

Adaptation and implementation of improvement methods in a Middle Eastern hospital

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Abstract

This paper studies the adaptation of Lean-Six sigma improvement methods to suit the cultural and organizational context of a hospital in Riyadh, Saudi Arabia. This work was part of an 18-month ethnographic study by the author. The work identifies new contingencies for process improvement methodologies.

Keywords: Kaizen, healthcare, implementation

Introduction

Healthcare in all major developed economies is under pressure to improve its productivity and effectiveness because of the proportion of GDP that it now consumes. This has led to increasing numbers of healthcare organizations across the world using modern improvement methodologies such as lean thinking, six sigma and kaizen. There are now many case examples, such as Virginia Mason in the US and Flinders Healthcare in Australia that have demonstrated the transferability of such methods from manufacturing into healthcare, with appropriate adaptation. Like many operational or organization change programs, such initiatives have experienced high failure rates, but lessons are being learned about the barriers to implementation and critical success factors.

This paper studies the development and early implementation of a continuous improvement (CI) methodology in a hospital in Riyadh, Saudi Arabia. The research site, King Faisal Specialist Hospital and Research Center, is one of the largest and most established tertiary care centres in the Middle East, with an operating budget somewhere around \$1.6bn per annum and a workforce of over 7,000 at the Riyadh site. The objectives of the research were to understand the issues concerning the adaptation and implementation of improvement methods that were specific to the Middle East. The specific research questions included:

1. What factors motivated managers and employees towards the adoption and use of process improvement methods?
2. What barriers to change existed at the site?
3. What implementation success factors were important?
4. How did CI methods have to be adapted to suit the Middle East culture?

The work is partly unusual due to the ethnographic research methodology used. The author of this paper temporarily left academia to work as a senior manager at the hospital, allowing the ethnographic study to be conducted.

Background

Saudi Arabia has a population of 28m nationals, 28% of whom are under 15 and only 4.5% are over 60 (WHO 2012). The country is also host to 9.2m expat workers, 80% of whom earn less than \$550/month who work mainly as maids, drivers and manual workers (UN 2013). There is a sizeable number of professional expats who work as clinicians, engineers, managers and consultants. The country still only spends approximately 3.7% of GDP on healthcare (WHO 2012), but this is steadily increasing, especially as the Saudi Government anticipates increasing rates of diseases such as diabetes and other age-related conditions due to the aging population. The country also has high incidence of congenital diseases, partly due to the long-established patterns of consanguineous relationships. The country has steadily invested in health care facilities, but this is currently skewed towards secondary and tertiary facilities in the major population centers. Many of the existing facilities are controlled outside of the Health Ministry, as government General Organizations or as military-controlled facilities. There are expansion plans for 200 additional regional hospitals and further primary care facilities. Most healthcare facilities employ a high proportion of clinical staff from outside of Saudi, partly due to an historical lack of local training facilities.

Continuous Improvement Approaches

The common theme within Total Quality Management, Lean Thinking and Six Sigma is the notion of *kaizen*, or continuous improvement. Kaizen is generally seen to be the participation of the workforce in continuous, incremental process improvement (see Imai, 1986 & 1997). Many people regard it as a key ingredient in the success of Japanese industry (see Elgar and Smith 1994, Senge 1990, Utterback 1995), where the value of mobilizing an entire workforce to contribute to the development of the organization's capabilities and competitiveness is recognized (Bessant and Francis 1999). However, it is also clear that attempts to introduce kaizen into Western organizations has been challenging.

Since the first implementations of kaizen, it is arguable that methods in the West have evolved over time. Brunet and New (2003) found that Kaizen activities can be grouped into three levels of activity:

1. An enforced system of kaizen projects with regular meetings and a schedule, where overall performance is measured and discussed.
2. An intermediate level, with simple reporting of changes and outcomes.
3. Low level Kaizen, taking corrective actions to errors, where the kaizen is unreported.

