peter Lawson)

The team have used a variety of methods to keep focused on patients. Different staff volunteer to bring a story to each flow meeting – usually about the experience of a recent patient who has been in hospital. Patients have also been directly involved in coaching sessions.

Early on in the project, the team also created a case study around a fictional patient – 'George' – which helps them keep focused on the needs of patients when they are redesigning processes. As part of engaging senior leaders in the work, the team have taken board members to geriatric medicine wards to listen to patients' views about their care.

4. The power of small-scale testing

Testing out new ideas on a small scale has enabled the Sheffield team to achieve some major changes, while keeping staff engaged and taking ownership. All 16 geriatric medicine consultants changing their on-call rotas on the same day, to extend work into the evenings and weekends, is a clear example of this success.

On a larger scale, the focus on improving flow in emergency and routine care for older people is generating wider learning for the trust.

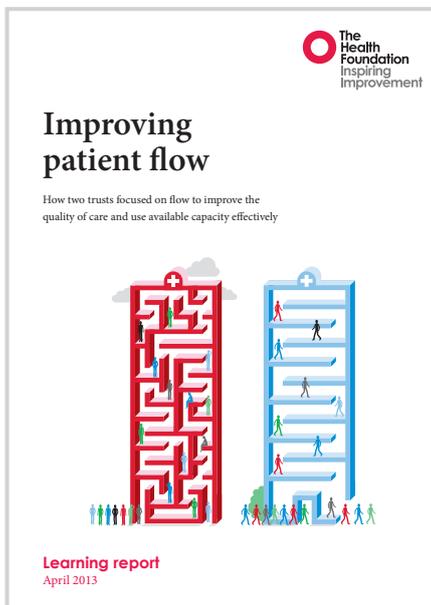
'The beauty of what's being sorted out in the big room for older people is that it's applicable to other patients – eventually it will be rolled out for whole healthcare system.' (Peter Lawson)

'Sheffield Teaching Hospitals NHS Trust is a big organisation with 15,000 employees in over 70 professions. The system's engineering principle of breaking the organisation into smaller components, not by function (ie traditional organisation structure) but by identifying fractals of the 'flow level' proved invaluable. This reflects learning from manufacturing, where factories and their supply chains are managed as value-streams that serve particular customers with particular needs. This principle of lean thinking has the advantage of bringing staff from different functions together to focus on the one thing that matters to them all: the patients in their care.' (Kate Silvester, Clinical systems improvement expert)

Unblocking a hospital in gridlock

South Warwickshire NHS Foundation Trust's
experience of the Flow Cost Quality
improvement programme

This case study accompanies the learning report *Improving patient flow*.
For more details, please see www.health.org.uk/flowcostquality



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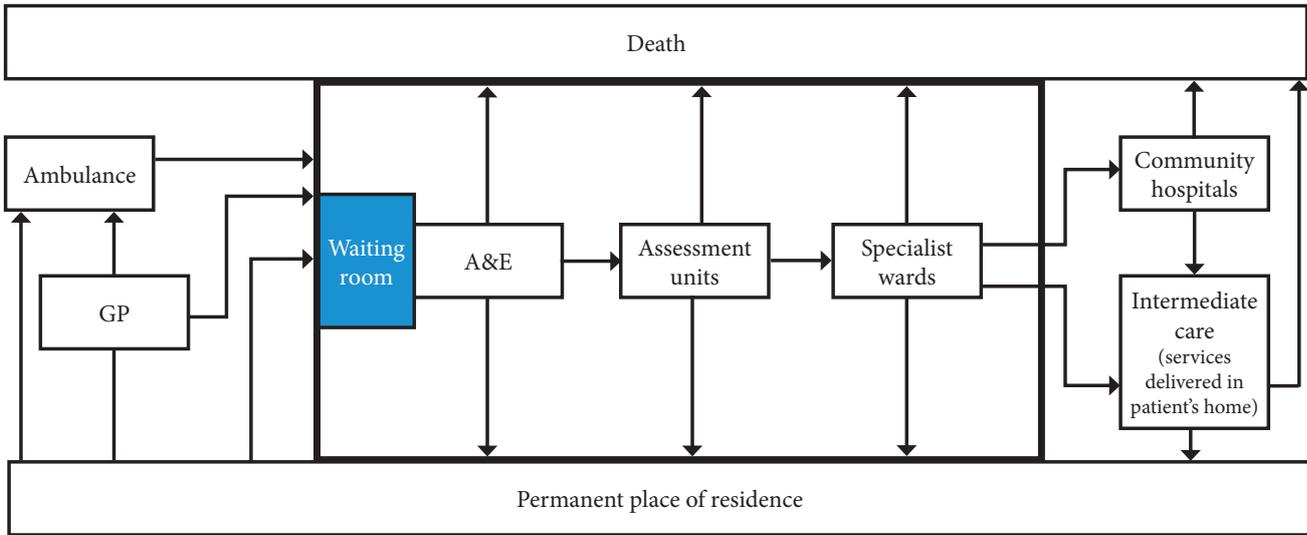
Introduction

The aim of the Flow Cost Quality improvement programme was to explore the relationship between patient flow, costs and outcomes by examining patient flow through the emergency care pathway, and developing ways in which capacity can be better matched to demand. The programme ran in two NHS hospital trusts: South Warwickshire NHS Foundation Trust and Sheffield Teaching Hospitals NHS Foundation Trust. Dr Kate Silvester, a dedicated clinical systems improvement expert, supported the teams in both organisations.

The Flow Cost Quality team at South Warwickshire NHS Foundation Trust focused on the emergency care pathway for all adult patients. Although confident they had created an efficient pathway for elective patients, senior leaders within the trust knew that they had some real problems in the emergency pathway.

‘It was obvious that patients were having a poor experience. We weren’t able to achieve the four hour target in A&E, our length of stay was increasing, mortality was increasing, patients were undergoing multiple bed moves... there was ‘gridlock’ in the hospital.’ (Jyothi Nippani, Associate Medical Director for Emergency Care)

Figure WK1: High level map of the emergency care system



As part of the Flow Cost Quality work, an improvement programme and infrastructure was set up. This brought together senior leaders, clinical staff and a project team to address these problems in three phases:

- Data analysis to understand the system and the size of the problem.
- Identifying a range of solutions to test out in different settings.
- Full scale implementation of successful changes.

