

Engaging Professionals in Sustainable Workplace Innovation: Medical Doctors and Institutional Work

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This paper investigates the role of medical professionals in the success and longevity of the implementation of workplace innovation and organizational change in the Accident and Emergency (A&E) Departments of two large public hospitals, in Australia and Canada, during the introduction of process improvement using Lean Management (LM) methodologies. We ask why and how doctors resist, influence or enable LM initiatives in health-care. Using a qualitative methodology, we contribute to institutional work theory by unpacking the complex forms of boundary and practice work undertaken by key actors who effectively use their professional status and power to enable practice changes to be embedded. Our findings lend support to the importance of the involvement and ownership of senior doctors in the design, introduction and implementation of successful workplace innovation and organizational change. Senior doctors use their professional expertise, positional and political power at the industry, organization and workplace levels to influence strategically the use of resources designated for workplace innovation to improve efficiencies, quality of patient care and maintain their dominance. The significant organizational change achieved reflected the ownership and leadership of the workplace innovation by senior doctors in ‘hybrid roles’ who captured the rhetoric and minimized adversarialism among key stakeholders.

Introduction

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Healthcare is one of the largest elements of public expenditure in developed countries. Demographic changes, new technologies and treatments, along with increasing consumer expectations, have put pressure on governments and public hospitals to

In the past, several of the co-authors have conducted projects with various health services. We assure the journal that such involvements were on different topics and do not constitute conflicts of interest that would influence their objectivity. The co-authors have no other conflicts of interest to declare.

contain costs and provide efficient and effective healthcare, whilst improving the quality of care (Radnor and Boaden, 2010). Since the early 1990s, governments have introduced a plethora of health policy initiatives including budget cuts, outsourcing, output-based funding, productivity improvements and greater accountability through performance measures and targets, as well as workplace innovations that involve human resource management (HRM), leadership and quality improvement initiatives (Osborne *et al.*, 2015). One such workplace innovation strategy has been the transfer of business process improvement methods such as Lean Management (LM) from manufacturing into healthcare (Leggat *et al.*, 2015; Radnor, Holweg and Waring, 2012). LM was developed from the success of the Toyota Production System in improving productivity and quality in the automotive industry (Shadur, Rodwell and Bamber, 1995; Womack and Jones, 2003). It has 're-emerged as a fashionable management philosophy' (McCann *et al.*, 2015) and has been promoted as a way to improve efficiency and effectiveness in healthcare through its focus on eliminating waste from a product or service value stream by identifying and reducing non-value-adding process steps. While some researchers question the efficacy of LM in a healthcare setting, particularly in relation to the sustainability of LM initiatives (McCann *et al.*, 2015), others suggest that LM initiatives can be successful if clinicians are engaged and empowered (Stanton *et al.*, 2014). However, research also suggests that there are difficulties in engaging powerful professionalized and unionized healthcare occupational groups with such forms of workplace innovation and organizational change (Currie *et al.*, 2012; Fincham and Forbes, 2015).

Hospitals are complex and pluralistic organizations with 'important differences in opinions, interests and power across different individuals, stakeholders and groups operating at the sub-organisational level' (Lockett *et al.*, 2012: 357). Consequently, attempts to change the way that work is organized confronts a web of stakeholders with different goals and professional cultures (Bartram and Dowling, 2013). Healthcare professionals, particularly medical practitioners, are powerful and exert much influence on the adoption of workplace innovations (Adler and Kwon, 2013). Resistance to change from doctors, especially regarding the introduction of workplace innovations, is well documented (Lockett

et al., 2012; Waring and Bishop, 2010). McGivern *et al.* (2015: 412) argue that 'professionals have historically resisted new ways of organising professional work that challenged professional dominance and autonomy, including managerialism'. However, doctors' acceptance of change in the form of workplace innovation, such as LM, has not been well documented. This paper is motivated by the need to better understand how hospital managers can embed workplace innovations such as LM, given the lack of evidence for successful sustainable change. We are especially interested in the role of doctors and their promotion of, engagement with or resistance to change in response to the introduction of workplace innovation.

We draw on Lawrence and Suddaby's (2006) concept of institutional work (IW) and the sociology of professions literature (e.g. Lansbury, 1978) to examine the role of doctors as 'institutional agents' (Currie *et al.*, 2012) during the introduction of LM initiatives. We ask why and how doctors resist, influence or enable LM initiatives in healthcare organizations. To examine these research questions, we analyse a study of LM interventions in two Emergency Departments (EDs) in hospitals in Australia and Canada. There are similarities in both the operations of public hospitals and the introduction of LM that make this a useful comparison. In this paper, henceforth, we use the UK term 'Accident and Emergency' (A&E) Departments. We explore how doctors interact with other actors at three levels: industry (government agencies, professional associations and unions); the organization (hospital management hierarchy, clinical and disciplinary groups); and the workplace (A&E Departments). We focus on A&E. First, in view of their importance and high profile in acute medical care and second, following much-publicized powerful criticisms about their high cost and long waiting times, many hospitals have tried to implement workplace innovation by using LM changes in their A&E Departments, with varying degrees of success (Holden, 2011).