One aim of the study was to understand the need to adapt CI to suit specific local requirements. The size and structure of projects, the degree of enforcement of improvement activity, the link with strategy and the speed of change are all potential variables. Many commentators have observed the immediacy of change in embedded Kaizen activity (Cuscela 1998, Heard 1999, Harter and Lousberg 1998, McNichols *et al.* 1999, Wennecke 2008). In many cases, once a problem is identified, an improvement cycle is initiated and a change implemented as soon as possible. This has encouraged the

notion of *kaizen blitz*, whereby structured change activity becomes highly focused, often occurring in the space of a few days or a week. The speed of the change is deliberate and has a number of potential advantages. Fast-paced change encourages teams to work intensively together, avoiding the postponement of work. It also potentially avoids some aspects of resistance to change because the work does stagnate as a consequence of long debates. Figure 1 shows the Brunet and New (2003) perspective of how Kaizen can be categorized into different forms of improvement activity.

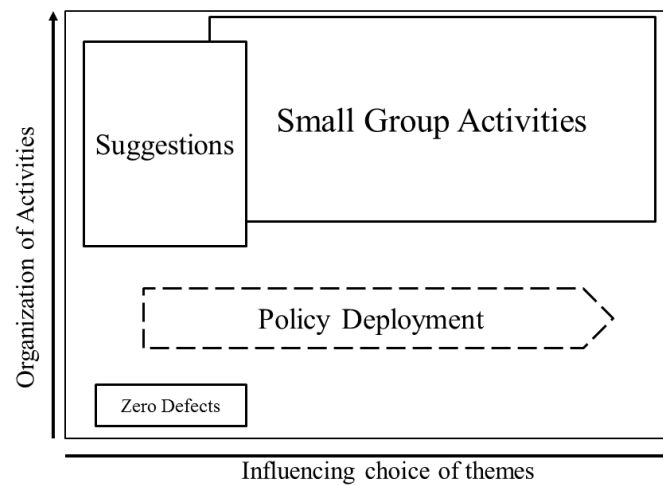


Figure 1 – Framework for understanding Kaizen (Brunet and New 2003)

Within the literature there have been many papers that have studied the reasons for success and failure of CI activities (e.g. Caffyn 1999, Bateman and Rich 2003, de Jager *et al.* 2004, Glover *et al.* 2011) and there have been literature reviews conducted (see Singh and Singh 2009, Radnor *et al.* 2005, Bhuiyan and Bagel 2000, Kaye and Anderson 1999, Keating *et al.* 1999)). This study builds on the author's earlier work which studied the implementation of CI in healthcare and public sector organizations in research conducted for the Scottish Government (Radnor *et al.* 2006). In this study the successful implementation and adoption of CI was influenced by the presence of the right motivating factors for the work, overcoming barriers and ensuring sufficient success factors. Table 1 (next page) provides a list of these factors that could be used to assess the effectiveness of the research site implementation.

Given that CI involves a degree of cultural change (Bessant *et al.* 2001, Irane and Sharp 1997, Maurer 2013) we should be aware of the existing culture and its impact on implementation. Cultural sensitivity is issue when looking at the challenges of transferring any Western management practices into Middle Eastern organizations. The notion of "cultural competence" has been suggested (Avolio *et al.* 1991). However, in many Middle Eastern organizations there is a mixture of staff from different parts of the world, working alongside local staff. Hence, understanding the culture could be a challenge as such organizations have been seen to blend national and organizational cultures (Moore 2005 & 2012). Moe *et al.* (2007) identified three separate cultures in a highly comparable Jordanian hospital: local societal, global international and

professional (medical/clinical). As an example of the complexities they provide the example of the contrast between Western and Jordanian (Islamic) end-of-life care, where local customs seek to prolong life when the Western model would be to provide purely palliative care.

Table 1 – Motivations, barriers and success factors for CI (Radnor et al. 2006)

Motivations for CI	Barriers to CI	Success Factors
Encouragement from leaders Performance indicators New technology Government requests Policy changes The threat of competition Efficiency pressures Service expansion Resource Constraints	Public sector culture Slow pace of change Lack of customer focus. Too many procedures. People working in silos. Too many targets. Lack of strategic direction. Lack of ‘buy-in’ by staff Poor staff morale Stakeholder issues. A lack of understanding of CI	Supportive culture Ownership Organisational readiness Management commitment Management capability Adequate resources External support Effective communication Strategic approach Teamwork Whole systems thinking Realistic timescales Enthusiasm for change

Research Method

The opportunity for an ethnographic study was presented when the author was offered a position as “Head of PMO” within the Department of (Strategic) Planning and Monitoring at King Faisal Hospital and Research Center in Riyadh, Saudi Arabia. The author worked at this site (and visited the other main site in Jeddah) between September 2011 and March 2013.