The power of stories

One of the biggest drivers for engaging staff in understanding the need for change came from the observations of one patient. Following an eight-day stay in hospital, Gerard, a retired economist and management consultant, wrote to the trust's chief executive. Although he felt he'd been treated well and had a good outcome, he knew that his care hadn't been organised in an optimal way, and he identified a number of periods during his stay where he was particularly concerned.

Instead of sending a response letter, Chief Executive Glen Burley invited Gerard to come back to the hospital. They met with the clinicians who had been involved in his care in order to process map what had happened (Figure WK2). The mapping exercise was an eye-opener: within an eight-day stay, only 18% of the time spent had really added value to Gerard's treatment and care. This meant that 82% of time and resource had been 'wasted'. Using the finance department's nominal cost of £250 per day, only £750 out of £2,000 was actually needed to get him better.

The exercise exposed the errors and delays in the pathway, and highlighted to staff the inefficiency, waste and poor quality of the system as a whole.

Figure WK2: Process map of Gerard's hospital stay



The session also enabled Gerard to convey details about his experience in hospital and how he had felt. As Glen reflected: *'His letter to me was a bit of a godsend. It was a really powerful force in getting clinicians to see the impact on an individual patient.'*

Gerard's input led to the team following and observing a sample of patients through the system to gather further information on what happened to them.

The discipline of data

With the expert support provided through the Flow Cost Quality programme, the South Warwickshire team also developed a deeper understanding of the importance of gathering, analysing and interpreting data. A crucial exercise was to demonstrate the relationship between emergency patient flow and mortality rate.

'During the diagnostic phase, how Kate presented data and how she conveyed it to clinicians created a burning platform and engaged people – especially the relationship between mortality and flow. That was a lightbulb moment for the clinical team.' (Mel Duffy, Deputy Director of Business Development and Transformation)

A focus on using data to understand flow also gave the team real insights into where the root cause of problems lay within their emergency care system and enabled them to identify potential solutions.

'It's easy to think you see where the problem is and to throw resource at it. So often in a hospital, those problems will manifest at the front door. A&E will stack up as the hospital is not flowing, so we often put resources into A&E to cope... What we identified was that the real problems were further downstream.' (Glen Burley, Chief Executive)

Implementing solutions

As a result of the data analysis, the team focused on testing and implementing changes in the following areas:

- Improving assessment
- Doing today's work today
- Improving ward-based processes

Improving assessment

The problem

As in many hospitals, most emergency patients faced delays waiting for an initial assessment by a junior doctor. Once assessed, they then had to wait for input from a senior medic. There was also a lot of duplication (and therefore waste) in the current system. Patients coming through A&E would be seen by a junior doctor first, then by a registrar and sometimes by an A&E consultant. This would often trigger a referral to a specialist team.

'Then patients would again be seen by the most junior doctor in the specialist team... and the process would start again. So it took a long time to take an actual clinical decision. And patients had to answer the same questions so many times.' (Jyothi Nippani)

Analysis of the current system

An in-depth analysis of data revealed that the peak influx of patients from A&E to the Medical Assessment Unit (MAU) occurred in the evening, and there was no change over the weekend. The overall demand for emergency care was not the problem: the problem was the availability of staff at the right times to meet the demand (Figures WK3 and WK4).

