

Transforming Radiology Services at Bedford Hospital



Some Headlines:

- £1.2m financial gains;
- Reduction of waits in Plain X-Ray from 2 weeks 2 days to zero;
- 639.9 staffing hours released to enable increase in capacity and ability to invest elsewhere;
- Increase in staff morale and pride in department.

Introduction:

Not unlike the majority of NHS organisations Bedford Hospital NHS Trust has endured tough times. With these tough times have come challenges demanding hard decisions. The challenges have not been unique to this Trust though.

They continue to dominate the national NHS agenda with new and varied initiatives such as QIPP being launched with increasing regularity...

- Overcoming significant financial deficits;
- Driving up productivity;
- Increasing quality;
- Becoming more efficient.

The Radiology team and management had identified a number of questions and challenges and were looking for a new, fresh approach that would not damage the morale of staff and avoid 'slash and burn' decisions being taken:

- Are we operating in the most efficient and effective way?
- Are we spending our budget properly?
- We need to analyse demand/capacity/activity/productivity – do we have the funded resources to deliver what is required now, in the short, medium and long term?
- Are we giving a quality service to our customers?
- How do we match up against our competitors?

The Alturos approach was selected by the clinical team because it is proven in other Acute Trusts and is designed with skills transfer at its core. So although Alturos are an external provider they are not doing Lean for or to the Trust but with their teams to further develop them through experiential learning as they apply Lean in their own world. Beyond the requisite Lean expertise Alturos was able to offer the Trust the support of specialists in benchmarking, capacity/demand modelling and Lean accounting and financial impact analysis.

The Radiology Review – background:

Bedford Hospital NHS Trust serves a population of around 270,000 and manages 403 beds. In 2007/08 the Radiology department that employs 64 staff (Whole Time Equivalent) conducted 111,601 X-ray/imaging exams with demand increasing significantly in that 12-month period and forecast to grow considerably more.

The department was under significant pressure caused by a number of internal and external factors. The existing processes and ways of working were making it difficult to respond to the demand these factors represented and were impacting on staff and quality of service to patients.

Internal issues:

- A demand led department with demand on the increase;
- Block contract (so no income vs. activity);
- Old fashioned and restricted physical layout;
- Some old equipment that often failed;
- Reporting backlog;
- Increasing demand on staff time i.e. presence at MDT (Multi- disciplinary Team) meetings.

External issues:

- 18 Week Referral to Treatment target;
- 2 Week cancer wait;
- Need to respond to changes in technology;
- Competition from other Trusts and independent providers;
- New service developments in the wider Trust;
- Demand to provide more complex procedures.

Whilst the team were working hard on a number of initiatives to alleviate the pressure on them it was clear that a transformational redesign of the end to end Radiology processes was needed to address causes as well as symptoms.

In response to the requirements of the Trust Alturos designed a skills transfer change programme with authentic Lean as the core methodology. This comprised a number of components from the Alturos NHS Lean application framework, patient and staff surveys, and a benchmarking exercise.

The Radiology department activity was spread across 9 modalities:

- Plain X-Ray;
- Ultrasound;
- DXA;
- CT;
- MR;
- Nuclear;
- Mammography;
- Cardiac;
- Bariums.

Alturos facilitated the creation of Value Stream Maps for each modality, with all Radiology staff involved, as well as staff and stakeholders along other parts of the overall value stream. These staff developed Lean future states for each modality and presented their proposals to senior management who were delighted to see just how strategic the team had been and the truly transformational changes they were proposing.

Examples of the Lean future states:

- Plain X-Ray waiting abolished through operating a 'walk in' service for outpatients. Reduced administration;
- Eliminating the need to purchase a further CT scanner (c£500,000) in the current year by increasing capacity (with no additional staff or working hours), through pre-cannulation and standard working practises;
- Much lower check-in waits for patients and fewer missed telephone calls from patients trying to make appointments by creating separate appointments office. No additional staff just re-organised working methods. Negligible missed patient calls and therefore lower outbound calls to respond to voicemail messages left by patients. Lower lead time for patients when making appointments.



The Lean future states were developed so that clear and strong project plans could be created and subsequently managed to make the Lean future states reality, and effect the benefits to patients, staff, trust and other value stream stakeholders. Alturos tutored the internal Lean champions in the design of Lean project plans and business cases and subsequently worked with the Lean champions to implement the plans.