The research took a classical ethnographic approach in that the author participated overtly in work at the site, observing, listening, questioning and collecting data during the period of research (see Hammersley and Atkinson 1995). Ethnography is an especially appropriate method for the objectives of the study. The original purpose of ethnography in early social anthropological studies was to understand the organization of tribes and their cultures (O’Reilly 2005). Saudi Arabia still has an extensive tribal culture that pervades all aspects of business, organizational and family life. In this case the author could capture a rich narrative and generate an in-depth understanding of the ways in which the organization and its employees worked. Many of the issues, of religion, tribal relations and culture, cannot easily be openly discussed. As the author also discovered, the formal reporting of outcomes does not always match reality in this culture, so a more honest and accurate account of the impact of implemented change could also be achieved.

Hard data was gathered in several different ways. First, there was a survey of all staff that tested a wide range of issues, such as employee satisfaction, perceptions of future challenges, current concerns etc. There was a separate management survey, with slightly modified questions, that looked at similar issues. As part of the overall strategic development process two opinion surveys were also conducted at “away-days” and the results recorded. During later improvement team away days similar voting methods were used to choose topics for process improvement activity and these results were also noted. Process performance data and improvement activity were recorded by teams and collected by the author through the PDSA, DMAIC and A3 planning reporting systems.

The CI implementation

The author was one of the senior managers who agreed that the organization urgently needed some process improvement activity. (The CEO became interested in CI when he discovered it took 16 signatures to buy an \$80 voice recorder). However, a program of change could only be implemented after an extensive period of consultation. It was planned to obtain permission to implement CI during a “management retreat” that was held annually by the organization. In preparation a series of management and staff surveys were organized to provide evidence of the need to change. Culturally, it was not acceptable to highlight performance shortcomings from existing performance data (e.g. unacceptable lengths of stay, death rates etc.). Instead, this evidence had to show opinion that could be used to build consensus. Figure 2 shows one of the important results from the surveys, which highlighted that managers probably overrated their ability to implement improvements. This was used to form a proposal to structure and support a process of continuous improvement.

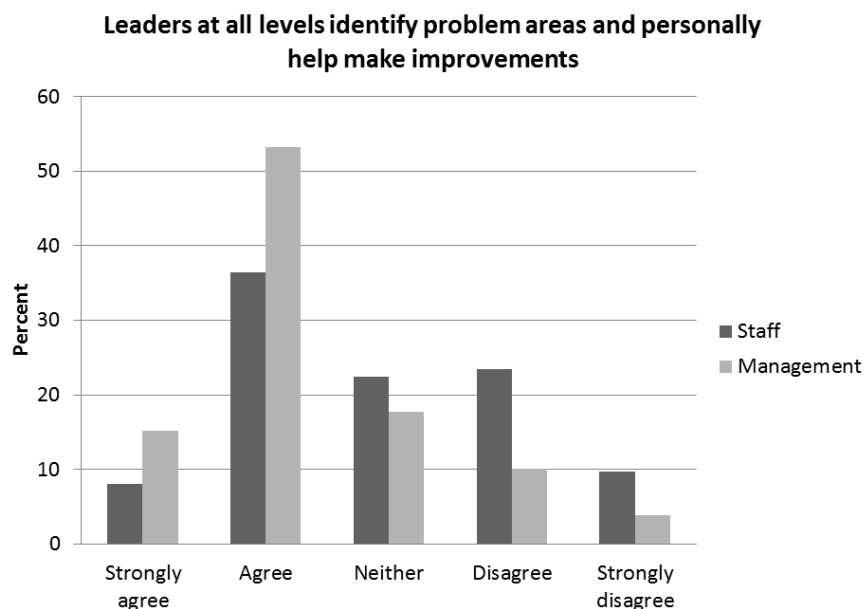


Figure 2 - Staff and management rating of leadership involvement in improvement (N=772)