Our contribution is to extend Lawrence and Suddaby's (2006) typology of IW. We examine what actors do when involved in IW processes and situate the interaction of these actors as a multi-level phenomenon. Furthermore, we explore how an actor's occupational status impacts on the process of creating, maintaining and disrupting institutions. We build on the work of Currie *et al.* (2012) by using IW to explore how professional

power is maintained through our analysis of how doctors use and adapt LM to maintain their own position and confront clinical challenges. We recognize that many doctors are in ‘hybrid’ roles, that is they are ‘professional workers who hold managerial or leadership responsibilities’ (Burgess *et al.*, 2015: S87; Spyridonidis and Currie, 2016). Third, given the controversy and contradictory findings in relation to the sustainability of these process changes (McCann *et al.*, 2015), we contribute to understanding the process through which workplace innovation in the form of LM can be successfully implemented and embedded in hospitals.

In this paper, we first explore empirical evidence on the introduction of LM in hospitals and the impact on employees and the organization of work. Second, we review the sociology of professions literature and IW theory and its relevance for understanding such issues in hospitals. Third, we consider the institutional context and fourth, introduce the main actors. Fifth, we outline our methodology. Sixth, we discuss two comparative scenarios before finally discussing our findings and drawing conclusions.

LM and healthcare: Impact on employees

Critics have described LM as ‘management by stress’, arguing that it ‘sweats’ workers through faster work processes, standardizes jobs, increases social control through peer pressure and leads to a reduction in the labour force, with workers asked to do more with less (Graham, 1995). Stewart *et al.* (2010) claim that LM is a management strategy to marginalize unions by co-opting union representatives into a management mindset and breaking employee resistance to change. MacDuffie (1995), however, argues that flexible production systems such as LM include participatory team-based work, leading to the expansion of workforce skills and improved employee commitment. Other studies suggest that the impact of LM on employees is complex and may lead either to work intensification or worker empowerment, depending on the context (Stanton *et al.*, 2014).

As a workplace innovation technique, LM is attractive to managers facing major challenges in difficult contexts. As Waring and Bishop (2010: 1334) argue, LM ‘illustrates the desire of policy makers to reorder clinical work through the introduction

of managerial philosophies and techniques’. However, many LM initiatives in healthcare have consisted of relatively minor projects focused on small-scale activities, offering a fix for current problems with a narrow range of technical tools (Radnor, Holweg and Waring, 2012). There is little evidence that such process redesign strategies are effective in transforming healthcare sustainably (McCann *et al.*, 2015). Barriers have been identified, for example, in the lack of a culture of continuous quality improvement, effective leadership, availability of resources, poor communication strategies (Radnor and Boaden, 2010; Waring and Bishop, 2010), as well as a lack of human resource management (Leggat *et al.*, 2015). Moreover, based on a study of a large UK health organization, McCann *et al.* (2015) reported that despite LM initially being seen as a beacon of ‘hope’, it was later diluted and discontinued. This led them to strongly reject what they saw as ‘the current prescriptive or managerial discourses on lean’, especially in healthcare (McCann *et al.*, 2015: 1557). In contrast, Stanton *et al.* (2014) found that some LM changes had a positive impact on the quality of work life of staff and their level of participation and control. This raises the question of how some healthcare professionals are able to exercise control in the workplace during the introduction of major workplace innovation techniques, such as LM. Given existing power structures, we focus on senior doctors, many of whom have hybrid clinical and management roles.

Institutional work

Lawrence and Suddaby (2006) define IW as ‘the purposive action of individuals and organisations aimed at creating, maintaining and disrupting institutions’ (2006: 215). IW is primarily concerned with mundane, purposeful practices of individuals and groups aimed at the maintenance and transformation of institutions. IW brings such ‘actors’ to the centre stage of institutional theory, considering them the principal drivers of institutional change and ‘the stabilising guardian’ (Hwang and Colyvas, 2011: 62).

Institutions are defined by Scott (2008: 48) as ‘regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning for social life’. The regulative aspect of an institution

is concerned with the ‘rules of the game’ that ‘constrain and regularise behaviour’ (2008: 52). The normative aspects of institutions rest on ‘rules that introduce prescriptive, evaluative, and obligatory dimension into social life’, creating a sense of social obligation and moral governance (2008: 54). Scott also argues that the cultural-cognitive element of institutions establishes ‘shared conceptions that constitute the nature of social reality and the frames through which meaning is made’ (2008: 57).

An institutional approach is particularly valuable in healthcare, where actors often have conflicting allegiances, powerful key stakeholders try to protect their own interests and policy drivers are not always ‘joined up’. Adler and Kwon (2013: 4) argue that the adoption of workplace innovations, particularly in larger enterprises, such as hospitals, is influenced by horizontal relations with peers outside the organization, horizontal relations with peers inside, vertical relations with those in authority in the organization and inter-organizational networks linking professionals across organizations (e.g. in industry and government). An IW framework is also useful in capturing ‘fluid and uncertain’ institutional processes (Lawrence, Suddaby and Leca, 2011). IW brings individuals back into institutional theory, retaining and reproducing the dualism of individual agency and the institution (Lawrence, Suddaby and Leca, 2011).

