

Client: South Tees NHS Trust
Sector: Hospitals/Healthcare/Laboratories

Key tools or services: Value Stream Mapping, Demand Analysis, Lean Implementation

Requirement

James Cook Hospital, part of South Tees Hospitals NHS Trust, engaged the services of us to help improve processes in its Pathology department, with particular reference to MRSA testing. The volume of general test demands at the hospital had risen by 10% per annum and the directive that all patients admitted to hospital from March 2011 onwards must be screened for MRSA, would lead to a doubling of the existing workload.

We were tasked with helping the Trust to:

- > Save money
- > Increase productivity
- > Improve service
- > Remain competitive when tendering to the PCT
- > Reduce stress by making the tasks more manageable

It was felt that in achieving these goals, it would not only reduce absenteeism and staff turnover, but decreased turnaround times would also support targets for other departments in the hospital such as Accident & Emergency and cancer wards.

Response

A cross-functional team of six representatives from the Pathology department worked together with us to identify areas for improvement. The process began with a Value Stream Mapping exercise where every step of every activity in the MRSA pathway was recorded.

Next, Demand Analysis was performed, activities were videoed and reviewed and Standard Operating Procedures discussed. This thorough approach allowed the team to view the current situation in detail, including the times taken to perform each element.

Five core lean principles were then applied to the mix and the team was able to pinpoint activities which were wasteful in terms of time and resources and which did not add value to the overall service. Duplicated tasks were highlighted and eliminated and timing issues were addressed, with the result that the number of steps was reduced from 46 to 20, and the value-added aspect increased from 13% to 35%.

Central to achieving improved services within the Pathology laboratory was the issue of batching. Before our arrival, batch sizes for processing were typically 40 to 80 units, which slowed down the throughput of the procedure. We recommended smaller batch sizes for both processing and reading. As a result, lead times could be reduced and data and samples could be co-processed. This would have the benefit of improved quality and fewer mistakes going unnoticed.

We demonstrated how overall lead times could be improved by 84% through the elimination of the previous 'batch and queue' system. Instead, the sort process was streamlined by implementing 'pre-sorting'; and waiting time was reduced considerably by extending the processing cut-off time and timing incubation in conjunction with this. Previously, missing the cut-off time could mean a delay of upwards of 48 hours.

Laboratory layout was also considered, where recommendations included relocation of the pod delivery system together with raising awareness of the pod within wards. In addition, issues surrounding the current IT system and 'right first time' data entry were tackled.

Result

- > Distance travelled within the lab 61% improvement
- > Number of steps – 65% improvement
- > Value added – 270% improvement
- > Lead time – up to 84% improvement
- > People productivity – 30% improvement
- > Batch size processing – 100% + improvement
- > Batch size reading – 300% improvement
- > Floor space utilisation – 11.3% improvement
- > Floor space utilisation with doubling of demand – 127% improvement

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Dr Steve Duncan, Divisional Manager, Pathology, South Tees NHS Trust

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PICME Limited
Freeman House
Orbital 24
Oldham Street
Denton
Manchester
M34 3SU

Phone: 0161 304 5909
Fax: 0161 304 0000

Email: enquiries@picme.org
www.picme.org