It took 2 days of presentations, coaching and discussion to agree to the adoption of some type of lean/kaizen activity. The first areas of the organization to improve also had to be

agreed through consensus-building and a vote amongst 150 senior staff. Four broad programs were agreed, including two initiatives that kick-started the CI activity. One was labelled as a decision-devolvement project, and the second was to reduce bureaucracy through waste elimination and process redesign. The program was based around the concept of *100-day challenges*, where the problem was identified and analysed in the first 30 days, a solution proposed and approved by the CEO in the next 30 days, the proposal implemented between days 60 and 90 and the results presented and celebrated on day 100. Support was provided by lean and six sigma facilitators from within the existing staff.

As an example of the type of improvement implemented, figure 3 shows the process map for the process of applying for annual leave. This was typical of all administrative processes, whereby the process is very bureaucratic with many unnecessary steps and multiple auditing and checking steps.

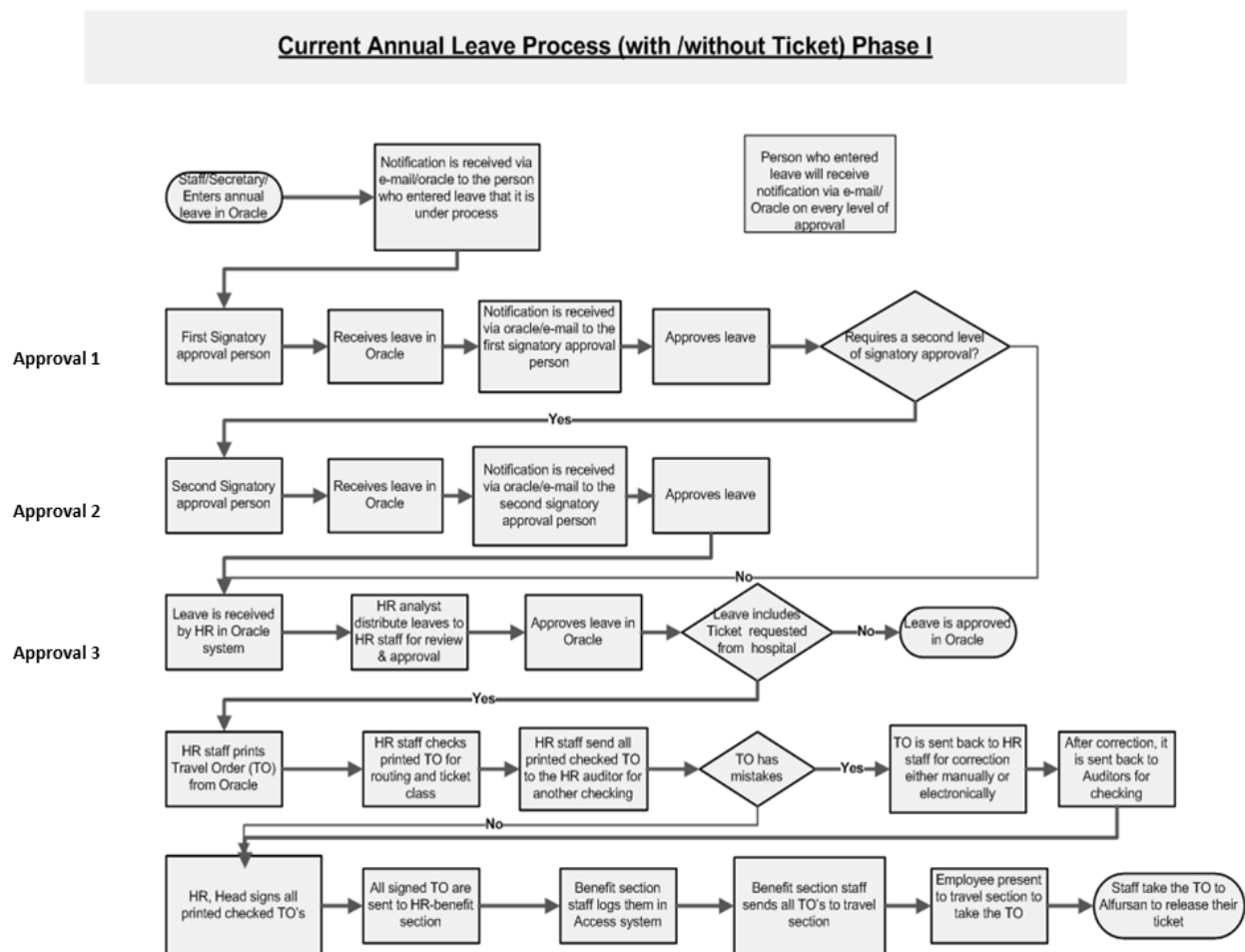


Figure 3 – The Process Map of the hospital's leave application process

The 100-day challenge above, led by the Chief Operating Officer (COO), successfully completed with a 75% reduction in the total waiting time for leave applications. Some work was completed in 6 steps where 30 were previously needed. This change was sustained even after the Head of Administration (a Saudi prince) requested new steps be

(re)introduced because there weren't enough checks in the system. It highlighted the cultural issues to sustain the changes. The 100-day challenge itself was regarded as a very fast change process culturally and forced many existing norms to be challenged. As one example, the COO took a decision by himself under time pressure. When asked by a director which committee had made the decision, he replied "*the committee of me*". In another meeting one team member described the first phase of work as "*deciding where we need to spend the money*". This notion was robustly refuted. The celebration at the end of the challenge matched the culture well. Certificates were handed to all CI participants and were always proudly displayed by staff. These certificates have huge currency amongst local staff (but sometimes referred to as "Saudi bling" by expats).

Team composition was only partially controlled. It was always essential to have a senior manager (C-level) sponsoring the team, so that decisions could be taken faster and existing obstructive policies and procedures could be worked around. In this culture rules are broken most of the time but it needs someone with influence to allow this to happen. Teams were always multi-cultural, multi-level and mixed gender.

After the first round of 100-day challenges, there was a second set organized. The amount of improvement activity increased approximately six-fold and only became constrained by staff availability, not organization resistance. CI became the high-visibility, motivating activity to become involved with in the organization. The only team failure during the first 12 months was an ambitious plan to improve patient flow in the Emergency Department. This failed due to clinician resistance, as it focused attention on clinical outcomes and challenged existing team-working norms.

