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New development: 4P recommendations for implementing change, from research in hospitals

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How are hospital staff involved in process improvement initiatives such as Lean? What can we learn from Lean implementation experiences about the sustainability of such initiatives? The authors considered such questions in a study of workplace change in Australia and Canada. They found that Lean is more likely to be sustained when leaders adopted the 4P recommendations presented in this article.

Keywords: Australia; Canada; Lean; Process improvement; Public hospitals; Workplace change.

Introduction

Process improvement (PI) methodologies such as Lean are being used increasingly in healthcare (Poksinska, 2010; Radnor, 2011; Bamber *et al.*, 2014). However, evidence for the effectiveness of Lean in healthcare is mixed (Radnor and Boaden, 2010; Leggat *et al.*, 2015).

The public hospital context is hierarchical, with strong professional influence over how work is done (Adler and Kwon, 2013). Standardized routines are not always appropriate for patient care. Hospitals serve people (patients) who may be ill, anxious or vulnerable (Leatt and Porter, 2003; Kahn, 2005, p. 4). It is difficult for patients to self-advocate or evaluate care quality. This context makes it challenging to implement innovations derived from outside healthcare (Leggat, 2008).

Clinical staff are highly-trained professionals who do complex work in specialized units (Radnor and Bateman, 2016). They tend to focus on patient care within their unit, rather than the wider organization. Waring and Bishop (2010) show how clinicians 'can corrupt, game and capture attempts at reform' to maintain influence or counter other people's interests. Such institutional and occupational demarcations complicate PI efforts in hospitals (Leggat *et al.*, 2008).

Both Australian and Canadian public hospital systems have experienced repeated reorganizations (Reay and Hinings, 2005; Leggat, 2011), and government budget demands for higher quality services with fewer resources. Both jurisdictions saw Lean as having the potential to improve operational efficiency and achieve government targets. This study explored the implementation of five Lean projects in two hospitals in Canada and one large hospital in Australia. While much of the PI literature is focused on organizational outcomes, we explore implementation from the perspectives of staff. Given the issues identified above, we set out to answer three questions:

- How are staff involved in PI using Lean?
- How do staff respond to changes in their work practices and processes through Lean?
- What can we learn from the implementation of Lean interventions in Australia and Canada that can inform future staff engagement in PI?

Research methods

This study began in 2010 and continued through 2016. Researchers in Australia and Canada used qualitative methods, including semi-structured interviews, documentation analysis and report-back sessions. Triangulation of data sources increased validity. A mix of interviewees from different roles reduced potential biases. Interviews were audio-recorded with the interviewees' permission. There were 144 formal interviews

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with 125 interviewees, 57 in Canada and 87 in Australia. There were five Lean projects: two emergency department projects; a whole-of-hospital project; a specialist service project; and a 'productive ward' project (inspired by a model developed by the UK National Health Service Institute for Innovation and Improvement).

We sourced interviewees through snowball sampling, first identifying key stakeholders who nominated others with valuable insights. Initially, this was senior managers but progressed to include middle managers and staff. Most middle managers had a clinical background. Proportions of managers and health professionals were similar in both countries. It was more difficult to source doctors, and PI/quality improvement consultants were over-represented. A few state and provincial-level PI specialists and union people were included. We included both Lean detractors and advocates.

Findings and discussion

Staff involvement and control

We found many similarities between the Lean initiatives and participant perceptions across the two countries. Many interviewees were positive about the whole-of-hospital approach, especially when accompanied by well-executed training and engagement strategies, and reported key benefits of Lean as enhanced communications and relationships across departments.

Many interviewees indicated they had improvement ideas before Lean, but these had been blocked by hierarchy. These people saw Lean as not only providing a view of what was working well and what wasn't, but also a mechanism to make improvement suggestions. The Institute for Healthcare Improvement (IHI) identifies *escalation* as an important driver for healthcare quality improvement (Scoville *et al.*, 2016). We found Lean was a mechanism for escalation, especially when staff were frustrated by managers' lack of attention to their suggestions.

We found top-down and bottom-up implementation. Some interviewees complained that top-down approaches did not capitalize on their knowledge and skills; however, staff participating in bottom-up interventions felt they had been consulted and retained control. Similar to others' research (for example Parker, 2003; Stewart *et al.*, 2010), participants were more positive about Lean when they perceived they retained some control over their work. We infer that participation should not be *token*, but *real*, giving people opportunities to influence the redesign of their work (Leggat *et al.*, 2015).