Institutional actors engage in and maintain the institution, ‘and the practices that are associated with the creation of new institutions and the disruption of existing ones’ (Lawrence and Suddaby, 2006: 220). We can identify three major components of IW. First, creating institutions consists of forms of IW aimed at establishing institutions. These include advocacy, constructing identities, changing normative associations and educating. Second, maintaining institutions may include individual and group activities, including enabling work, policing, valorizing and mythologizing, and routinizing. Third, disrupting institutions may include an array of activities that include disconnecting sanctions, disassociating moral foundations and undermining assumptions and beliefs (Lawrence and Suddaby, 2006).

The IW framework also examines the interplay of boundary work and practice work, defining boundaries as the distinction between people and groups and practices as the shared routines of behaviour in groups. Zietsma and Lawrence

(2006: 190) argue that ‘the interplay of boundaries and practices is central to the work of actors to translate exogenous events across field boundaries into field-level practices and the role of peripheral, central, or new field members in introducing and institutionalising alternative sets of practices’. These authors argue that all action is embedded in the social structure that it simultaneously produces, reproduces and transforms.

Boundaries and practices exist in a recursive relationship in which practices enact and support boundaries. There are complex links between boundaries, practices, boundary work and practice work. The experience of practice can motivate both practice work and boundary work (Zietsma and Lawrence, 2010).

Adler and Kwon (2013) argue that there are facilitating and impeding factors concerning major organizational change at three levels: individual professionals; professional organizations; and the broader institutional field. At the individual level, professional characteristics such as autonomy, expertise, values and identity can play an important role in determining the power of professionals to influence the implementation and diffusion of workplace innovation. The characteristics of an enterprise – such as its organizational strategy, structure, management systems and culture – also play a role in either facilitating or impeding workplace innovations. Similarly, professional associations’ and unions’ organizational characteristics also influence the diffusion of workplace innovation.

The power of the medical profession

According to McGivern *et al.* (2015: 412), a ‘professional is an exclusive identity, developed through qualifications, training, and socialisation, creating social identity boundaries and enhanced careers’. Doctors are generally regarded as the most powerful profession in hospitals, as they usually have the dominant say on who is admitted, what treatment they receive and when they leave. They play a pivotal role in organizational change that could impact on patient care. Doctors are trained to be independent, rely on their own judgement and tend to identify with their profession rather than the organization (Currie *et al.*, 2012; McGivern *et al.*, 2015). Historically, doctors have resisted new ways of organizing clinical work

that challenge their professional dominance and autonomy (Lockett *et al.*, 2012; McGivern *et al.*, 2015). The introduction of process redesign can be interpreted as a challenge to their autonomy (Waring and Bishop, 2010).

The rationale of IW of actors is influenced by their position in the organization and their control of resources (Currie *et al.*, 2012; Lawrence and Suddaby, 2006). Powerful professional actors such as doctors have the ability to promote and effect change, but often resist when they wish to maintain their privileged position (Currie *et al.*, 2012). According to Hardy and McGuire (2008: 199), privileged actors are 'unlikely to come up with novel ideas or pursue change, because they are deeply embedded in, and advantaged by, existing institutions'. Instead, they seek to maintain their professional dominance, particularly in the face of threats to their current position (Currie *et al.*, 2012). Scott (2008: 223) argues that professionals are the 'most influential, contemporary crafters of institutions' as they often shape institutional arrangements that privilege their own position and social division of labour. Generally, professional elites will use IW to maintain their position, especially among their intra-professional strata as they seek to retain professional influence among their peers in the face of major institutional change.

One way in which they achieve this is through 'professional projects' – as professionals interact with jurisdictional boundaries they either deliberately or unintentionally 'engage in processes of institutional work' (Suddaby and Viale, 2011: 426). Based on UK evidence, Currie *et al.* (2012: 597) report that when doctors faced threats to their status from managerial attempts to substitute their labour through reallocation of resources, they responded by delegating routine tasks to other actors and maintaining existing resource and control arrangements over the delivery of services which enhanced their professional status. In this way, professionals can define a new uncontested space, populate a new space with new actors and introduce new rule systems that redefine the boundaries of organizational fields (Suddaby and Viale, 2011: 428–433). Moreover, Suddaby and Viale (2011) describe how professionals can draw on their social capital and political and cultural skills to engage others and enact or resist change. This can be done through rhetoric to 'legitimate or delegitimize the acceptance of a particular programme of change' (p. 434). In other words, they can build

a narrative using the language of the professional which, as Suddaby and Viale (2011: 435) argue, 'is a crucial weapon ... and professionals are skilled rhetoricians'.