Discussion

In the timescale we cannot claim that Kaizen was successfully implemented. We can only claim that it was successfully launched and was sustained through the difficult early stages of development. We can analyse the factors that allowed us to get so far down the road towards CI. Using our earlier framework (table 1) as a starting point, the following observations can be made:

1. Motivations for CI

We can first observe that there was no competitive or financial pressure to improve the performance of the system. If more money was required it could be requested, perhaps with a time delay. There was some rivalry with other providers, but this was a tribal/relationship issue not a performance issue. Historically the hospital had been seen as the best in the Kingdom and this reputation was mostly still intact. There were no major policy changes within the Health Ministry that would encourage performance improvement, although a large building program of secondary and primary facilities was planned that might cause recruitment issues. It is interesting that the absence of this "burning platform" did not eliminate motivation to do the work.

The CI initiative was introduced as a combination of the analysis by expat managers of the potential for CI and a general need to achieve some process stability in combination with support from a CEO who was persuaded that some

challenging issues could be tackled. Most expat managers at every level could easily see the rationale behind the suggestion.

At a non-managerial level consensus was achieved because a case could be made that CI would improve the work experience for staff. All staff suffered the burden of pointless administrative tasks and repeated failure of systems. It is telling that this motivated more people than the prospect of better patient care.

2. Barriers to CI

In principle the case site exhibited most of the characteristics that would create barriers to improvement. This is a public sector organization with a pace of life/change that is far slower than most other public organizations in the West. Furthermore, this slow pace is culturally and systemically embedded. There was insufficient attention paid to patients, the staff morale and motivation often low, limited understanding of CI with silo-based working. Leaders often had no experience of leading any kind of change, lacked confidence in their own abilities and saw personal risks. The existing organization structure generally shielded local senior managers because most departments also had expat managers or consultancy teams who supported the work. From the earlier narrative it can be seen that the most obvious problem is the extent of the bureaucratic, error-prone procedures within the system. However, the staff involved in the early stage of implementation saw that this was a necessary battle to achieve their personal objectives.