Those leading top-down approaches should ensure that effective participation is built in. Berwick stresses the need for hospital managers to trust hospital staff to 'become citizens in the improvement of their own work' (Berwick, 2003, p. 449). A systematic review conclusion (Scott, 2009) reinforces that clinician and patient-driven improvements are more effective than manager-driven improvements.

In both countries, staff perceived lower expectations for participation by doctors. This was described as unfair and demotivating. Interviewees suggested, however, that funding was often inadequate to include doctors. Where doctors do not participate, Lean is unlikely to be successful (Leggat *et al.*, 2015). There were doctors in both countries who saw the benefits of Lean and became champions. In one Australian project, when extra resources were provided for a doctor-led initiative, these doctors felt able to combine their agenda with the Lean projects and support them. In Canada, while some doctors initially endorsed Lean, this was subsequently undermined by lack of resources. All players should be involved in Lean analysis, planning and implementation (Mansar and Reijers, 2007). People were concerned that 'Lean' implies doing more with less, suggesting Lean jargon may be alienating. At the outset, staff tended to fear work intensification (Stanton *et al.*, 2014) and job loss. Staff participation depends on being allocated time. In practice, role 'backfilling' was rare, and staff are generally reluctant to spend unpaid time on Lean. The hospitals have all experienced periodic budget cuts and various managerial fads, so staff are understandably cynical about change that tries to serve more patients with fewer resources.

Subsequently, we found that where staff had a good, trusting relationship with their manager, they were less apprehensive and more willing to participate. This is consistent with Pfeffer's (1994) conclusion that a high-quality relationship between employees and managers positively influences employees' commitment to change. The IHI also sees this as a primary driver of quality improvement (Scoville *et al.*, 2016), which follows research suggesting managers and leaders need to ensure 'psychological safety' for staff participation in quality improvement (Nembhard and Edmondson, 2006).

Holmemo and Ingvaldsen (2015) point out that middle managers are often bypassed,

weakening PI implementation. Interviewees indicated top-down approaches were more likely to bypass middle managers, a risk to successful implementation. We found the difficulty some managers had in presenting a vision for Lean was the strongest barrier to engagement.

Similarly, poor relational skills of change consultants and leaders detracted from staff engagement. Interviewees described the best Lean leaders as 'the glue' that held the innovation together. The availability of Lean expertise is essential to its success, but needs to be coupled with strong people skills and participation (Fine *et al.*, 2009).

Most participants found Lean data collection and analysis techniques useful. A recurring theme was that when managers were perceived by their staff as being ineffective, or the managers themselves recognized that they had limited management skills, Lean training provided useful tools that could help counter such limitations. However, the view was that Lean training and education is not a sustainable alternative for adequate management skills.

There was some confusion about when quality improvement techniques should be used and when Lean resources and techniques should be used. One person suggested that quality improvement had become synonymous with accreditation, while Lean teams got to do 'the glamorous side of things'.

Sustainability

Some managers commented that it was difficult to sustain new practices, identifying that these should be reinforced by policy and procedure, supporting tools, and revised position descriptions. This echoes the findings of a systematic review (Leggat *et al.*, 2015). Other managers felt Lean processes helped sustain changes if they fostered employee involvement. This is consistent with earlier research suggesting that health professionals sustain practices that make sense to them, make their work easier and/or improve patient care (Timmons *et al.*, 2014). Despite much evidence for communicating explicit goals and the strategy to achieve them (Dixon-Woods *et al.*, 2014), no-one felt that their organizations had clearly communicated how Lean assisted the hospitals in meeting goals. Managers who were positive about Lean indicated that it helped them do their job better. For example, Lean provided a mechanism by which they could spend more time with staff. Unfortunately, the downside was that they often put in their 'own time' to accomplish other job requirements.

This may be representative of a substantial difference between implementation of Lean in private sector enterprises compared with hospitals and public sector organizations (Radnor and Bateman, 2016). In the private sector, there may be potential for greater investment in Lean. In the public sector, without explicit government support, there are rarely any resources to spare. Even with additional external funding, this is usually insufficient to implement a whole-of-organization, all-of-the-time approach. Senior managers did not seem to make a long-term commitment in either country. Interviewees consistently suggested that workload increases were unlikely to be sustainable, consistent with previous research in healthcare (Timmons *et al.*, 2014).

