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Implementing Lean Health Reforms in Saskatchewan

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A Provincial/Territorial Health Reform Analysis

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Abstract

Saskatchewan has gone further than any other Canadian province in implementing health system process improvements using Lean, a production line discipline that originated with the automobile industry. The goal of the Lean reform is to reduce waste and improve quality and overall health system performance by long-term changes in behaviour. Lean enjoys a privileged position on the provincial government's agenda because of the policy's championing by the Deputy Minister of Health and the policy's fit with the government's patient-centred care agenda. The implementation of reform depends on a major investment of time in the training and Lean-certification of key leaders and managers in the provincial health system. The Saskatchewan Union of Nurses, the union representing the single largest group of health workers in the province, has agreed to co-operate with the provincial government in implementing Lean-type reforms. Thus far, the government has had limited independent evaluation of Lean while internal evaluations claim some successes.

Aucune province canadienne n'est allée aussi loin que la Saskatchewan dans la mise en oeuvre de processus d'amélioration de son système de santé suivant 'Lean' (gestion allégée), un protocole de production né dans l'industrie automobile. L'objectif de la réforme Lean est de réduire le gâchis et d'améliorer la qualité et la performance d'ensemble du système en changeant les comportements sur le long terme. Lean occupe une place privilégiée sur l'agenda politique du gouvernement car il s'agit d'une politique portée par le Sous-ministre de la santé et qui coïncide avec la volonté du gouvernement de mettre l'accent sur les soins centrés sur le patient. La réforme est mise en oeuvre à travers un investissement important en temps pour former et certifier Lean les gestionnaires et dirigeants du système de santé de la province. L'Association des Infirmières et Infirmiers de Saskatchewan, le syndicat représentant le groupe le plus nombreux de travailleurs dans le domaine de la santé dans la province, a donné son accord pour coopérer avec le gouvernement provincial dans la mise en oeuvre de réformes inspirées de Lean. Le gouvernement n'a pas initié beaucoup d'évaluations indépendantes de Lean jusqu'à maintenant, mais les évaluations menées en interne semblent indiquer quelques succès.

1 BRIEF DESCRIPTION OF LEAN

Although many provincial health departments have initiated Lean-inspired process reforms to health care sectors (Fine et al. 2009), no provincial government in Canada has invested as heavily or focused as comprehensively on Lean as the Saskatchewan government. Lean began to be applied to some health care services in 2008, but it has become a government-wide reform since 2010. The provincial ministry of health has retained a consultant, John Black & Associates, to provide an extensive suite of training for health care providers (including physicians), managers and staff, while the Saskatchewan Health Quality Council issued a request for proposals for the evaluation of Lean initiatives in the province.

Originating as a production line discipline (the ‘Toyota Production System’ or TPS), the term eventually embraced process improvements involving inventory management (Just-In-Time, JIT, and *Kanban*, a signaling process to support JIT), waste reduction (5S), and quality improvement techniques (Six Sigma). Since the mid-1990s, Lean ideas began to be exported to sectors beyond manufacturing, including health care (de Souza 2009). In particular, the Virginia Mason Medical Center’s application of Lean “became the catalyst for Lean healthcare” in other health systems, particularly in the United States and the United Kingdom (Wood 2012, 28).

Releasing Time to CareTM(RTC) was one of the first Lean process improvements in Saskatchewan: it was originally aimed at improving the quality of care and reducing waste in hospital-based nursing units in acute care facilities. RTC was originally developed in the English National Health Service (NHS Institute for Innovation and Improvement 2010a, 2010b), and first adapted to the Saskatchewan environment in 2008. By 2012, RTC had been implemented in all hospitals in the province.

In addition to establishing Lean offices—also known as Continuous Improvement or *Kaizen* Promotion offices—across the province, the provincial Ministry of Health has said it will have 250 leaders undertaking learn-by-doing Lean certification and 500 staff engaged in rapid improvement events by 31 March 2013. As part of this overall Lean reform, all major capital projects require Lean principles to be used in the design of the proposed facilities. In addition, Lean tools and techniques are beginning to be integrated into the Shared Services Initiative, a province-wide effort to consolidate the back office functions in all of the province’s regional health authorities.

2 GOALS OF REFORM

The stated goal of Lean is to reduce waste, improve health care performance and improve quality. In the 2008-09 budget process, the Saskatchewan Ministry of Health presented a document that drew on the (US-based) Institute for Healthcare Improvement’s framework for reducing waste and improving performance, in particular as it has been applied to hospital care (IHI 2005; Graban 2009). In its report, the Ministry stated that its operating

budgets in targeted areas could be reduced from 1% to 3% through the reduction of waste while improving performance and the quality of care.