Figure WK3: The daily mismatch between emergency demand and capacity

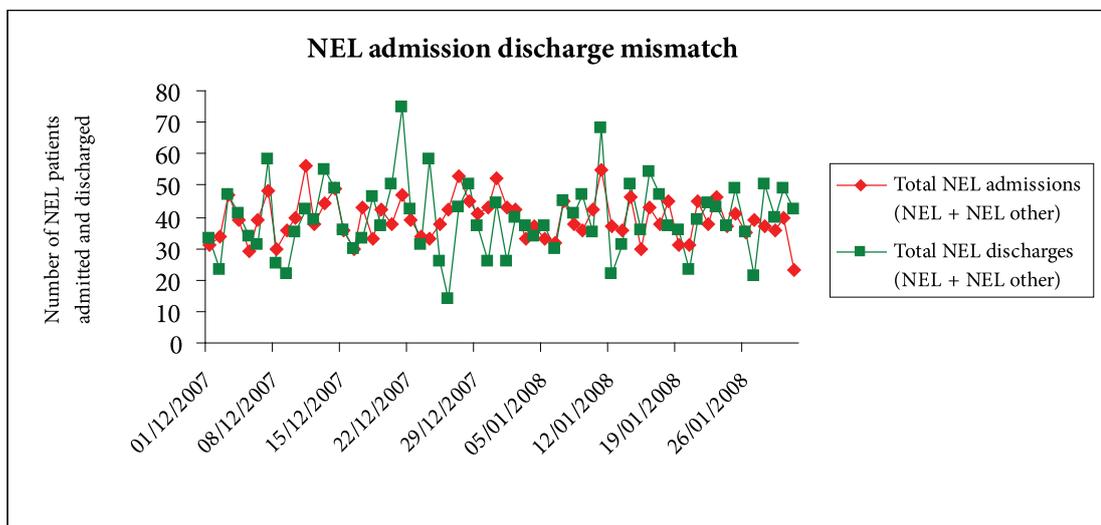
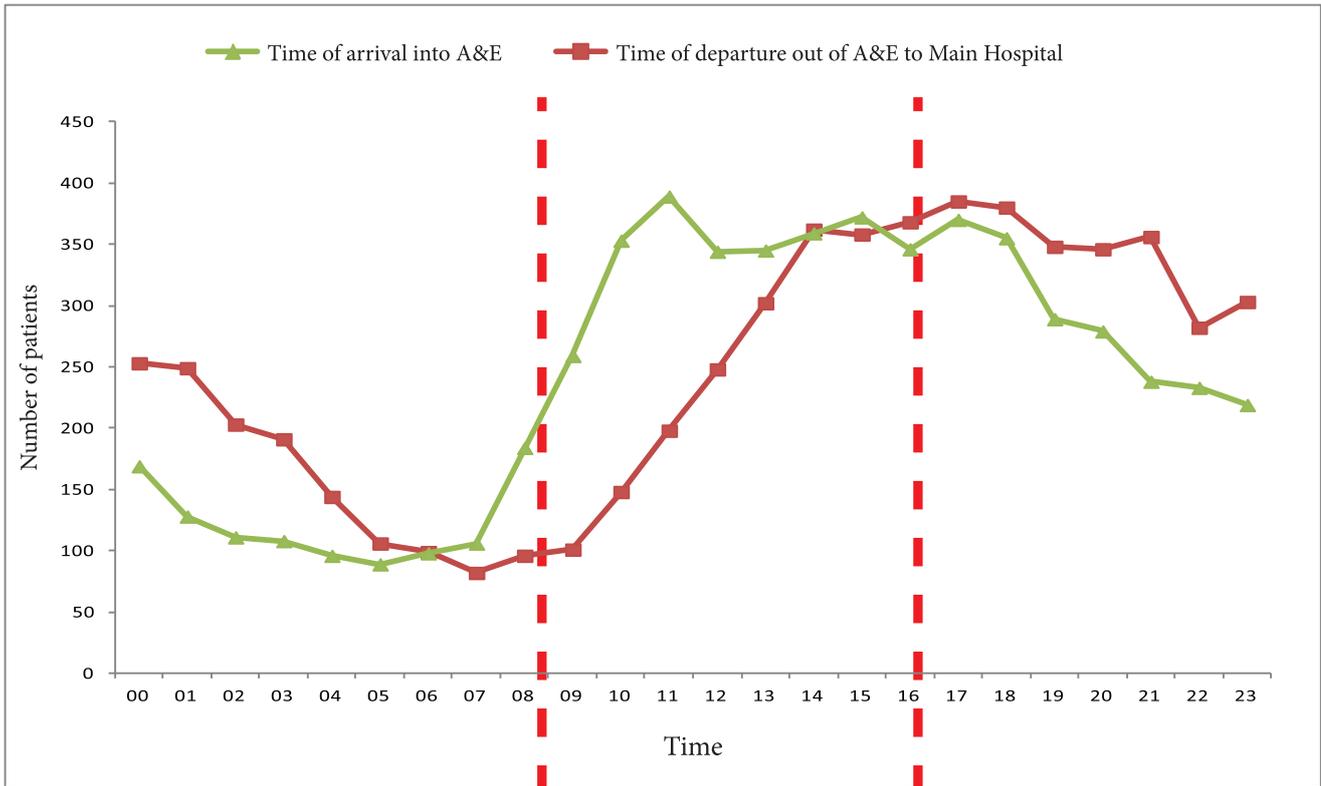
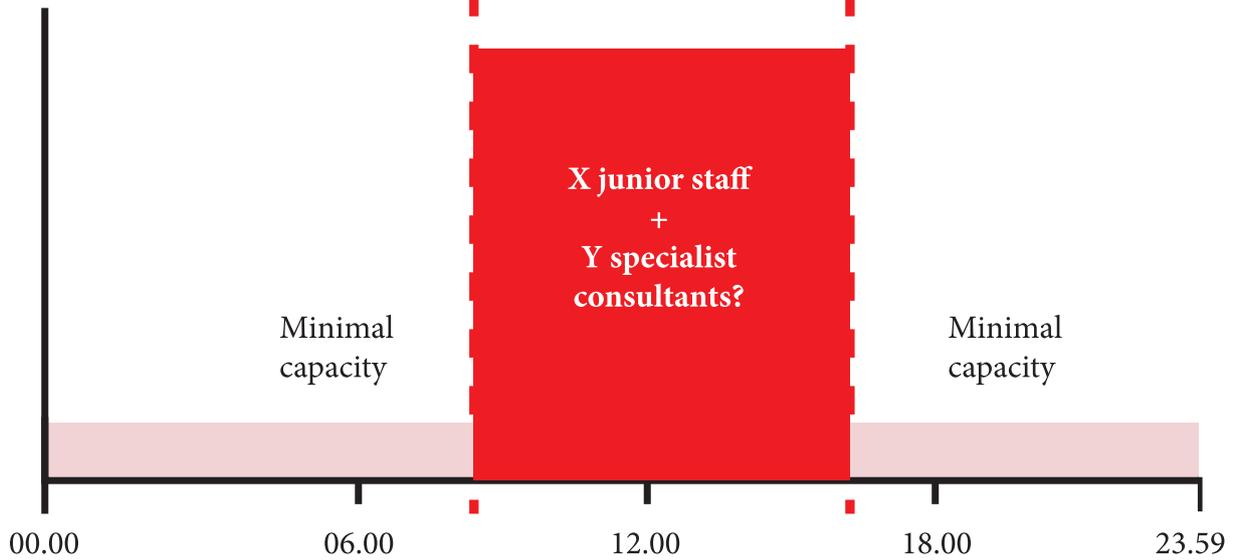


Figure WK3 shows data gathered prior to the Flow Cost Quality programme. It shows that the variation in daily discharges is far greater than that of the emergency admissions (which are predictable within limits). The variation in discharge is due to the Forrester (amplification) effect within the hospital and is governed by variations in capacity, particularly the availability of senior decision-making staff. There is a peak in discharges on Christmas Eve (24 December) and on 2 January.

Figure WK4: Mismatch between timing of patient demand and availability of specialist medical input during the day



When is the specialist capacity available?