3. Success Factors

Some of the previously listed success factors were not present during implementation. There were gaps in management capability to implement change, little organization readiness for change, no systems thinking and limited external support. Many of the elements of the local culture would be regarded as barriers, not success factors. For example, the gender segregation should have limited the level of team-working. At celebration events, in public facilities such as conference centers, male and female managers had to sit separately. However, some of the customs associated with tribal relations did help team-working and certainly helped to achieve a no-blame environment.

Naturally present as a success factor is the availability of resource, especially any necessary finance. There are two caveats. First, as we observed, money is seen as the solution to every problem in this environment and it was difficult to condition team behaviour to look for low-cost redesign solutions to problems. Secondly, despite the site being over-staffed, all staff still felt pressured and could not spend the time they wanted on improvement activity.

Two success factors were managed in to the implementation. The most obvious of these is the choice of a 100-day challenge approach to CI, supported by the lean and six sigma tools such as PDSA, A3 planning and DMAIC. The speed of change within the 100-day challenge matched the expectations of the local culture

in that it was challenging but not impossible. It recognized that many actions we would take for granted take longer in this environment. Second, we achieved an enthusiasm for change by careful project selection so that individuals' intrinsic motivation was achieved by working on something that benefited them as individuals. As a strategy, we were only trying to achieve some basic stability (ref) in processes and not go immediately to a large-scale system redesign. The activity was targeted at team-building and capability building more than system performance improvement.

Conclusions

In summary we can identify the following answers to the research questions we set, in relation to this attempt to implement CI:

1. The motivation for the adoption of CI for almost all staff was mainly personal, to improve their own employment experience, mainly through the improvement of the bureaucracy that affects their work life. They were insulated from any external forces for change and did not extensively consider patient care improvement as a motivating factor.
2. It is difficult to imagine a situation where there would be more structural, organizational and cultural barriers to change. However, partially due to the lack of time pressure and the individual motivation for involvement these barriers were steadily overcome. The one factor that should have been an asset, access to resource, was actually a barrier to the development of redesign solutions.
3. It was difficult to establish many of the generally accepted success factors associated with CI. However, it was possible to create sufficient enthusiasm for change, initially amongst a small group of participants that later expanded into multiple teams.
4. There were a number of adaptations of the content and process of the CI initiative that were essential. In the West we can be relatively open about problems and underperformance. In this situation we had to be careful not to accuse someone or embarrass them. The consequences would be an irreversible loss of relationship – at time it felt like a binary situation: you are for someone's tribe or against it. The CI had to be no-blame, low threat. The slower speed of change, the voluntary nature of participation, the visible non-financial reward system, the project themes and the coaching of senior staff were all essential adaptations or characteristics.

References

- Avolio B, Waldman D, Yammarino F. 1991. Leading in the 1990's: The Four I's of Transformational Leadership. *Journal of European Industrial Training* 15(4): 9-16.
- Bateman, N. and N. Rich. 2003. Companies' perceptions of inhibitors and enablers for process improvement activities, *International Journal of Operations and Production Management*, 23(2):185-199
- Bessant, J., Caffyn, S. and Gallagher, M. (2001), "An evolutionary model of continuous improvement behaviour", *Technovation*, 21, 67-77.
- Bessant, J. and D. Francis.1999. Developing strategic improvement capability, *International Journal of Operations and Production Management*, 19(11): 1106-1119
- Bhuiyan, N., A. Baghel 2000. An overview of continuous improvement: from the past to the present, *Management Decision*, 43(5):761 – 771
- Brunet A.P, S. New. 2003. Kaizen in Japan: an empirical study, *International Journal of Operations & Production Management*, 23(12): 1426-1446

