Process Improvement Utilizing Lean: A success story from Oman

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Background

Royal Hospital mission to provide - as the largest Tertiary care institute in Oman- high level care with maximum efficiency and effectiveness ensuring high patient satisfaction and safety. Its vision to provide best quality healthcare with committed and motivated workforce. The Emergency Department of Royal hospital proudly upholds this mission and vision with the aim to smoothen patient flow and adopted Lean principles to remove wastes. The number of patients seeking medical care in the department exponentially rised over the last decade. Patients at the ED had to wait long hours starting from being allocated a bed, to being seen by an ED physician followed by lab investigations and awaiting their results to freqently waiting again for speciality consultations. The department was always overwhelmed with patient surges and prone to dissatisfied patients. The Lean process came as an innovated change to patients and staff alike. Lean tools were employed to identify waste and innovative process improvements were introduced leading to an exponential change in the patient flow in the ED[1]. The success was inspiring and results were measured with departmental Key Performance Indicators.

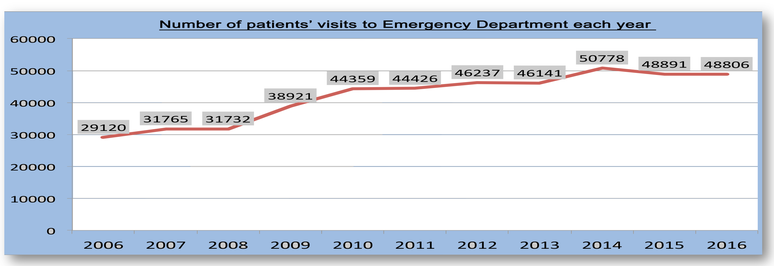
Objectives

The use of Lean principles and tools to identify wastes and implement innovative methods to improve patients' flow in the Adult Emergency Department of Royal Hospital.

Method

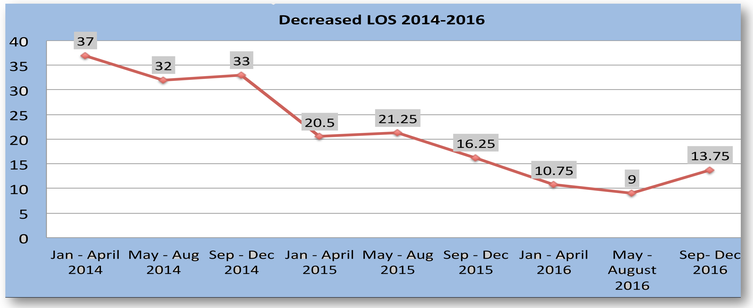
Qualitative research employed where Lean tools like Gemba walk used to identify value-added services and Muda. It was followed by value stream mapping of the process flow of patients through the Emergency Department using spaghetti diagrams. Innovative methods were implemented to smoothen the flow and fine-tuned through PDSA cycles. The outcomes were measured through monthly departmental key performance indicators.

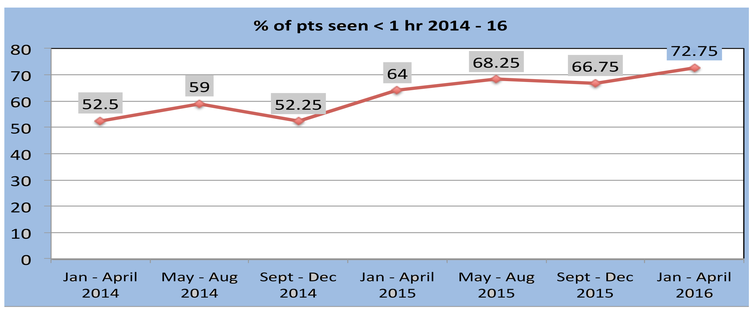
Results

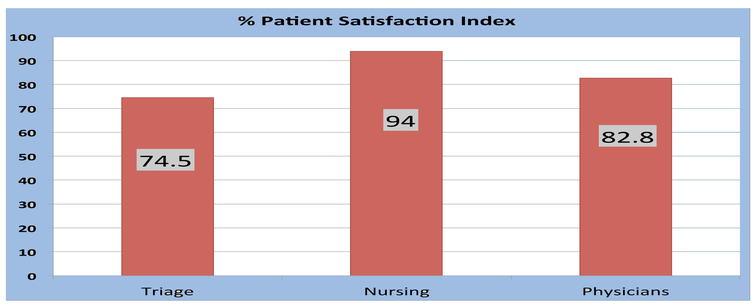


Results

Lean innovations introduced in the ED Oct 2014 to June 2016 showed remarkable improvements in the departmental KPIs. The Length of stay of patients that stayed in the department beyond 4 hrs went from 55 % in Oct 2014 to 12 % in April 2015. There was an increase of 20 % of patients seen by ED physician within an hour from presentation to ED. Compliance to patient safety during handover increased from 30 % to 90%. Adverse events remained constant with no identifiable change. Admission rate remained constant. The average troponin turnover time reached international benchmark of results being made available within an hour. A random patient survey showed high patient satisfaction rate of services provided in the ED. There was no change noted in admission rate.







Discussion

A long waiting time is a well-known dilemma that shrouds the ED and it is the most common complaint amongst the EDs in Oman and the world. Applying Lean tools to identify value added services and remove waste is the first step to improving quality care and smoothening process flow. This directly affects patients and outcomes, improves efficiency and reduces errors[2,3]. Innovative methods introduced in the ED were

1. Team triage – having a team compromising of a senior ED physician and 2 ed nurses at point of first medical contact station made an impressionable change to patients reflected positively in the KPIs
2. IV cannulation and blood collection at Triage showed effective improvement in turnover time and reduced Length of stay
3. Addition of short stay unit and chest pain unit brought about quick dispositions and improved bed availability as well as smooth flow in the ED
4. Digital dashboard enhanced constant monitoring and flow of patients in the ED round the clock

Conclusion

Patient flow process underwent a dramatic change with the initiation of innovative methods using Lean principles and tools. It resulted in eliminating waste and identifying value added services. The impact of change was seen in the improvement measures of the departmental KPIs and patient satisfaction survey. The biggest achievement of the Adult ED of Royal Hospital Oman was in the fact that less than 12 % of patients waited beyond 4 hrs for their treatment. A lean path to success in Oman's tertiary care services.

References

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3. Marian J Vermeulen Evaluation of an Emergency Department Lean Process Improvement Program to reduce Length of Stay Annals of Emergency medicine Nov 2014 Vol.64, Issue 5 427-438