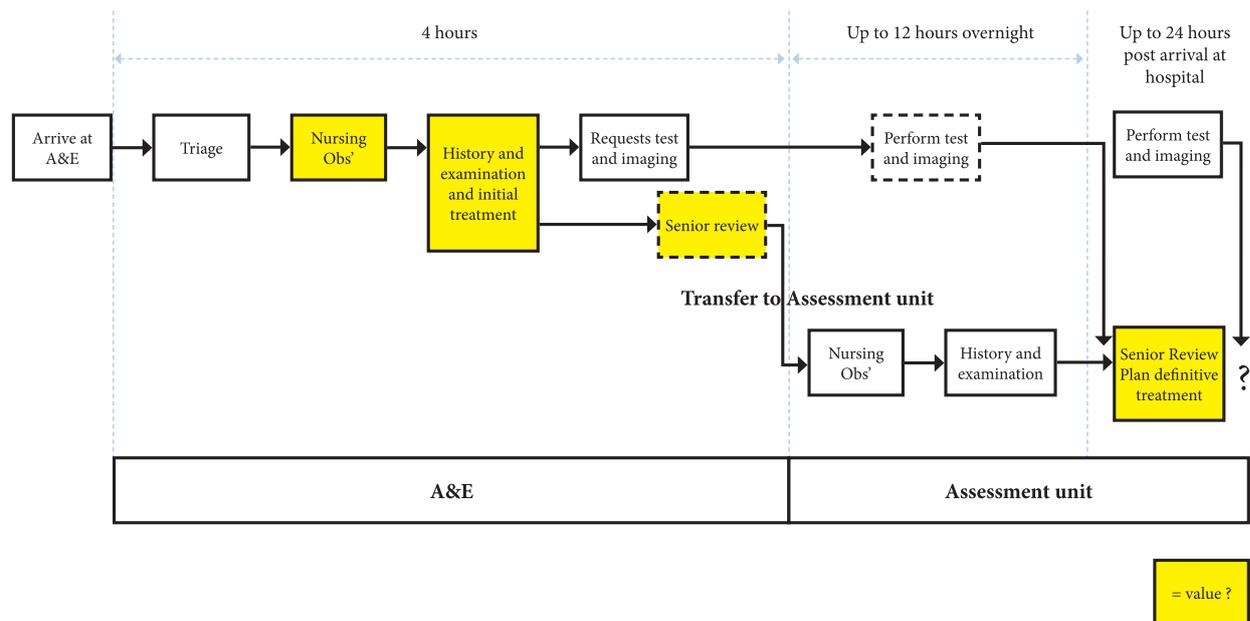


The top chart in Figure WK4 shows the time emergency patients (who go on to be admitted) arrive at A&E (green line) and when they arrive on the assessment units and wards (red line). There is a four-hour time delay between the two. The consequence is that although two-thirds of patients arrive during working hours (when senior decision-making staff are available), they are not in the ‘right’ place by the time the senior staff leave the hospital at 6.00pm.

‘What we had was a “stop-start” system, with patients still coming at night when we’d gone. Friday afternoons produced a much longer queue, which we then had to pick up on Monday. This wasn’t good for the flow of patients – there was a lot of waiting in the system. It was very clear that we couldn’t change when patients were coming into the system, so we had to change our working patterns.’
 (Jyothi Nippani)

The process map below (Figure WK5) illustrates the impact of this four-hour delay between when emergency patients were presenting and when they were passed on from A&E to MAU for specialist review and possible admission.

Figure WK5: Map of existing assessment process



As a result of existing work patterns (8am to 6pm, Monday to Friday), on-take physicians and surgeons saw only around a third of patients before 6pm on the day they presented. The majority of patients arrived after 6pm. This meant they had to be kept overnight on the assessment unit to wait for review on the ward round the following morning, and then be referred on to another specialist consultant if required. Delays in this onward referral process (including the internal post) meant that patients needing specialist review were often not being seen until day three of admission. By this time, they may have been moved to a ward in order to make room for the current day’s admissions to MAU.

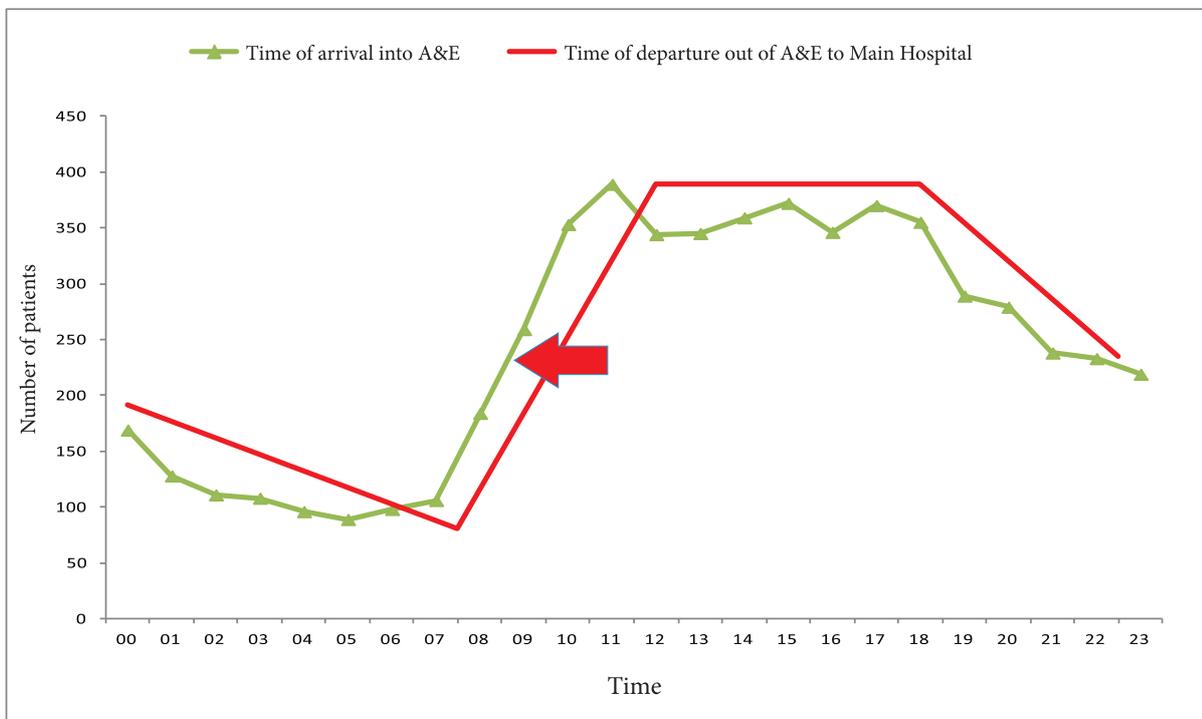
The mismatch between the daily variations in admissions and lengths of stay for patients requiring subspecialty care and the variation in subspecialty bed availability meant that many patients were not placed on the particular specialist ward they needed. As a consequence there were further delays for those patients requiring specialist opinion and confusion as to who was responsible for each patient’s care.