To facilitate cooperation by health care managers and providers along with their professional and union organizations, however, the Ministry of Health has stated that there will be no job losses. Although positions may be eliminated as a consequence of Lean reforms, employees and providers will be shifted into similar jobs in other areas by affected regional health authorities, health care organizations or the Ministry. In addition, in its public communications about Lean initiatives, the Saskatchewan government has tended to emphasize improvements to quality and the patient experience more than cost cutting. Nonetheless, there appears to be a high expectation within the provincial government that the Lean initiative is the best way in which to bend the health care expenditure cost curve in the long term. Table 1 summarizes the main Lean initiatives in Saskatchewan and the desired goals.

Table 1: Lean Health Service Initiatives in Saskatchewan

LEAN INITIATIVE	STATED GOALS	TIME PERIOD	EVALUATION
Releasing Time to Care TM in Saskatchewan	Change workflow patterns to free up nursing time for direct patient care in acute settings. Improving efficiency, patient safety, reliability of care, the patient experience and staff well-being.	2008–2012	Independent evaluation by an international research team in conjunction with the Saskatchewan Health Quality Council to be conducted in 2013.
Disease Control Laboratory Materials Management	Standardize and improve materials and inventory at the provincial disease control laboratory.	2008–present	Evaluation yet to be conducted. Ministry of Health states that inventory has been reduced by 20% (\$500,000) and reordering time has been reduced by 50%.
Vaccine Management Plan	Standardize and improve inventory management of vaccine products to reduce waste. At least some of the money saved will be used to cover pandemic related costs.	2008–present	Evaluation yet to be conducted. Ministry of Health states that almost \$1.3 will be saved.

Blood Products and Plasma Use	Standardize method for setting blood inventory levels in hospitals to reduce waste, ensure availability of fresh blood products and ensure more appropriate use of products.	2010–present	Evaluation yet to be conducted. Ministry of Health claims \$10 million saved and 17% improvement in discard rate for units of red blood cells.
Capital Improvements	Streamlining capital planning in order to eliminate waste, embed Lean into project planning and design to ensure more patient-oriented space.	2011–present	Evaluation yet to be conducted. Ministry of Health states that Lean design saved \$29 million for Children’s Hospital of Saskatchewan. Expected benefits to Moose Jaw Hospital include: 35% reduction in space, 25% less energy use, 50% improvement in patient movement and 19-27% reduction in operating and capital costs over 20 years.
Shared Services Laundry Transportation System	Standardize infection prevention and control procedures in hospital linen processing, handling and transportation	2012–present	Evaluation yet to be conducted. Shared Services Saskatchewan (3sHealth) claims 61% reduction in returned linen.

3 FACTORS THAT INFLUENCED ADOPTION OF REFORM

There is virtually no documentation concerning how or why Lean came on the government’s policy agenda. Based on timing, however, two events stand out. The first was the appointment of Dan Florizone as deputy minister of health. Mr. Florizone was a personal proponent of Lean methods, having initiated a major Lean initiative in the main hospital of the health region where he had been chief executive officer before his appointment as deputy minister. Florizone’s positive experience with the methodology made him a champion for Lean methods in the provincial government, and he was eventually assigned as lead deputy minister for the government-wide Lean initiative. Lean became a policy priority for the provincial government while initiatives fit closely with the provincial government’s stated agenda of bending the cost curve in health spending while improving the quality and patient-centred

focus of health services, which emerged from the provincial Patient First Review in 2008-09 (Saskatchewan Health 2009).

Another factor that stands out is the extent to which the Saskatchewan Ministry of Health followed developments in the NHS. In 2008, the ministry led a Saskatchewan health system study tour to England, the highlight of which was the NHS Institute for Innovation and Improvement where the NHS presented results from its Lean initiatives including RTC.

4 HOW REFORM WILL BE ACHIEVED

The provincial government is relying on three major factors to achieve the objectives of the reform: 1) extensive spread, 2) intensive training and 3) long-term changes in behaviour.

Lean methods have already been applied to numerous units and departments in all of Saskatchewan's larger hospitals as well as a majority of its medium-sized facilities. In addition, there is a plan to spread Lean to other institutions as well as some community care and primary care organizations. All regional health authorities (RHAs) will be directly affected by the consolidation of back office functions such as payroll, laundry, information and communications technologies and specialized human resource functions—previously operated by individual RHAs—in a single organization known as 3SHealth as part of a provincial-wide shared services initiative.

A significant number of RHAs, Saskatchewan Health Quality Council and other health system personnel have already been involved in a Lean initiative. More importantly, the Ministry of Health (and its system partners) has retained a Lean consulting firm to conduct Lean certification and provide Lean methodology expertise for health care managers and providers throughout the province. By April 2013, the Ministry of Health estimated that 240 personnel have devoted a minimum of 80 hours in a one-year period to frontline Lean initiatives to attain their certification. The Ministry of Health's target is to have 880 personnel Lean-certified out of 530 Ministry personnel and a further 20,000 employees working for the two largest health regions in the province.

The general belief by government officials and the cabinet is that participation in Lean initiatives and Lean-certification has produced, and will produce, fundamental changes in behaviour. In particular, Lean-educated managers and providers will approach their daily tasks with an eye to continuously improving staffing, clinical quality, patient flow, and the supply chain as well as reducing waste in all these areas. Key officials also believe that the reform will be sustained or locked-in once a critical mass of the health system's workforce realize the importance of continuous improvement to the quality of care, the patient experience and the fiscal sustainability of publicly funded health care.