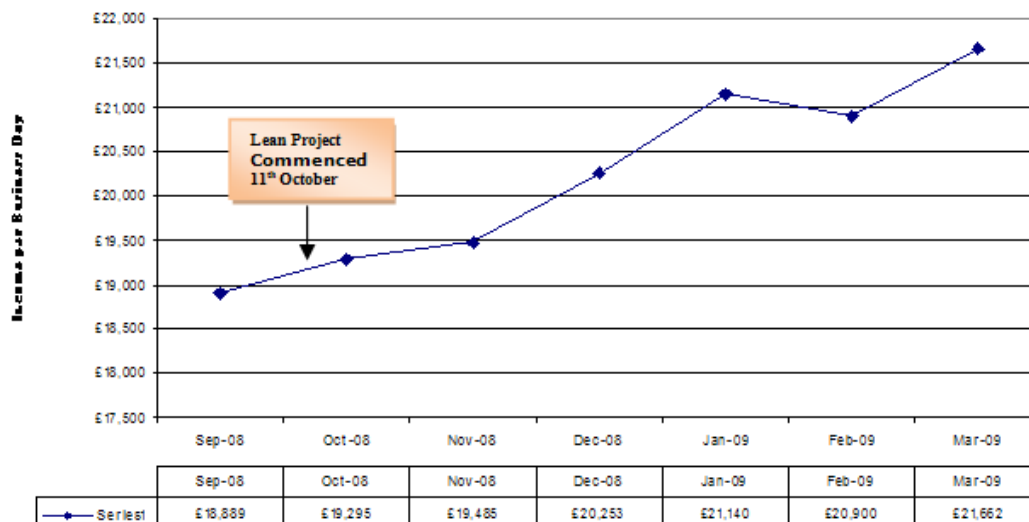
Several months on, Alturos conducted a thorough investigation and financial impact study of the system- wide benefits derived through the Lean Radiology programme. Bedford Hospital Trust's problem was that the Trust had no measure to value the activity of the Radiology department even though the Lean programme has identified major changes. The Trust had no methodology they could use to value the activity of the Radiology department and hence did not know whether the department was operating in deficit or was earning a surplus for the Trust.

As the COO put it: "We are investing a lot of pounds in Radiology, but are we getting a return?" The problems for patients of the Radiology department were the delays and the wasted appointments that were occurring as a result of inefficient processes. In turn the staff were dissatisfied with the lack of recognition of the progress that they were making in increasing the efficiency of the unit.

The financial impact study focused on all the modalities of the Radiology department. The Department employed some 58 whole time equivalent (WTE) staff including 34 Radiographers and eight Consultants.

132,000 tests were conducted in the year 2008/2009. The size of the budget was some £5.6 million.

Monthly Income per business day (at 2009 tariff rates)



However there was no financial measure of the output of the Radiology department, and so the Trust's management team was unable to quantify the significance of the improvement in activity being achieved.

A key development, which occurred during this project, was the introduction of new tariffs for radiology modalities as part of the unbundling of radiology services within the NHS system. The published tariffs for radiology were non-mandatory and accordingly, revised tariffs were negotiated by the hospital in March at the time that this review commenced. These new tariffs were adopted in the project as a measure of the value of outputs.

The financial impact study focused on both the macro and the micro position, calculated the pound value of activity prior to the Lean work and identified the value of the activity for each month during which the Lean work was in progress.

Another important "win" involved identifying a method for measuring, on a daily basis, the number of wasted appointments; reducing the number of wasted appointments was one of the major savings proposed by the Lean work.

Lean items which involved particularly original thinking included (a) the revised shift pattern which was redesigned to include flexibility not previously considered, (b) the concept of porters dedicated to the Radiology department on a full-time basis for part of their shift, and (c) the cannulation procedure which allowed the radiographers to remain with their patients throughout the whole

procedure of cannulation and CT scanning. The net financial gains from Lean in this department are £1.2 million.

Conclusion:

- Using an approach that extends beyond the pure tools and techniques of Lean is effective in improving diagnostic services such as radiology;
- The quality and financial benefits of this approach can be significant;
- This approach to Lean has positive benefits for staff morale and feeling about their work;
- The approaches used in this programme can greatly support radiology departments in light of the unbundling of radiology across the NHS and the move towards service line reporting.

Reaction's from patients (Local press)



Reactions from the Trust's management:

Carole Darnell – Radiology Manager (in post at the time)

“Lean arrived at our department doorstep from the Trust as a 'must do'. Timing wise we felt it could not have been worse as we were having so much thrown at us, so much demanded from us but little did we realise this was the tool we needed. We went into it very sceptical and came out of the first phase as believing it would work.

We knew before we went into Lean we had all the ideas within our staff and we were right, we just did not have the skills to bring them out. Some of our staff also did not have the confidence or the permission (as they felt) to use their voices. Lean has shifted the balance of power (power perhaps not quite the right word) from the managers and the consultants to all the staff - as they say it is a bottom up approach.

Our successes have been small things, larger things, some just do its, some longer term projects. They have happened, are happening and will continue to happen throughout the life of the department. It is all about empowerment and giving the staff their part in the responsibility of delivering the service again as they say doing, rather than being done to. It means that staff need to realise that they are the service and the future - not always comfortable for them or me.

I am conscious that we need to keep delivering and that is one of the challenges especially as the economic climate hits a down turn and we also need to keep celebrating our achievements. When Sue Whittaker and I went to an Lean event in London recently we realised we had done a lot compared with other Trusts who had much more resources than us - lots of dedicated staff, panels, meetings -great but not necessarily any better -it is the passion for change that will make it happen.

One of our most important changes and I thank you and Tim for this was changing the internal management structure of the department - giving the clinical director the authority to take decisions on behalf of his colleagues - the other Radiologists and also performance manage them if needed.”

Lisa Hunt – Chief Operating Officer (in post at the time)

“After the Value Stream event I had an email saying ‘we are on such a high, on such a buzz and have already implemented our first ‘let’s do it project’. That is what I’ve wanted and that is what I’ve got!”