‘If patients end up on the wrong ward, they get a raw deal. There are delays and they don’t always get the right treatment. We wanted to make sure patients got seen by the right specialist at the right time.’
 (Jyothi Nippani)

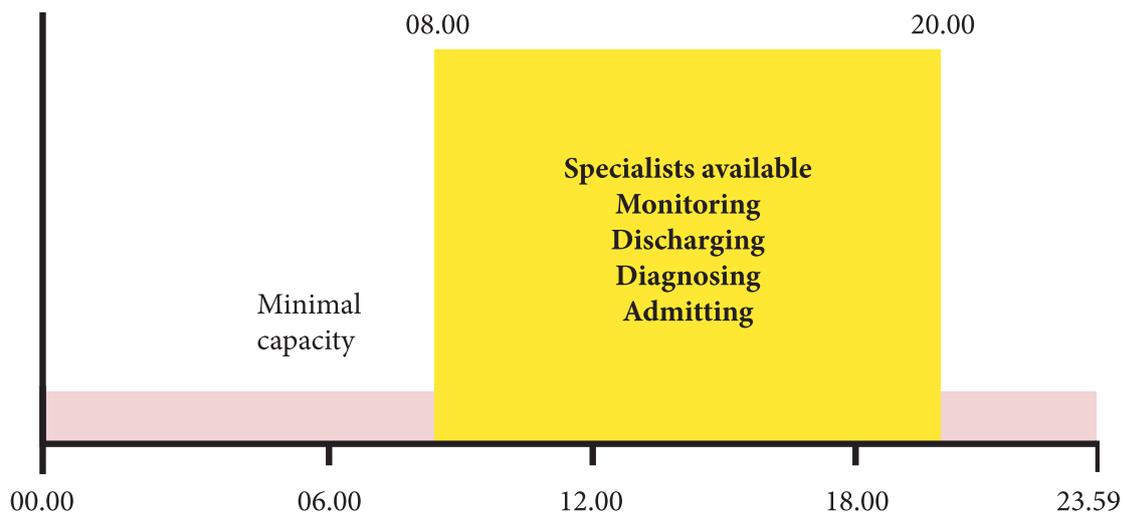
The solutions

The graph below (Figure WK6) demonstrates the required change to eliminate the time delay and distortion of demand. The patients had to be seen and referred by A&E staff more quickly, and then assessed by senior clinicians on the day they attended.

Figure WK6: Shifting specialty medical input to match timing of patient demand



The specialist capacity needs to be available:



Bring senior clinical assessment to the front end and ‘pull’ patients through the system

The team hypothesised that if they placed senior clinical decision makers in the MAU when patients presented they could improve the system dramatically. Having senior medical staff available to assess patients earlier would get patients onto their right care plan more quickly and efficiently. They could then refer patients to subspecialty colleagues electronically so that they too could see the patients on the day of admission.

The specialists also recognised that if they visited the assessment units after their morning ward rounds (at which time they would have discharged patients), they could ‘pull’ patients from the MAUs to their specialist wards while beds were available. The cardiologists were keen to try out the change and so began a month-long test of ‘specialty pull’ – a daily visit to the MAU to identify patients needing cardiology input or admission.

‘It fitted with what they wanted – only cardiology patients on the cardiology ward. It gave them greater ownership and empowered them to discharge patients who didn’t need to be there and pull in cardiology patients from MAU. That had a big impact on flow.’ (Jayne Blacklay, Director of Development)

The trial demonstrated clear benefits for cardiology. However, other pressures in the system began to make it difficult to free up the beds necessary to pull cardiology patients through to the ward. The Flow Cost Quality team realised they needed to make the change across the whole system.

Having seen the benefits, some of the cardiologists moved from an initial scepticism to becoming keen to sell the concept to other specialists. Care of the elderly physicians were next to implement the change. A dedicated elderly care consultant began working alongside MAU colleagues, providing an acute assessment as soon as diagnostic results were available. This earlier assessment identified much more quickly those older patients requiring admission and ensured they had the right care management plans that could be followed throughout their journey onto sub-speciality wards. Early assessment also helped avoid admission for patients who could be discharged with input from the community emergency response team or other out-of-hospital services.

The success of these tests convinced other specialists to change their working patterns. Now, each morning, a range of senior clinicians (including cardiologists, elderly care physicians, gastroenterologists and chest physicians) visit the MAU, seeing patients needing their specialist input and making immediate care management decisions. Those that can be discharged may be given a follow-up outpatient appointment, while patients requiring admission can be transferred to a specialist ward for further treatment and care.

Match consultant availability to patient flow

Due to the timing of demand in MAU, the changes that were needed meant introducing extended and weekend working for consultants (Figure WK6). Senior medical availability from 8am to 8pm ensured that patients were being assessed and put on the right care management plan on the day they presented. It took major delays out of the process and, crucially, avoided the need to ‘store’ patients overnight on the MAU. It also reduced the duplication and waste inherent in the previous system of multiple assessments. The presence of senior clinicians also provided greater leadership and guidance to the junior team.

‘We had consultants who had been working here for 20 years and had never been rostered to work beyond 5pm, so to ask them to work late into the evening every day including the weekend was a lot to ask. But they engaged with it and felt that this was the way forward. Once convinced, the consultants did the rotas themselves and just got on with it.’ (Jyothi Nippani)

The impact

The changes put in place brought a range of benefits including speedier senior assessment of patients, with quicker access to specialist input or admission, lower bed occupancy on the MAU and a higher percentage of patients on the ‘right’ wards for their needs.

‘The surprising thing was that although the symptoms were in A&E, we didn’t have to do anything in A&E at all. What we did was try to sort out the system from the back end – and the flow started improving.’ (Jyothi Nippani)

Doing today's work today

Diagnostic services, particularly blood sciences and imaging, are key to timely diagnosis and monitoring of treatment. Blood tests are critical to clinical decision making and therefore to both patient flow and safety.

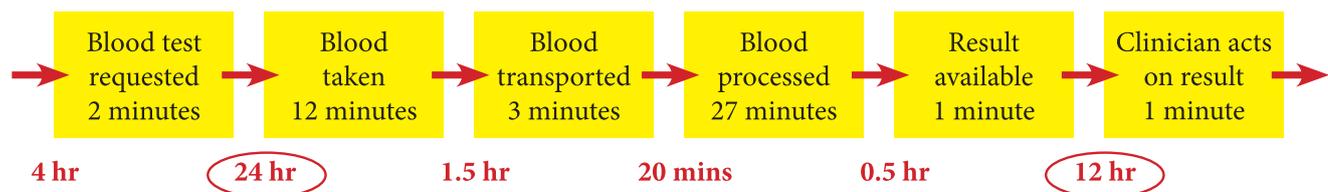
The problem

In South Warwickshire, clinical decisions were being made on out-of-date blood tests. The flow team looked in detail at seven ward rounds and discovered that all the blood results on which the doctors were making clinical decisions were at least 24 hours out of date. Clearly, this was a major safety issue.

