Oman Medical Journal (2014) Vol. 29, No. 4:248-249
DOI 10.5001/omj.2014.66

Editorial

The Need For Lean Thinking In The Omani Health Care Sector

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Received: 18 June 2014 / Accepted: 25 June 2014

Herein presented is the premise that improvements can be made to the healthcare sector in the Sultanate of Oman by applying Lean thinking to deliver higher-quality healthcare to all citizens. Through the identification of lean readiness factors, lean improvement pilot projects can demonstrate context for successful implementation, and guide towards the development of a national strategy for implementing Lean in Oman's healthcare sector.

In most countries, healthcare spending has risen significantly over the past two decades as a result of growing and ageing population, the increasing expectations of stakeholders (especially patients), advances in medical technology and the complexities involved in responding to a variety of health conditions. In many OECD countries such as Australia, Canada and the United Kingdom, healthcare spending accounts for around 9% of GDP. In the USA, healthcare spending accounts for over 15% of GDP.[1] There is increasing pressure on governments and health authorities to redesign their delivery mechanisms to improve efficiencies and patient experience.

In response to the demands being placed on the health authorities/hospitals (in many cases under shrinking budgets); a growing number of hospitals (particularly in North America, the UK and Australia) are reporting the adoption of Lean practices with both tangible and intangible outcomes being achieved. Developed in the manufacturing sector, Lean (based on the Toyota Production System and refined over several decades) has been implemented by manufacturing and service sector organizations in various parts of the world (see for example[2-6]). Lean aims at delivering value by continually improving process flow through the elimination of non-value adding steps.

The most successful examples of Lean applied in the healthcare sector are the Virginia Mason Medical Centre in Seattle-USA,[7] the Royal Bolton Hospital in the UK[8] and the Flinders Medical Centre in Australia.[9] The Flinders Medical Centre in Australia was reported to be doing 15-20% more work after implementing Lean using the same infrastructure and staff.[9] Specific examples of pilot projects completed at Southern Health in Melbourne, Australia includes the introduction of communication boards, special vests (with the wording "DO NOT DISTURB, NURSE ON DRUG ROUND" on the back of the vest) worn by nurses when issuing medication to patients and the use of specially designed medication trolleys. These solutions resulted in increased efficiency (less time spent doing tasks) and quality (reduced unintended adverse outcomes).

In the case of the Sultanate of Oman, the Ministry of Health expenditure on healthcare in 2009 amounted to 329.7 million RO - increasing from 247.6 million RO in 2007. There were a total of 60 hospitals and 1,034 health centers/dispensaries/clinics operating in Oman in 2009 and nationally, there were 5,563 doctors, 12,012 nurses, 623 dentists and 1,087 pharmacists employed across the health sector.[10] Hence, there is considerable potential for making improvements at the national level, and research is ongoing that will examine the potential that Lean thinking has to deliver higher outcomes using the same resources/budget within the context of Oman.

Although Lean thinking applied in healthcare has delivered considerable benefits, research conducted in the USA, UK and Australia highlights the many challenges that hospitals face in its adoption. Most important is to identify are the readiness factors both nationally and locally at the hospital level. A recent study examining Lean in healthcare in Australia and the UK identifies five readiness factors critical for implementation.[5] These are:

1. Linking Lean with the overall strategy of the hospital.
2. Understanding the different customer groups that a ward, department or a hospital has and what is valued by each of these customer groups.
3. Taking an end-to-end process view when undertaking improvement projects.
4. Matching demand and capacity levels across the hospital.
5. Having trained staff, providing opportunity for them to be engaged in improvement activities/Lean projects and recognizing/rewarding their efforts.

Previous studies highlight the need to understand context. Oman is a unique case and the reported research, based largely in Western countries, cannot be simply applied in this context. In order to derive the level of readiness that exists for lean implementation

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in Omani hospitals, and potential improvements to be made, the readiness factors must be identified.

A series of interviews have already been held with government/Ministry officials, hospital administrators (Registrars, Hospital CEOs), healthcare professionals (doctors and lead nurses), and suppliers to hospitals (pharmaceuticals and general equipment) as part of an ongoing research project to understand both the complexities of the Omani healthcare sector and the potential for applying Lean thinking to achieve higher efficiencies and quality improvements. There were 40 interviews in total, recorded, transcribed, and analyzed using the NVivo qualitative software package for analysis to identify the themes emerging from the collected data. Through these interviews the readiness factors were identified, along with potential obstacles/challenges.

Knowledge of the existing level of readiness and potential challenges aids in the development of a national strategy for improving the health sector in Oman that is context specific. However, in order to deliver higher quality and more affordable healthcare, along with providing higher satisfaction for all stakeholders, the potential for applying Lean thinking in the Omani healthcare sector must be demonstrated and examined.

One hospital has been selected from the list of hospitals previously interviewed to conduct two separate lean pilot improvement projects. The hospital was selected based on analysis of existing readiness factors, and accessibility.

In order to begin the pilot projects ethical approval was sought and obtained and awareness was raised towards the benefit of applying Lean thinking in order to gain commitment from all levels through presentations and workshops committed for executives/senior administrators and 'front-line' staff. The workshops were required to conduct the necessary training on the tools and techniques of Lean (e.g., process mapping). During the workshops, front-line staff identified and designed improvement projects themselves based on lean principles to use lean tools and techniques. Two improvement projects to pilot lean will be completed in the hospital selected for the study.

From the pilot impact and outcomes (performance measures achieved) will be measured for each pilot project and it will be necessary to compare these to the outcomes achieved prior to the introduction to Lean. Further, data from the 'consumers' (patients) will be collected through patient interviews. Findings from the pilots will be analyzed and presented in an interim report scheduled to the Ministry of Health.

It is proposed that based on the experience gained from the pilot projects, a context specific, national Lean in healthcare strategy can be designed, and aligned with current Ministry of Health plans. In order to achieve this, a seminar will present the cumulative findings of the study and a discussion on the national Lean in healthcare strategy will be held to capture the opinions and views of all key stakeholders. Participants in this seminar will be selected in consultation with the Department of Health and will include individuals involved in the study.

The final report on the project will be presented to the Ministry of Health at the end of Year 3 of the research project. Academic papers that will cover all aspects of the project will be prepared for presentation at conferences and submitted for publication in peer reviewed journals.

In conclusion, Lean Thinking has been shown to be effective in reducing cost of healthcare operations in many countries. This project is to demonstrate how the principles of Lean Thinking can be applied to Oman's healthcare sector. The outcomes of this project can result in not only a more efficient healthcare system for Oman, but also one which improves the healthcare outcomes for residents of Oman.

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