Nearly all interviewees stressed the need to ensure accurate and valid data were available to Lean participants, and that participants had the skills to use this. Such 'visual management' feedback should be continuously available to guide activities (Scoville *et al.*, 2016, p. 12). Australian participants suggested information systems were inadequate, although the organization had recognized and was addressing this. In Canada, information systems seemed adequate, but in both countries, it was a challenge to link performance data with patient-focused data.

Staff skills and organizational strategy

Managers, including patient care managers, must be well equipped to lead change, with relevant skills and appropriate organizational strategies (Duncan and Warden, 1999; Morgan and Zeffane, 2003; Scoville *et al.*, 2016). While managers seemed conscientious, many interviewees mentioned managers' inadequate leadership skills. Nonetheless, when interviewees reported successful projects, they related these to individual leaders, usually local leaders who 'made it happen, despite the obstacles'.

A concerning finding was that few interviewees spoke about patient involvement in Lean or its potential to improve *patient care*. Those who did mention 'patients' and 'quality of care' were torn between their duty of care and their impression that Lean experts saw patients as 'products'.

Apprehensions about the dichotomization of efficiency and quality in policy have been raised by others (Nugus and Braithwaite, 2010), with the message that health professionals may not distinguish between efficiency and

quality in their work. This suggests that Lean must therefore focus to a greater extent on the interaction between quality and productivity/efficiency indicators.

Recommendations

Our findings summarized above lead us to make four recommendations to implement Lean (and associated techniques) in hospitals sustainably. Although there is no simple formulation to guarantee success (Bhasin, 2012), these recurring themes inform our 4P strategic guidelines:

(1) *Plans are widely communicated outlining how the organization will achieve high-quality care through continuous improvement at points of care*

While Lean projects have a beginning and an end and can be accomplished relatively quickly, senior managers need to structure and promote these projects as components of a continuing, well-designed and resourced change-management plan designed to meet strategic organizational goals. All staff need to understand how Lean and quality improvement fit the organizational strategy, and understand their specific role in continuous improvement. This requires senior managers to ensure a visible link between goals, measures and targets related to efficient operations, and quality of care. Change management must specifically engage middle managers and front-line staff.

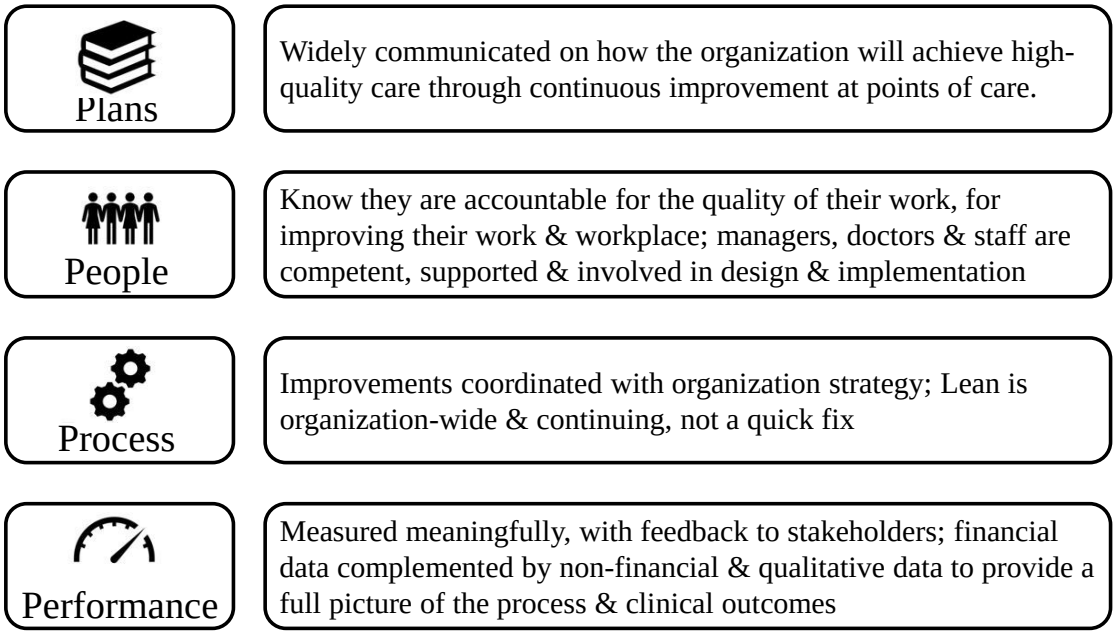
(2) *People know they are being held accountable, and are supported, not just for the quality of their work, but for continually improving their work and workplace*