- Caffyn, S. 1999. Development of a continuous improvement self-assessment tool, *International Journal of Operations & Production Management*, **19**(11):1138 – 1153.
- Cuscata, K.N..1998. Kaizen Blitz attacks work processes at Dana, *IEE Solutions*, **April**: 29-31.
- de Jager, B., C. Minnie, J. de Jager, M. Welgemoed, J. Bessant, D. Francis. 2004. Enabling continuous improvement: a case study of implementation, *Journal of Manufacturing Technology Management*, **15**(4): 315 – 324.
- Elgar, T. and Smith, C. (1994), *Global Japanization: The Transnational Transformation of the Labour Process*, Routledge, London.
- Glover, W., J.A. Farris, E.M. Van Aken, T.L.Doolen. 2011. Critical success factors for the sustainability of Kaizen event human resource outcomes: An empirical study, *International Journal of Production Economics*, **132**: 197-213
- Hammersley, M. and P. Atkinson. 2007. *Ethnography: Principles in Practice (3rd Edition)*, Routledge, NY.
- Harter, G.G. and K. Lousberg. 1998. Rapid Improvement: accelerating the pace of change. *ASQ Annual quality Congress proceedings*, p520 - 527
- Heard, E. 1999. Rapid Fire Improvement with Short-cycle kaizen, *Hospital Materiel Management Quarterly*, **20**(4):15 – 23.
- Imai, M. (1986), *Kaizen: The Key to Japanese Competitive Success*, McGraw-Hill, New York, NY.
- Imai, M. (1997), *Gemba kaizen: A Common Sense, Low-Cost Approach to Management*, McGraw-Hill, NY.
- Irane, Z. and J.M. Sharp.1997. Integrating Continuous Improvement and Innovation into a Corporate Culture: A Case Study, *Technovation*, **17**(4): 225-226.
- Kaye, M., R. Anderson. 1999. Continuous improvement: the ten essential criteria, *International Journal of Quality & Reliability Management*, **16**(5): 485 – 509.
- Keating, E., R. Oliva, N. Repenning, S. Rockhart, J. Sterman. 1999. Overcoming the Improvement Paradox, *European Management Journal*, **17**(2):120-134.
- Maurer, R. 2013. Building a quality culture one small step at a time, *Journal of Quality and Participation*, **Jan**: 8-11
- McNichols,T., R. Hassinger. G.W. Bapst. 1999. Quick and continuous improvement through kaizen blitz, *Hospital Materiel Management Quarterly*, **20**(4):1-7
- Moe, J.L., G. Pappas, A. Murray. 2007. Transformational leadership, transnational culture and political competence in globalizing health care services: a case study of Jordan's King Hussein Cancer Center, *Globalization and Health*, **3**:11 Available at <http://www.globalizationandhealth.com/content/3/1/11>, access date Jan. 6, 2014.
- Moore, F. 2005. *Transnational Business Cultures: Life and Work in a Multinational Corporation Hants, UK*. Ashgate Publishing Limited, Burlington, VT.
- Moore, F. 2012. Learning from Experience: Ethnographic Research, *International Business Studies and Mainstream Anthropology*, in Wang, C.L., D.J. Ketchen , D.D. Bergh eds. *West Meets East: Building Theoretical Bridges (Research Methodology in Strategy and Management, Volume 8)*, Emerald Group Publishing Limited, Bradford,UK, pp.173-191
- O'Reilly, K. 2005. *Ethnographic Methods*, Routledge, New York, NY.
- Radnor, Z., P. Walley, A. Stephens, G. Bucci. 2006. *Evaluation of the Lean Approach to Business Management and Its Use in the Public Sector*, Scottish Executive, Edinburgh.
- Senge, P. (1990), *The Fifth Discipline*, Doubleday, New York, NY.
- Singh, J. and M. Singh. 2009. Kaizen Philosophy: A review of the literature, *The Icfai University Journal of Operations Management*, **VIII**(2):51-72
- UN. 2013. *Population Division International Migration Report 2013*
<http://www.un.org/en/development/desa/population/publications/pdf/migration/migrationreport2013/Chapter2.pdf> Last accessed January 31 2014.
- Utterback, J. (1995), *Mastering the Dynamics of Innovation*, Harvard Business School Press, Boston, MA.
- Wennecke, G. 2008. Lean in a week, Medical Lab Observatory, **August**: 28-31
- WHO. 2012. *Global Health Observatory Data Repository*, <http://apps.who.int/gho/data/view.country.17400> (accessed data January 31, 2014)