Furthermore, doctors are increasingly taking on more formal leadership and managerial roles and become 'hybrid' managers (cf. Burgess *et al.*, 2015; Spyridonidis and Currie, 2016). In these roles, whether they are formal or informal, they have to balance the day-to-day operational requirements of their department or unit with the needs of their frontline clinicians – sometimes more junior and sometimes of equal professional status – and with the strategic directions of their organization (Burgess *et al.*, 2015). How they do this is a focus of this paper.

The research context: Institutions and institutional actors

In Australia, public hospitals are funded by state and federal governments. State governments have immediate responsibility for acute health service delivery, which they do through funding agreements and performance measures. They also negotiate employment arrangements through industrial-relations processes, which are generally centralized through occupationally based agreements in each state and captured in localized enterprise bargaining agreements (EBAs). State governments thereby try to maintain control over labour costs. The majority of public hospital workers are employees of individual hospitals or hospital networks that have responsibility for HRM. While some hospital doctors are salaried, there are also many visiting medical officers (consultants) who are independent contractors.

Similar to Australia, Canadian public hospitals are governed and operated at a provincial level. Again, the majority of hospital staff are employed directly by the hospital, on employment contracts, except for doctors, many of whom are independent contractors who claim fee-for-service reimbursement from the provincial health insurance scheme (Deber, 2004).

In Australia, doctors are generally represented through the Australian Medical Association. In Canada, provincial-level medical associations represent doctors. In both countries, these associations position themselves as professional membership associations rather than as unions, but

in practice they conduct many of the roles of unions such as bargaining and lobbying. In both countries, the medical associations have considerable influence, so governments often aim to co-opt these organizations into planning and health reform processes.

Methodology

In this paper, we examine retrospectively process redesign projects implemented in the A&E Departments of a large hospital in Australia and in Canada. Process redesign is seen as a solution to overcrowding in A&Es, as expanding capacity and increasing speed of throughput are neither practical nor sustainable (Holden, 2011). In Australia, the study included an analysis of an A&E project implemented in an 18-month period, during 2009–2010. The Canadian study included a 2011–2013 A&E project. Both projects aimed to increase the rate of flow of patients through the A&E Department.

In line with Pettigrew (2005), we used a multilevel interdisciplinary approach to our analysis, drawing on historical and current data and situating both organizations in a wider social and political framework. Data collection methods included observation of workplaces, semi-structured interviews and the analysis of documents, including annual reports, policy and procedure manuals, consultants' and government reports and other relevant documents.

In Australia, between 2012 and 2014, we conducted interviews with 42 key informants who had a detailed understanding of the implementation. Interviewees included government officials, senior executives, members of the quality improvement team, clinical managers (Medical Directors and Nurse Unit Managers (NUMs)) and their staff, including registered nurses and medical practitioners. In Canada, between 2013 and 2015, we conducted 28 interviews with a similar range of key informants. We used snowball sampling, in both cases starting with decision-makers and seeking both champions and detractors. We designed our questions to obtain an in-depth view of the participants' perception of the LM process and outcomes.

Three independent coders analysed the transcripts using thematic content analysis, recommended for analysis of such types of data

(Silverman, 2010). We used NVivo (v.8) software to collate data extracts within codes. Coding reached theoretical saturation when no new themes emerged. In a second phase, we used axial coding of related data extracts within and across categories to identify relationships between the codes and higher-level recurring themes. As the project developed and coding became more complex, we also used NVivo to search key words.

Findings: LM in the hospitals

Both hospitals in this study implemented LM improvement projects in an attempt to facilitate more efficient patient flow through the A&E Department, including to other units in the hospital. Those who initiated the projects aimed to reduce the time taken to deal with patients in the A&E Department, to meet externally imposed targets of 8-hour maximum wait times (as in the UK National Health Service (NHS)). In the Australian hospital, the CEO played a major role in driving the initiative, referred to as 'the 8-hour project'. In the Canadian hospital, however, change was driven by the broader health service organization with responsibility for care delivery across the province and, therefore, the local hospital managers played a smaller role.

Both hospitals received additional resources from the government to facilitate the project. The process redesign methodology in the Australian case was a typical LM approach; hospital staff were trained by a team from a commercial enterprise and supported by the hospital Quality Improvement (QI) Team. In the Canadian hospital, the process was supported by an experienced Regional Process Improvement (RPI) Team. Neither hospital involved unions in negotiating the introduction of LM. However, in both countries, unions became involved if projects infringed on terms or conditions of employment, or if there were individual grievances or job security threats.

Scenario 1: Australia – the redesign of an A&E surgical service

In 2011, prior to the introduction of LM, the Lead Surgical Consultant (LSC), influenced by overseas evidence, initiated a pilot project for a new model of care: an 'Emergency Surgical Service'. The model involved junior doctors, registrars and

consultants working *simultaneously* on diagnosis and treatment, rather than the former system of *sequential* consultation. Consultants were paid to attend A&E on a rotating basis rather than a fee for service on-call system. The LSC, with two other surgeons, initiated a pilot project at their own cost. Once the pilot had demonstrated success in reducing surgical patients' wait times, the LSC was invited to be a member of the team managing the LM changes and the State Health Department funded a 1-year trial.