While many managers' skills to lead change were deficient, this was sometimes addressed in the short-term through Lean training. However, there is a need to ensure that managers are competent and involved in the long term. Doctors need to be supported to participate as enthusiastically as other staff, through targeted resource allocation. Once Lean PI methods are embedded, organizational systems and structures must continue to support the sense of control achieved through process redesign. There was little union involvement in the PI interventions, except to enforce contractual terms, where there were perceptions they had been breached. Given the potential for substantial changes in work organization, there may be opportunity for greater labour-management collaboration.

(3) *Process improvement using Lean is a continuing investment*

It is challenging to implement Lean in public healthcare as it has been practised in manufacturing. Resource constraints mean it is often approached at a micro level, and not as the organization-wide holistic approach envisioned by the creators (Bhasin, 2012). Senior managers should approach Lean as a continuing strategic investment, as it requires a well co-ordinated organization-wide approach embedded in work standards, position descriptions, performance-management policies and procedures, training

Figure 1. The 4Ps of successful process improvement.



and organizational development. Lean champions need to facilitate integrated action among interdependent units and service departments (for example pharmacy, radiology and laboratory services).

(4) *Performance is measured meaningfully, with regular feedback to stakeholders*
Lean focuses on defining measures, data and targets to be achieved. Participants need to be supported to expand data collection and analysis beyond traditional metrics. Financial data must be complemented with non-financial and qualitative data to provide a full picture of the process and clinical outcomes that is of value to multiple stakeholders.

Limitations
This article is constrained by tight space limits, so is only a summary of a large research project. The nuances cannot be reported in such a short article. Nevertheless, bearing in mind that our findings are reasonably consistent with those of other studies, we are confident that we accurately report the perspectives of the people involved in both countries.

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References
Adler, P. S., and Kwon, S. W. (2013), The mutation of professionalism as a contested diffusion process: clinical guidelines as carriers of institutional change in medicine. *Journal of Management Studies, 50,* 5, pp. 930–962.

Bamber, G. J., Stanton, P., Bartram, T. and Ballardie, R. (2014), Human resource management, Lean processes and outcomes for employees: towards a research agenda. *International Journal of Human Resource Management*, *25*, 21, pp. 2881–2892.

Berwick, D. M. (2003), Improvement, trust and the healthcare workforce. *Quality and Safety in Health Care, 12*, 6, pp. 448.

Bhasin, S. (2012), An appropriate change strategy for Lean success. *Management Decision, 50,* 3, pp. 439–458.

Dixon-Woods, M. *et al.* (2014), Culture and behaviour in the English National Health Service: overview of lessons from a large multimethod study. *BMJ Quality and Safety, 23*, pp. 106–115.

Duncan, E. A. and Warden, G. L. (1999), Influential leadership and change environment: the role leaders play in the growth and development of the people they lead. *Journal of Healthcare Management, 44*, 4, pp. 225–268.

Fine, B. A., Golden, B., Hannam, R. and Morra, D. (2009), Leading Lean: a Canadian healthcare leader's guide. *Healthcare Quarterly, 12*, 3, pp. 32–41.

Holmemo, M. D. Q. and Ingvaldsen, J. A. (2015), Bypassing the dinosaurs? How middle managers become the missing link in Lean implementation. *Total Quality Management and Business Excellence*, *27*, 11–12, pp. 1322–1345.

Kahn, W. (2005), *Holding Fast. The Struggle to Create Resilient Caregiving Organizations* (Brunner-Routledge).

Leatt, P. and Porter, J. (2003), Where are the healthcare leaders? The need for investment in leadership development. *Healthcare Papers, 4*, 1, pp. 14–31.

Leggat, S. G. (2008), Operations management: the search for value in healthcare organisation and performance. In Iedema, R. and Sorenson, R. (Eds), *Managing Clinical Processes in Health Services* (Mosby Elsevier), pp. 21–34.

Leggat, S. G. (2011), The public hospital system in Australia. In Willis, E. *et al.* (Eds), *Working in the Australian Health Care System* (Elsevier).