5 HISTORY AND CONTEXT

- Lean methodology appears to have come to the attention of Saskatchewan decision-makers through the Institute of Healthcare Improvement in the United States (IHI 2005).
- In November 2007, the Saskatchewan Party government under Premier Brad Wall was elected for the first time, and promises to bring more business-oriented approaches to government.
- In September 2008, a delegation made up of the Minister of Health, the Deputy Minister of Health, senior Health Quality Council staff, regional health authority executives, and key leaders from the nursing unions and regulatory bodies, went to England to learn about the RTC program (Coutts 2010).
- In November 2008, RTC was tested in the medicine unit at the Union Hospital in Moose Jaw, and the oncology ward at the Pasqua Hospital in Regina, followed by similar efforts in 14 hospital units and wards in eight Saskatchewan cities (Saskatchewan Health Quality Council 2009).
- In November 2008, the Saskatchewan Minister of Health launched the Patient First Review headed by Tony Dagnone with a mandate to help the provincial government improve the patient experience and obtain better value in health care delivery and system administration. Released a year later, the Commission report recommended the use of Lean-type methodologies to achieve better value for money in health care delivery and administration (Saskatchewan Health 2009).
- The 2012-14 collective agreement between the Saskatchewan government and the Saskatchewan Union of Nurses (SUN) included a promise by SUN to cooperate with the government and RHAs on Lean initiatives.
- In March 2012, the Ministry of Health released a strategic plan that emphasizes the centrality of Lean initiatives to transform health care delivery and administration in Saskatchewan, including the identification of five areas targeted for breakthrough, including: transforming the surgical patient experience; focusing on patient and staff safety; and identifying and providing services through a single shared services organization (Saskatchewan Health 2012).

6 EVALUATION

It is far too early to assess the impact of the Lean reforms in Saskatchewan. In 2013, there will be an independent evaluation of one Lean reform—Releasing Time to CareTM—that started at the end of 2008. Funded by the Canadian Institutes of Health Research (CIHR), this evaluation will examine the impact of RTC on patient outcomes and the quality of work life for nurses. While the Ministry of Health’s Lean consultant is considering external reviews, it is unclear at this time whether any independent Lean evaluation will occur in Saskatchewan. To a considerable extent, the Lean reforms rely on labour peace, which

has been supported in particular by generous settlements with nurses and physicians such that Saskatchewan nurses receive the highest remuneration and Saskatchewan doctors the second highest remuneration relative to their counterparts in other Canadian provinces. The ability to afford such high remuneration depends on the revenues and royalties generated by high energy and resource prices over the past decade. Should energy prices plummet and revenues drop, it would be difficult to continue this policy of high provider remuneration and retain support for future Lean initiatives. It seems too that the Lean initiatives have been focused on health services that are most similar to a factory-type production process and less so to community settings where the production of health services is spread over a much more diverse set of conditions, and it may not be reasonable to expect the same degree of efficiency improvements in these non-hospital settings.

7 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

Table 2: SWOT Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ● Political support for Lean reforms ● Support by key labour organization (Saskatchewan Union of Nurses) ● Provincial-wide reach of reform ● Willingness to invest heavily 	<ul style="list-style-type: none"> ● Considerable time required for Lean training by all participants ● Lack of direct engagement of organized medicine ● Lack of direct incentive to employees to apply Lean principles in day-to-day tasks
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ● Involves fundamental process changes that can induce long-term behavioural changes ● May achieve cost savings without sacrificing (or perhaps even improving) quality ● Emphasis on putting patients first may ultimately improve patient experience 	<ul style="list-style-type: none"> ● Failure in any individual Lean initiative may undermine support for Lean reform more broadly ● Sizeable investment in human resource training may become untenable ● Exit of key Lean champions from provincial government may undermine support for initiative

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9 FOR MORE DETAIL

9.1 Media releases and newsletters

Saskatchewan government news release on application of Lean to all operations. <http://www.gov.sk.ca/news?newsId=692212b2-d7eb-47dd-a754-70bedc60f899>

Regina-Qu'Appelle Health Region newsletter issue on Lean. http://www.rqhealth.ca/inside/publications/elink/pdf_files/elink_25oct12.pdf

9.2 Government reports and documents

Saskatchewan Ministry of Health introduction to Lean. <http://www.health.gov.sk.ca/lean-introduction>

Saskatchewan Health Quality Council backgrounder on Lean. <http://hqc.sk.ca/improve-health-care-quality/lean/>

Saskatoon Health Region on Lean. <http://www.saskatoonhealthregion.ca/lean/>

Saskatchewan Health Quality Council on Releasing Time to CareTM initiative. <http://hqc.sk.ca/improve-health-care-quality/releasing-time-to-care/>

9.3 Contact

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9.4 Academic literature

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