The LSC explained how all new ideas had to be supported by a business case, a long-drawn-out process, but here was an opportunity that aligned with the LM concept:

The idea... was to... control our emergency work... before we set this up, the emergency work was actually dominating us... [we] are here to do elective surgery on cancer... and we were being overwhelmed by all this emergency work... So, the plan... was [that]... you'd do your week of on-call at this thing... and then you hand that over...

The QI leader claimed:

I found out that LSC was looking at this fairly innovative model, which probably would have been cost neutral but also would have improved patient care... You can use the 8-hour project to... get some traction.

Hence there was congruence between this clinician-initiated and -led clinical improvement process and the managerial-led LM programme. This convergence of agendas facilitated the extra resources needed to embed the project in the A&E Department. This success led the Director of Medicine to advocate the Lean Team for a similar model for medical patients in the ED to decrease their waiting times. This was unsuccessful at the time due to a lack of resources (but succeeded some years later).

The CEO also saw the benefits of supporting this project and explained that she had realized that:

A&E was not just one project, but actually a collection of individual projects so the Executive team also saw the opportunity and provided funding... it was about the whole of the hospital changing the way it did its business, as well as the A&E changing.

Another surgeon commented on the importance of gaining the CEO's support: 'Having the CEO on board makes it pretty hard for anybody else to drag

the chain.' Nonetheless, achieving change with surgeons is challenging and there are always powerful stakeholders in opposition. The LSC explained:

there's been another group of people [surgeons in his department] who've been very opposed to it... the process of achieving change against... their opposition, has been very, very difficult...

The LSC described how he started by working with early adopters and avoiding challenging those in opposition:

When we... started... some people said, 'No, we're not going to participate in this at all.' So they were allowed to continue in the previous fashion... then other people were willing, to various extents. So... a number of us did a lot more weeks on-call than would be normal... Through this process, we managed to coerce the sort of 'swinging voters' to a moderate amount to see what it was like.

However, importantly, the LSC also anticipated the reaction of those in opposition and approached the Australian Medical Association to neutralize potential grievances. He also institutionalized the changes:

And then when the trial was proved successful... we did a bit more political skulduggery and we tried to... neutralise the older, senior surgeons by... a policy... where after the age of 60 they didn't have to do on-call.

As the LM projects rolled out across the hospital, other wards began to recognize that the problems were not limited to A&E. As the CEO pointed out, relationships between A&E and other units had been 'terrible' in the past, and A&E received a lot of blame. However, she also claimed that A&E staff contributed to this by refusing to make changes until they secured extra resources. She described the usual response to change from clinicians in A&E:

'Can't change anything, all you need to give us is a whole lot more staff...' I'm saying: 'I'm not giving you any resources until we... look at whether or not the processes are efficient... when... we've got an efficient A&E, or an effective one... then I'll look at the resources.' And in the end, I did give them some resources.

The A&E surgical service was an example of using LM tools to identify a problem and develop

a cost-effective solution that improved patient care. The whole-of-hospital approach driven by the CEO meant that all units began to get on board, despite them not getting extra funding.

As the Director of Medicine put it:

that's what the surgeons demonstrated with their trial. It's brilliant. The surgeons loved it. Patients loved it. Quicker decisions. Registrars loved it because they were there with the boss, watching the boss work!

By 2015, this model of care had been embedded and continued.

In summary, the key features of this change process were as follows. First, it was led by an innovative well-respected leading clinician who involved a group of like-minded individuals who could bring other surgeons along to initiate what he described as 'transformational' practice change for the benefit of doctors and patients. This powerful group managed to neutralize resistant surgeons, even making changes to their contracts without invoking the grievance process. Second, these changes were largely about improved standards of care, rather than simply throughput. While the initiative did increase throughput, targets did not drive it. Instead, project leaders used the 8-hour project as an opportunity to achieve something they had already wanted to do. Third, the initiators gained hospital executive support and attracted

necessary additional resources from the state government Department of Health through a 'win-win' strategy. Fourth, process change was part of a hospital-wide strategy, so the initiative led to practice change between the surgeons. Fifth, it also led to boundary change as different disciplinary groups and departments sought improvements in efficiency, effectiveness and quality, and began to work together. See Table 1 for a summary of the process of workplace innovation in Scenario 1: Australia. This table helps to guide the comparison of our cases.

Scenario 2: Canada – the introduction of a seventh shift into A&E

In the Canadian hospital, interviewees mentioned adversarial relationships between A&E doctors and managers, and certain doctors and nurses. It was believed that doctors themselves acted as 'rate limiters', opposed to increasing their supply as this could undermine their individual earnings. One of the RPI team captured the doctors' concerns:

One of their biggest issues was length of stay and wait time. They complained there were never enough nurses, there was never enough beds... They couldn't see their patients... in an appropriate space. They had to wait for charts... some of [the issues] are certainly legitimate, ... their biggest [issue] – when you're fee-for-service, if you can't see patients, you can't make any money!