Analysis of the current system

A multidisciplinary team, comprising a consultant, junior doctor, ward sister, phlebotomist, portering manager, laboratory receptionist and laboratory technicians, came together to map and understand the main delays in the inpatient blood test process. The team discovered that blood tests requested on the ward round on day one were drawn by the phlebotomists after 8am on day two, while that day's ward round was taking place. The inpatient blood samples were delivered to the laboratory after the ward round had ended – just as blood samples from outpatient clinics and GP practices were arriving. This peak in demand for testing meant that results were not available until the late afternoon, when doctors were no longer on the wards. As a consequence, blood results were not reviewed until the following day's ward round (day three).

Figure WK7: Summary of the blood test process for an inpatient



The necessary and value-adding steps are shown in the yellow boxes. The delays due to waste (transport, inventory, motion, waiting, overprocessing, overproduction and defects) are shown in red.

Staff had previously assumed the delays in getting blood results were the responsibility of the laboratory. However, the analysis showed that the primary problem lay outside the laboratory. In practice, there were two key issues: a) the phlebotomists' work practices and the doctors' ward rounds were out of sync; b) the batching of blood samples resulted in large variations and peaks in demand on laboratory resources.

The solutions

Make small alterations to working practices

The phlebotomist agreed to start her day half an hour earlier at 7.30am, at the end of the nursing handover. Changes to the portering routine enabled two porters to 'shuttle' between the phlebotomist and the laboratory, delivering small quantities of blood samples in real time. One laboratory technician changed their working day to start at 8.00am and finish earlier in the afternoon. These changes would allow laboratory staff to process blood samples as they came in, instead of waiting for a large batch in the afternoon. In addition, the laboratory team redesigned their workflow for analysing samples, resulting in a more efficient process that takes less staff time.

Test the changes

Having measured the numbers of samples arriving in the lab before 9.30am and the number of blood results coming out by 10.30am for two 'control' days, the team then tested the new system over three days to demonstrate that it worked. Inpatient blood samples were in the lab by 9.30am and results were available before the doctors left the wards.

Make the system reliable

The team wanted to ensure that clinical decisions were being made on 'today's' blood results. They monitored the number of inpatient blood tests requested each morning, the number of samples delivered to the lab by 9.30am and the number of results available by 10.30am, aiming to achieve 100% of results available for the ward rounds. They recognised that there would be occasions when the result was abnormal and would require further testing. Making the system reliable meant that if the result was not on the wards by 10.30am, the doctors would know that there was something wrong with the result and follow it up at the end of the round.

Further changes included recruiting phlebotomists and training laboratory staff to take blood, enabling the trust to provide a consistent and standardised service, seven days a week, 365 days a year.

The impact

The changes made have increased the number of same-day blood test results available on the ward rounds from less than 15% to more than 80%. Up-to-date results mean that consultants are able to make quicker and safer clinical decisions for patients.

The laboratory staff recognised the benefits of getting the inpatient samples processed earlier in the day. Domiciliary phlebotomists now pick up blood samples from the main GP practices on their way back to the hospital, thereby bringing the bulk of the laboratory's work forward into the day. As a consequence, these GPs received their morning results before their afternoon surgery. GPs visiting the laboratory during National Laboratory Week commented on the superb service they receive.

'The knock-on effect of getting blood results back to the ward on the same day has been really good for patients. Personally, I've really enjoyed it. Before I used to come to work every day and it could feel like a bit of a factory. It's made us realise that this sample has come from someone on a ward who really wants to get home so it's helped to bring that more to the forefront.' (Tracey Clayton, Biomedical Scientist)

The relationships between the members of the multidisciplinary team have changed as understanding and respect for each role has grown. The laboratory staff, phlebotomists and porters can now see the impact they all have on patient care while the doctors are more respectful of the service they receive.

'It's led to a rapid improvement both in process time and in decision making for the consultants. It's a really powerful scheme and it didn't cost us a penny. We just re-engineered it and everyone is really proud of what they've achieved.' (Glen Burley)

In March 2011, the project team received a National Patient Safety award (highly commended) for addressing this nationally recognised problem.

Improving ward-based processes and discharge

The problem

Experience during the trial phase of the 'specialty pull' from MAU into the cardiology ward had highlighted bottlenecks further along the patient pathway. Discharge of patients who didn't require specialist cardiology input was being hampered by the fact that other wards were unable to accept more patients. The root cause was a higher than clinically necessary occupancy due to delays in discharge. These delays were exacerbated during annual or study leave of senior medical staff – sometimes leaving junior doctors unable to make decisions about further investigations or sending patients home.

The solutions

Change job plans to enable a 'consultant of the week'

Again, the cardiologists led the way. They changed their job plans to take it in turns to be based on the ward for a week at a time. The 'consultant of the week' is responsible for all the patients on the ward, providing increased continuity, senior decision making and communication. During their ward-based weeks, consultants cannot book annual or study leave. Emergency work also gets prioritised over elective work, to keep patients flowing through the system more quickly.

The nursing team and junior medical staff have also benefited, with greater senior consultant support and team working, more proactive direction, and consistency in decision making. Most importantly, patients are no longer waiting several days to see 'their' consultant. With its clear benefits, the 'consultant of the week' system has been rolled out across other specialist wards.

Introduce daily ward or board rounds

The change in working patterns, along with timely investigation of results, has also facilitated the scheduling of ward or 'board' rounds every day, ensuring that each patient has a daily review of progress. With the early assessment on MAU and the 'specialty pull' system overtaking the traditional bed management system, more of the right patients are on the right ward. The ward team can now focus on carrying out the plan of care.

Board rounds are used to regularly keep on top of detailed care plans. The clinical team meet in front of a visual management board highlighting key information about the patient, including diagnosis, admission date, their care management plan and expected date of discharge. They can discuss progress and make decisions on changes to the patient's management plan or impact on the expected date of discharge. In addition to highlighting new patients (who need a formal face-to-face consultant review), the board round enables the team to identify patients who are improving and can be reviewed by a nurse practitioner or junior doctor, and the planned discharges for the day. The investigations are reviewed and whole team is aware of the jobs they have for the day.