Leggat, S. G., Bartram, T., Stanton, P., Bamber, G. J. and Sohal, A. (2015), Have process redesign methods, such as LEAN, been successful in changing care delivery in hospitals? A systematic review. *Public Money & Management, 35*, 2, pp. 161–168.

Leggat, S. G., Stanton, P. and Bartram, T. (2008), Exploring the link between people management and patient safety in Australian public hospitals. *Health Services Management Research, 21*, pp. 32–39.

Mansar, S. L. and Reijers, H. A. (2007), Best practices in business and process redesign: use and impact. *Business Process Management Journal, 13*, 2, pp. 193–213.

Morgan, D. and Zeffane, R. (2003), Employee involvement, organizational change and trust in management. *International Journal of Human Resource Management, 14,* 1, pp. 55–75.

Nembhard, I. M. and Edmondson, A. C. (2006), Making it safe: the effects of leader inclusiveness

and professional status on psychological safety and improvement efforts in health care teams. *Journal of Organizational Behaviour, 27*, pp. 941–966.

Nugus, P. and Braithwaite, J. (2010), The dynamic interaction of quality and efficiency in the emergency department: squaring the circle? *Social Science and Medicine, 70*, pp. 511–517.

Parker, S. K. (2003), Longitudinal effects of Lean production on employee outcomes and the mediating role of work characteristics. *Journal of Applied Psychology, 88*, 4, pp. 620–634.

Pfeffer, J. (1994), *Competitive Advantage Through People: Unleashing the Power of the Workforce* (Harvard Business School Press).

Poksinska, B. (2010), The current state of Lean implementation in health care a literature review. *Quality Management in Health Care, 19*, 4, pp. 319–329.

Radnor, Z. and Bateman, N. (2016), The development of a new discipline—public service operations management. *Public Money & Management, 36*, 4, pp. 246–248.

Radnor, Z. and Boaden, R. (2010), Lean in public services—panacea or paradox? *Public Money & Management, 23*, 1, pp. 3–7.

Radnor, Z. (2011), Implementing Lean in health care: making the link between the approach, readiness and sustainability. *International Journal of Industrial Engineering and Management, 2*, 1, pp. 1–12.

Reay, T. and Hinings, C. R. (2005), The recomposition of an organizational field: health care in Alberta. *Organization Studies, 26*, p. 351.

Scott, I. (2009), What are the most effective strategies for improving quality and safety of health care? *Internal Medicine Journal, 39*, pp. 389–400.

Scoville, R., Little, K., Rakover, J., Luther, K. and Mate, K. (2016), *Sustaining Improvement* (IHI).

Stanton, P., Gough, R., Ballardie, R., Bartram, T., Bamber, G. J. and Sohal, A. (2014), Implementing Lean management/Six Sigma in hospitals: beyond empowerment or work intensification? *International Journal of Human Resource Management, 25*, 21, pp. 2926–2940.

Stewart, P., Danford, A., Richardson, M. and Pulignano, V. (2010), Workers' experiences of skill, training and participation in Lean and high performance workplaces in Britain and Italy. *Employee Relations, 32*, 6, pp. 606–624.

Timmons, S., Coffey, F. and Vezyridis, P. (2014), Implementing Lean methods in the emergency department: the role of professions and professional status. *Journal of Health Organization and Management, 28*, 2, pp. 214–228.

Waring, J. J. and Bishop, S. (2010), Lean healthcare: rhetoric, ritual and resistance. *Social Science and Medicine, 71*, 7, pp. 1332–1340.

IMPACT

We summarize contemporary research on Lean implementation in Australian and Canadian public hospitals. Our 4P recommendations should be helpful for policy-makers and managers. Lean (and associated techniques) are much more likely to be sustained if:

- **Plans** have been widely communicated outlining how the organization will achieve high-quality care through continuous improvement at points of care.
- **People** know they are being held accountable, and are supported, not just for the quality of their work, but for improving their work and workplace; managers, doctors and other staff are competent and involved in design and implementation.
- **Process** improvements are co-ordinated with organization strategy; improvement using Lean is organization-wide and a continuing investment, not a quick fix.
- **Performance** is measured meaningfully, with regular feedback to stakeholders; financial data is complemented with non-financial and qualitative data to provide a full picture of the process and clinical outcomes.