Table 1. Summary of the process of workplace innovation in Scenarios 1 and 2

Key aspects	Scenario 1: Australia – redesign of an A&E surgical pathway	Scenario 2: Canada – introduction of a seventh doctors' shift in A&E
Source of design innovation	LSC identified bottlenecks in surgical pathways; piloted a resigned pathway at own cost, independently of parallel LM programme in A&E	Process improvement professionals collected data and identified process problem in A & E; developed solution to introduce seventh shift
Role of improvement specialists	After success for LSC pilot programme, process improvement experts acted as intermediaries (information transfer and advocacy) between LSC and hospital CEO	Process improvement experts identified a problem and devised a solution, then gained 'buy-in' from lead A&E physician
Organizational leadership	CEO advocated to the State Health Department for extra funding to fully implement the surgical pathway redesign in A&E	Lead ED physician persuaded A&E doctors to trial a seventh shift
Role of resources	Additional resources provided by State Health Department	Blockage of A&E beds due to inability to transfer patients to wards was a key bottleneck that limited effectiveness of seventh shift, leading to its withdrawal
Adoption of work design innovation	LSC managed introduction and implementation of the workplace innovation throughout the A&E surgical service	Several months after initial withdrawal of the trial, following some negotiated changes, doctors asked for the seventh shift to be reinstated on their own terms

In this context, the introduction of LM to meet mandated targets was always going to be challenging. Because these doctors are independent contractors, the Lead Physician (LP) in A&E said he had only limited power and no sanctions to mandate behaviour change:

When... the person... doesn't follow the rules and not much happens to them as a result of it, then it's pretty hard to – keep it going – ... If you don't get your hand slapped, you can keep doing it... and I don't see our docs' behaviour changing that much on account of me reiterating stuff...

However, as a Nurse Manager in A&E argued '[doctor] support and buy-in is absolutely key to enable success' and a seventh shift involving more doctors was introduced in 2012. This initiative reflected at least four strategies.

First, it was initially driven primarily by the RPI team, but they aimed to build trust with doctors who eventually 'owned' the initiative. A RPI team member explained:

I would have one-on-one conversations with the doctors... these were... icebreaker conversations... these... were crucial in making those changes. We have 17 A&E doctors and I know each of them as well as any other... The most important thing is listening.

Second, much of this 'ownership' was due to the work of the LP, who was initially suspicious of LM, but became a strong advocate:

He's willing to call the physicians when they're inappropriate in their complaining... about managers. He's willing to take the impact of budget – back to the [A&E] physicians, going: ... 'The surgeons are down to one surgery day in ten weeks. They can't generate any revenue... Like, back off.' He's been... phenomenal. (RPI team member)

Third, the RPI team and the LP understood that doctors are influenced by data and logic. Through a value stream mapping exercise and showing graphic statistical evidence on patient volume, they were able to demonstrate that introducing a seventh shift would increase throughput, improve patient care, meet targets and increase individual earnings.

Fourth, this process was aided by the work of a part-time process improvement nurse who acted as a boundary spanner, working with doctors and nurses to identify opportunities for practice and

boundary change. She implemented processes allowing nurses to help doctors perform tasks more efficiently, for example, by ensuring that patients were gowned before examination. In this situation, practice work helped enable the shift changes that increased doctor availability and nursing support.

However, the introduction of the seventh shift led to unforeseen problems. The LP claimed that this demonstrated the problems in A&E were not due to doctors being 'rate limiters':

This was a scenario where the doctors changed their schedule and nursing was not changed and the number of beds did not increase when the extra doc came on... as a result all three docs were sitting around.

The administration responded by bringing in an extra nurse from night shift. This led to conflict between the day and night shifts, who already felt overstretched, the nurse union official claiming that 20 industrial-relations grievances were lodged by night shift staff on quality of care issues. More importantly, increased throughput led to bottlenecks in transfer to medical units whose leaders were not involved in the LM project, and who were aggrieved at being expected to do more with no extra resources. This led to A&E beds being blocked by patients awaiting transfer, hence limiting the capacity of the seventh shift doctors to assess and treat new patients. Furthermore, managers and staff in the medical units and A&E also had adversarial relationships. A nurse in A&E commented:

There's a lot of barriers [to change]... There's... a cultural thing... Medicine doesn't like A&E... A&E doesn't like Medicine.

The terms 'us and them' were used frequently and managers of the medical units saw the LM-inspired change in A&E as creating more work, exacerbating the hostility between the two units. A&E had continuous support for two RPI facilitators, a part-time nurse champion and training was provided to most staff. In the medical units, however, training and support were limited and the manager in charge complained of unfairness in resource allocation, leading to difficulties in getting 'buy in':

Because... nothing seems to change. I get lots of, 'We can't do that because...' any resources that you ask for, 'We can't do that... I don't have any money.'... She [the nurse manger] has to live within

her budget. But anything that we do has to be very much budget-neutral. (RPI team member)

Hence, the medical unit managers resisted changes that impacted on them, thus undermining any improvements in A&E.

