Intensive Lean improvement event reduces patient pathway by 28%

The nature of patients presenting with hip fractures is such that they are likely to have an underlying ill health issue and with an ageing population the pressure on the healthcare system due to hip fractures is only set to increase.

This, coupled with the high mortality rate amongst patients with hip fractures (approximately 30% within 12 months), makes fractures of this nature a major public health issue.

The process by which such patients were admitted to hospital was an issue the City Hospitals Sunderland Hip Fracture Multidisciplinary Team (MDT) felt required urgent assessment and improvement.

The team decided to utilise Lean improvement processes to review their current ways of working and identify how improvements might be made to the patient pathway from presentation at A&E to subsequent follow-up.

Improving outcomes and experience for this group of patients was vital so the team started an improvement project with the aim of reducing the lead time from the diagnosis of a hip fracture in the A&E department to surgery.

Assessment of the existing process through the Define, Measure, Analyse, Improve and Control structure showed that the lead time for this pathway stood at 47 hours.

The improvement approach

The MDT used the City Hospitals Sunderland Production System - a management method and approach to continuously improve and strive to deliver their organisational goals of best quality, highest safety, highest morale, shortest lead time and being a cost leader.

City Hospital Sunderland Production System

An intensive improvement event was held over one and a half days to work through the process, identify the issues and propose solutions. Twelve individuals from across the pathway utilised process mapping of the current state to understand the process as it stood and the issues currently arising from that way of working.

The team then undertook a brainstorming exercise to generate ideas for resolving the issues arising from the mapping process and this information formed the basis of the future state
map identifying the need to reduce the pathway to 36 hours. They then sought opinions from colleagues, tested the potential solutions and evaluated the outcomes.

One of the areas identified for improvement was that a Neck of Femur (NoF) protocol for A&E needed to be developed to aid communication along the patient pathway with the aim of all patients:

- Being reviewed by an OrthoGeriatrician
- Having surgery within 36 hours of admission
- Having a falls assessment
- Being assessed for bone protection
- Having a MDT assessment

It was also identified that the standardisation of working for surgeons would reduce the length of stay for patients.

The objectives
To achieve the 36 hour target it was recognised that more collaborative working was required between A&E, radiology, the surgical ward, theatre, the care of the elderly clinicians and therapists. The objective of improving communication and team working between these groups of healthcare professionals was agreed upon.

The challenges
The nature of multi-disciplinary working meant that the greatest challenge to the improvement project was securing the participation of all stakeholders in the pathway, a varied and disparate group of clinicians.

Without representation and involvement from each service a comprehensive and robust review could not be achieved and any proposed solution ran the risk of omitting the requirements of any service unable to provide input into the new process.

In addition to this it was vital to secure senior sponsorship for the improvement project to ensure protected time could be secured for the development process and for gaining commitment to the delivery of the proposed solutions.

The sponsor was not only able to facilitate and manage the process effectively with so many stakeholders involved but also aid decision making and remove any barriers to efficient implementation of improvement measures.

The results
The improvement project run by the MDT has meant measurable improvements to the patient experience have been demonstrated. Firstly, a 30% improvement has been seen in the number of patients now completing the pathway in 36 hours or less (now 90%).

The new protocol for NoF aids communication along the pathway and is used 100% of the time.

Additionally, the standardisation of working for surgeons has enabled key milestones along the pathway to be achieved leading to a reduction in the length of stay for hip fracture patients of two days.

The improvements driven by this improvement project have now been sustained for four months.

Continuously improving
Review meetings were held at 30, 60 and 90 days to assess progress. Data collection and control charts have allowed the team to further analyse problems and identify opportunities for further improvement.

Additional work has seen a further improvement in patient experience

This work has led to a further reduction in the average lead time for patients with 97% now completing the patient pathway in 34 hours – a reduction in total pathway time of 28%.