This daily team and senior medical focus on actively moving each patient toward discharge has helped free up the 'gridlock' within the hospital. Patients are being discharged when clinically able, freeing up beds on a daily basis for consultants to pull patients needing admission to a specialist ward through from MAU.

Introduce an electronic work management system

The new focus on getting investigations and their results done within two hours of the patient presenting highlighted some of the inefficiencies and delays in junior doctors' work.

'They reported running around not sure where a patient was... and when they found them, not being sure what they needed to do with them.' (Jayne Blacklay)

To deal with this, the team sourced and introduced an electronic work management system (Heart Beat) which runs on mobile phone technology. When a patient arrives at A&E, they are added to the system for assessment. This flags the key investigations that need to be done, which get added to a specific work list. This gets updated at each stage of the assessment process. Now each junior doctor has a clear view of who their next patient is and the tasks that need doing.

On the wards, the electronic system is displayed on a large white screen, providing effective visual communication to support more efficient management of workflows across different members of the multidisciplinary team.

An added benefit of the work management system has been more data being available for the Flow Cost Quality team to understand where delays in the hospital are occurring and why.

Reduce the bottleneck in the take home medications process

Waiting for take home medications (TTOs) to be prescribed and dispensed causes delays between the time patients are clinically ready to leave hospital and when they actually do so. The delay contributes to the daily mismatch between admissions and discharge.

The South Warwickshire team identified two main delays in their system. The first was in getting prescriptions to the pharmacy department. Delays in physically getting the scripts there were exacerbated by TTOs often not being prescribed until after the ward round. The second main delay was in getting dispensed drugs back from pharmacy onto the wards.

In order to address these delays, the team worked on two key changes. They introduced electronic prescribing, which now takes place during the ward round so that scripts are immediately available to the pharmacy department. Secondly, they changed the portering routine. Porters now make four deliveries of TTOs from pharmacy onto the wards between 2pm and 6pm, instead of a single 'batched' delivery at 5pm.

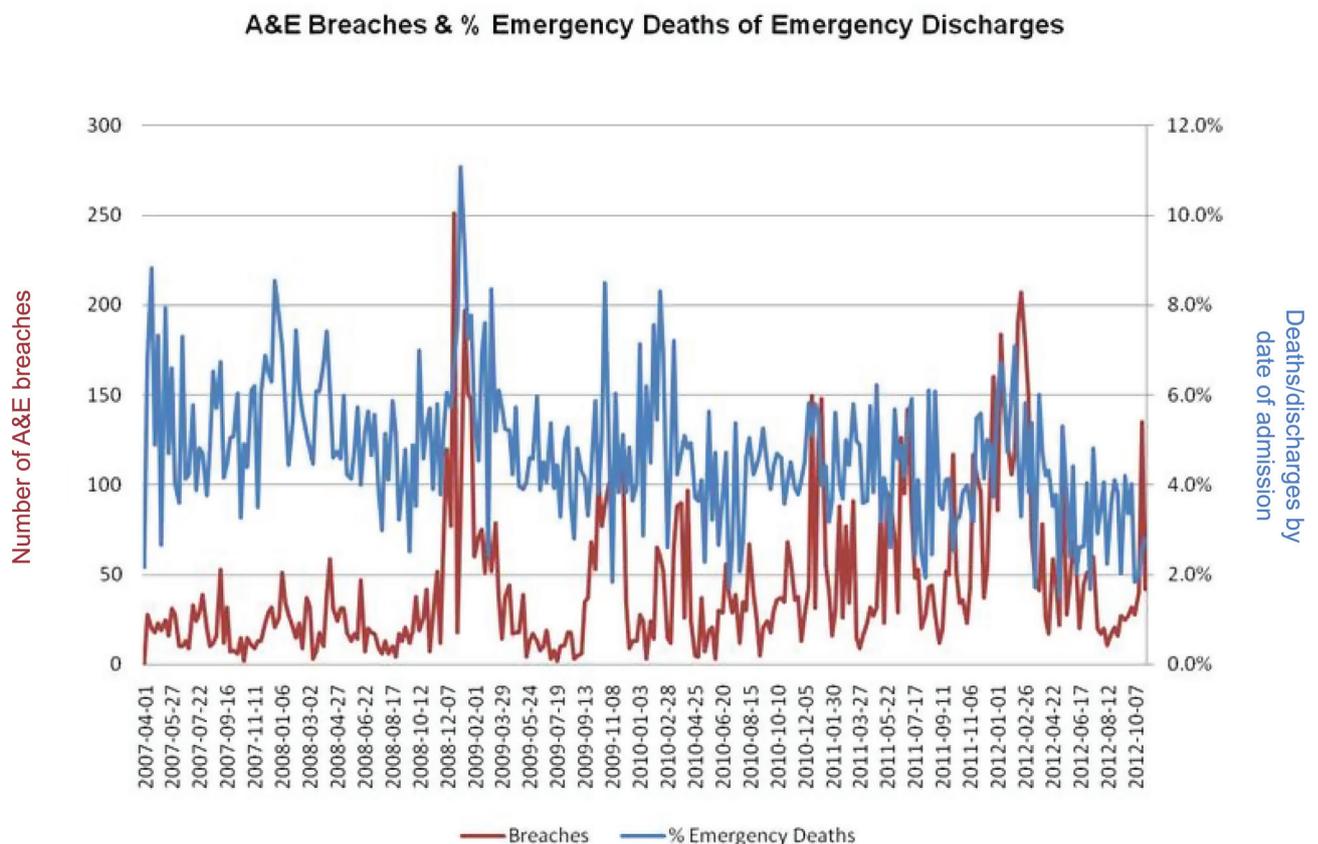
Addressing the TTO bottleneck reduced the turnaround time between a discharge decision on the ward round and the patient leaving hospital with their correct and complete drugs from an average of just under six hours to two hours. Electronic prescribing of TTOs has also reduced prescribing errors from 35% to 10%.

High level results

Since the team has been implementing the key changes tested within the project they are beginning to see results at a system level. Despite dealing with an 11.5% growth in emergency admissions over the past year, the trust has managed to maintain A&E performance, and reduce average length of stay and bed occupancy. An apparent 10- to 15-point improvement in raw mortality (as measured by the trust) and high levels of patient satisfaction point to this being a result of improved flow – a more efficient, higher quality system rather than one just pushed to work harder.