These bottlenecks led to the doctors threatening several times to withdraw the seventh shift. After 12 months following a particularly difficult period in A&E, they did so. However, some months later, when A&E was even busier, the doctors voted to reinstate the seventh shift – despite the fact that many of their complaints had not yet been addressed. As the LP stated:

Basically, the seventh shift was just – well, people – doctors were standing around a lot, waiting for patients to be seen and just having to work more out of the waiting room . . . that was a source of frustration, so the shift was dropped. But, after about a year . . . some of the doctors felt that the workload was too high, so it was . . . voted to restart the seventh shift, even though the problem that led to the dropping of it hadn't really been solved.

The LP also explained that doctors were starting to find their own ways to improve patient flow in A&E and expressed surprise, but satisfaction, that many of them had come on board with LM.

To recap, first, the introduction of the seventh shift in A&E was initially led by the RPI team rather than clinicians, and it focused on increased throughput rather than improved models of patient care. However, trust was built when a respected clinical leader got involved, aided by an experienced boundary spanner and good data, and there was practice change between doctors and nurses. Nevertheless, for much of the time this change was tenuous, challenged by concern from doctors that was interpreted by others to be about individual earnings. Second, the LM project was not championed by the local hospital executive, but implemented by the broad provincial health service organization and focused on A&E rather than the whole hospital. In this sense, boundaries between departments became more entrenched as they fought over scarce resources. There was lack of hands-on direction from the hospital executive to overcome this. Third, to make matters worse, there were long-standing conflicts between A&E and the medical units, with strong personalities and conflicts over resources. The medical units had their own leadership problems. Lack of resources

was a constant underlying theme in this hospital, with claims of a stream of industrial-relations grievances acting as irritants in the system and undermining the LM process. Nonetheless, despite these problems, doctors eventually accepted clinical improvements and made their own changes to sustain them. See Table 1 for a summary of the process of workplace innovation in Scenario 2: Canada.

Discussion and conclusions

We have explored how workplace innovation can be embedded and sustained in hospitals, and the role of doctors in resisting, influencing or enabling change. In this study, doctors in the Australian hospital used the opportunity provided by LM initiatives to support medical practice that they considered valuable. Our findings show that doctors can engage in workplace innovation such as LM to improve quality and efficiency of patient care and maintain their professional dominance. In both A&Es, the LM outcomes were eventually supported by the majority of clinical staff. The changes have continued, with perceived utility. We argue that the successful introduction and sustainability of workplace innovation rests on the participation and ownership of key professional groups such as clinical staff. These findings vary from those of McCann *et al.* (2015), who suggest that in at least parts of the NHS, LM was regarded as a management fad and was often short lived.

In our cases, critical to embedding LM in A&Es was 'ownership' of the changes and leadership by influential doctors throughout the change process. Their role as boundary spanners and rhetoricians minimizing adversarialism between various stakeholders was crucial. Moreover, while CEO support and adequate resourcing of LM initiatives were also important for long-term sustainability, doctor engagement could overcome such shortfalls.

In the following discussion, we draw on IW theory and the sociology of professions literature and examine three implications of our work for theory building and for hospital managers introducing workplace innovations such as LM into clinical areas. First, the results of our study demonstrate the power of the medical professional to sustain LM initiatives over the long term (Lockett *et al.*, 2012; McGivern *et al.*, 2015). Using their professional expertise, and their positional and political

power, senior doctors were able to influence strategically the use of resources designated for LM initiatives. They maintained their professional dominance by capturing the characteristics of the LM initiatives so as (from their perspectives) to solve pre-identified clinical process challenges and improve the efficiency of medical treatment (Hardy and McGuire, 2008). The cases demonstrate that, without the agreement of the senior doctors, LM initiatives would not be embedded or sustained. In this way, the doctors carried out a 'professional project', simultaneously engaging in institutional work for the healthcare system, and protecting their self-interest and their system of professions (Currie *et al.*, 2012; Suddaby and Vaile, 2011).

In the Australian case, the senior doctors used LM as an opportunity to implement already identified clinical practices to enhance the quality and efficiency of patient care. This would have been difficult to achieve by non-clinical hospital managers or the QI team, as was illustrated by the Canadian case. It was the leadership of the doctors and their ability to provide evidence to their colleagues that led to success. Leading doctors used diplomatic skills to avert conflict within the wider medical profession (e.g. through seeking commitment from medical professional associations), other clinician groups and senior management. They emphasized collaboration by developing networks and win-win situations for managers and other clinicians, maintaining their professional dominance in the production of new institutional rules. Countering rivalry between clinicians and hospital managers brought about stability for key actors through the creation of new rules and expansion of jurisdictions. In both cases, the key to a successful outcome was the involvement and ownership of doctors, even if they did not fully embrace LM. In such ways, doctors themselves legitimized the process of organizational change (Suddaby and Vaile, 2011), and were able to assist management in the argument for more resources. Moreover, these senior doctors had 'hybrid' roles involving both a leadership and a clinical dimension; as Burgess *et al.* (2015: 89) argue, they mediate operational tensions through 'professional legitimacy, social capital and a holistic professional orientation'.

Second, we contribute to IW theory by helping to unpack the complex relationships between boundary and practice work to create, maintain and disrupt institutions. The process whereby boundaries are changed rests on a complex form

of boundary and practice work undertaken by key actors that effectively use their professional status and personal power (cf. Adler and Kwon, 2013; Lawrence and Suddaby, 2006; Suddaby and Vaile, 2011). In the Canadian case, a significant advocacy and boundary spanning role had been undertaken by a senior nurse to involve doctors in the introduction of LM. Similarly, the RPI team provided valuable data. After the doctors understood the benefits to clinical practice and lack of risk to themselves (i.e. current workload and professional power), they became advocates of practice change.

In the Australian case, powerful senior doctors used boundary work and practice work simultaneously to impact institutional change by using their organizational and professional power to lobby and advocate for their goals and redefine the boundaries of their organizational fields (cf. Adler and Kwon, 2013). Through a unifying message of improving patient care and employee wellbeing, underpinned by a set of new (legitimate) rules and practices, they changed boundaries by galvanizing support across the three institutional levels (cf. Lawrence and Suddaby, 2006; Zietsma and Lawrence, 2010). Innovative work arrangements were legitimized both through practice work (developing practices that were effective) and through developing cross-boundary connections and expanding boundaries with other clinicians, departments in the organization and external stakeholders. In this sense, these 'hybrid' leaders went beyond finding workable compromises (Burgess *et al.*, 2015) to taking direct ownership of significant change. Once again, by taking ownership over workplace change they could maintain their professional power and create workplace efficiencies that were to their benefit.

In clinical areas, doctors must take the lead for change to be successful, as they are often suspicious of process redesign and manager-led workplace innovations (McCann *et al.*, 2015). As shown in the Canadian case, tensions can surround the use of LM, as participants suspect that managers intend to intensify work and cut costs. These tensions were overcome once doctors understood the potential benefits of the LM initiatives and had greater 'ownership' of them to shape the intervention in ways that supported what they saw as improvements in the provision of healthcare.

Third, doctors used IW across three levels (i.e. industry, organization and workplace) to enable the practice changes to be embedded. Importantly,

change needs to be driven and supported or allowed by all levels, as institutions not only act as controlling and constraining factors, but also as enabling and empowering factors (Scott, 2008). Our two scenarios demonstrate how these three levels are enmeshed and how they help or hinder actors to create, maintain or disrupt institutional change (Adler and Kwon, 2013). In both cases, the macro-institutional environment was conducive to change. While the industrial-relations institutions set certain parameters of the regulatory frameworks, unions did not play a role in the implementation of process redesign, unless it appeared that employees' terms and conditions of employment had been breached. Workplace change was left to managers and clinician groups to negotiate at the local level. In the Australian case the senior doctors reached into the macro level by working with the leading medical professional association to avert any political discontent about the introduction of LM.

At the organization and departmental or unit level, there were significant differences. The Australian scenario was a whole-of-hospital approach driven by the CEO and executive, who sought good examples to support and resource, then influenced acceptance across all departments, while changing hospital culture by urging all managers to 'get on board' with the LM projects.

The Canadian case had weaker engagement by the hospital executive. These differences in the organizational context were reflected at the A&E level and directly influenced doctors and their responses. Furthermore, the LM initiatives were relatively isolated, resulting in suspicion and resentment by other work units who saw themselves as under-resourced, and managers were not persuaded to engage. While significant sustainable workplace innovation/change needs to include both practice and boundary changes (cf. Lawrence, Suddaby and Leca, 2011), boundaries in healthcare are entrenched, with clinical roles, professional groups and hierarchies fiercely protected (Currie *et al.*, 2012). These boundaries are often contested due to conflict over scarce resources. Hence, in Canada, unlike Australia, resentment from the leadership of the medical units over the provision of resources provided to A&E led to a lack of boundary change, meaning that the change was more fragile.

We recognize that this study has at least two limitations. First, our data was drawn primarily

from individuals who were involved in leading and managing LM initiatives, rather than rank-and-file workers affected by the changes. However, our data is rich and from multiple perspectives. We would recommend further research into the processes of institutional change at the rank-and-file workplace level.

Second, given that our data are from two case studies in two hospitals in two countries (Australia and Canada), our results may not be completely generalizable to all other healthcare organizations or A&Es. However, our findings seem to be broadly in accord with other research conducted in the UK and USA. Hence, we submit that our findings would be broadly generalizable to hospitals at least in these four countries and would probably be relevant and applicable to other sectoral and national contexts too.

In conclusion, our findings lend support to the importance of the involvement and ownership of senior doctors in the design, introduction and implementation of successful workplace innovation and organizational change. Doctors utilize their professional expertise, positional and political power to influence strategically the use of resources designated for workplace innovation – namely, to improve efficiencies and quality of patient care and maintain their dominance. It is also clear from our findings that organizational change needs to be driven and supported across industry, organization and workplace levels, as institutions represent both constraining and enabling factors. This study contributes, then, to a fuller understanding of the important roles that medical professionals can play in workplace innovation and change, and the sustainable transformation of healthcare delivery.

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