Figure WK8 is a time-series chart showing A&E breaches (patients spending longer than four hours in A&E) and the death rate for the adult emergency admissions **by their date of admission** (blue line).

Figure WK8: Correlation between A&E performance and mortality rate for adult emergency patients*



* These data were subjected to Statistical Process Control methods (Paper accepted by the *International Journal of Healthcare Quality and Assurance* in November 2012 and now in press: 'Does process flow make a difference to mortality and cost? An observational study').

The key points to be noted from the data include the following:

- There was a reduction in the mortality rate as measured by the trust for emergency patients admitted from June 2008. This corresponds with the implementation of the trust's healthcare-acquired infection control policy.
- There appears to be a non-linear relationship between emergency flow and the subsequent mortality of patients admitted during periods of poor emergency flow. There is an apparently marked relationship between poor flow and mortality in December 2008, September 2009 and December 2011.
- There was no change to the number of emergency patients attending the hospital during the first three years of the five years monitored for this programme.
- The poor flow in December 2008 and December 2011 can be explained by an increase in the proportion of emergency patients over 80 years old admitted in the preceding Novembers. In December there was a reduction in staff availability due to the Christmas holidays which, in 2008, was exacerbated by a flu epidemic that affected both patients and staff.
- Some staff thought that the deterioration in A&E performance and the spike in mortality in September 2009 was associated with the closure of a 40-bed community hospital. It was suggested that removing this 'storage capacity' from the health and social care system without first improving flow for these patients destabilised the entire emergency flow. However, following more detailed analysis of the change to flow, some stakeholders identified that other changes to the system were more likely causes of increased length of stay and the resultant poor flow. The introduction of the Continuing Healthcare Checklist[†] and the new assessment process was a lengthier process. There was also an increase in patients requesting assessment for Continuing Healthcare funding. This resulted in a growing backlog of patients for assessment and a subsequent increase in length of stay.
- Implementation of changes to improve flow, cost and quality began in April 2010. In May 2012, there was a statistically significant change (based on SPC analysis) in the pattern of the mortality rate. This was due to an increase in the proportion of younger patients (16 to 64 years) being admitted, which reflected an improvement in emergency flow and a fall in emergency bed occupancy. Freed-up beds allowed clinicians to reduce the clinical risk for younger patients (such as those presenting with potential deep vein thrombosis or pulmonary embolism) by admitting and keeping them on the MAU until diagnostic results were back.

In terms of efficiency and cost, these achievements have meant that the trust has been able to treat more patients without increasing the overall bed base. However, it was not possible to carry out plans to close winter capacity due to the growth in emergency admissions.

[†] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/127200/NHS-CHC-Checklist-FINAL.pdf

Key learning/insights

1. There's no quick fix

The performance culture in the NHS can bring pressure to fix problems quickly. However, the programme brought home to the South Warwickshire team the message that understanding each bit of their own system and how it works is key to knowing where to put the solutions in place. The place where flow appears to be blocked is often not where the real problem is.

'There are few quick fixes to this. It's very easy for people to say "let's get a menu of solutions and let's just put them into our hospital". Some of those quick fixes don't solve the problem – they just paper over the cracks. You have to be brave enough to stand back, to break it all down and put it all back together again. You have to understand how each cog works in the system and you have to get your people to own that and feel accountable.' (Glen Burley)

2. Analyse the data

Spending up to the first year of the programme gathering and analysing data was the key to unlocking problems and their solutions. It required new skills and techniques, including using the A3 process and data analysis.

'Statistical analysis has been really valuable – a real legacy of the programme has been people looking at data in a different way. It gives you confidence that you have good reasons to make a decision.' (Jayne Blacklay)

It also helped to engage clinical staff in the changes needed.

'Investing time up front doing the analysis and really understanding where you need to spend time does have gains. The problem is not always what you think and can be so complex that having the analysis helps you know where to focus first. And by sharing data and information, you get people on board and they have ownership of the solutions.' (Jayne Blacklay)

3. Engage clinical staff

The team believe one of the main reasons for the programme's success was its almost universal clinical engagement. This was achieved through a combination of focusing on patient experience and linking this to data and the reality of staff experience. A patient's courage in presenting his story to the senior clinicians and managers in the hospital had a powerful influence on staff. The statistical use of data showed clinicians the relationship between the death rate and emergency flow, and that poor flow was not associated with periods of increased demand, but with lower staff availability. The programme also provided staff with an experimental method to change their system without making things worse.

Senior nursing and medical staff have shown great enthusiasm and have worked as a team to drive the changes. They are able to see the benefits of nursing leadership on the wards. Junior doctors have also experienced the benefits of the daily consultant presence on the wards. Consultants are now actively engaged in all change programmes within the trust, and having struggled with clinical engagement in previous projects, this has become a key legacy of the Flow Cost Quality work.

4. Keep focused on patients

A focus on understanding the experience of care from the patient's perspective highlighted the inherent waste, delays and safety issues within the system and helped galvanise change.

'We were driving this not from a cost perspective, but from what is the right thing to do for patients. Hearing some of the patient stories at the beginning was a real eye-opener. We had staff around the table saying, "I want to change things".' (Jayne Blacklay)

With hindsight, the team would have focused on greater patient engagement throughout the programme. They are now involving the trust's patient forum in evaluating some of the changes through developing a survey tool and undertaking interviews with patients in MAU.

'What we're really doing is making it a safe organisation by ensuring the presence of senior decision makers very early in the patient journey and improving patient experience while they're here. Getting it right first time automatically improves efficiency and costs.' (Jyothi Nippani)

5. Impact on costs

Realising cost benefits through improving efficiency and flow depends on stable demand. In the period preceding their involvement in the Flow Cost Quality programme, South Warwickshire had experienced relatively static demand and had not seen the significant growth experienced in some other parts of the country. However, unexplained growth in emergency work over the past year has challenged the team's early assumptions that programme interventions would result in doing the same work with less resource.

6. Improving quality improves staff morale

Senior leaders believe the programme has also improved staff morale. Previously, they were aware of feelings of helplessness among some staff that the system wasn't delivering the best care for patients. For example, junior doctors expressed concerns about safety after 5pm with acutely ill patients arriving until midnight, and about how stretched they were with the volume of work. At a recent Deanery visit, junior doctors commented on how safe they feel since the introduction of new ways of working. The trust has now seen some dramatic improvements in the staff survey and people talk enthusiastically about the work they are doing.