How to successfully implement Lean in healthcare organizations
The application of a socio-technical system-wide conceptual framework

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i. Introduction and research background

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   - First step
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   - Third step

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Introduction

Increasing demand for quality and efficiency gains in healthcare

Adoption of Industrial quality management and process reengineering practices

Lean (Toyota Production System) is basically about satisfying customer needs and continuously improving processes by optimizing flows, reducing waste and creating value with the direct involvement of the organization’s personnel
• Growth in implementation research

• Limited scientific focus on:
  - Understanding the variation in Lean interventions and their sustainability in healthcare
  - The influence of complex organizational and social context while introducing quality-improvement methods in healthcare
Investigating:

- the adaptation of the Lean intervention into different healthcare organizational contexts

- the organizational patterns associated with sustainable full implementation of the change programme
Research project overview

First step

What are the organizational and contextual conditions to be managed when implementing Lean intervention in healthcare organizations?

Second step


Third step

How Lean intervention and the interrelated components of the organizational system fit in different healthcare settings to support a long-term improvement programme?
RESEARCH OBJECTIVES
Offering an integrated overview of the state of knowledge on Lean in healthcare, with particular attention to the organizational conditions that play a relevant role in Lean change initiatives within healthcare organizations.

METHODOLOGY
Comprehensive literature review

FINDINGS / DISCUSSION
The specific traits of the healthcare context need to be taken into account while developing the change process. Seven categories of organizational factors determining successful Lean improvement initiative in healthcare have been identified.

Process-driven organization

- Information Systems
- Physical lay-out and spaces
- Integration within the organizational strategy
- Engagement of staff and management commitment
- Change management and organizational culture
- Availability of resources and organizational set-up

First step (2)
RESEARCH OBJECTIVES
Testing if the identified categories of organizational factors are capable to effectively capture the specific organizational conditions to be managed when implementing Lean in healthcare

METHODOLOGY
Case study approach

FINDINGS / DISCUSSION
The presence of specific contextual mechanisms identified within the macro-categories proposed has fostered the change (Information System category?).

Need for an integrated conceptual framework, incorporating the organizational context, to understand (i) how Lean is implemented and (ii) the configuration of organizational factors that supports sustainable Lean interventions in healthcare settings.

Centauri, F., Marsilio, M. & Villa, S. 2016. Implementare il modello Lean nelle organizzazioni sanitarie: il caso dell’Ospedale Galliera, Paper under submission (Mecosan) and presented at the AIES 20th Annual Conference “Fostering and governing innovation in healthcare based on evidence”, Sassari-Alghero
RESEARCH OBJECTIVES

Offering valuable insights into the adaptation of Lean across different healthcare settings by investigating how every implementation model (*) is leading - or not - to the sustainability of the change programme

(*) Implementation model: the result of the interactions between the interrelated organizational components and the Lean intervention
RESEARCH DESIGN

i. Socio-technical system-wide framework

A system perspective of organization (STS model) has been adopted to propose a theoretical framework capable of representing all the interrelated components (and their interdependencies within a systemic design) that play a relevant role in the change process. The socio-technical system-wide framework has been devised and refined by using evidence collected from the previous research steps.

ii. Multiple case study approach

- Sample of four hospitals operating in the Italian NHS
  → selection criteria: system-wide Lean adoption + significant history (at least 3 years)
- Multiple sources of evidence collected (data triangulation)
- Qualitative deductive content analysis
Third step – WIP (3)

EXTERNAL ENVIRONMENT

TECHNICAL SUBSYSTEM (TS)

- Core processes
- Tools
- Lay-out

SOCIAL SUBSYSTEM (SS)

- Goals
- Working Culture
- Human resources
- Organ. structure
- Operations Mgmt

LEAN
FINDINGS / DISCUSSION

The development of Lean as a working part of the organization requires coherent and concerted changes along the framework dimensions

→ Specific interrelated mechanisms within the framework, e.g.:
  - Supportive culture
  - Pervasive training programme
  - Presence of a Lean promotion team/group
  - Visible and sustained top management commitment
  - Balanced top-down approach
  - Functional silos breaking down
  - ...

Third step – WIP (4)
In order to maintain the change, mutual adaptation between organizational system and Lean intervention is required

→ Significant interactions (bidirectional influence), e.g.:
  - Lean / care-focused hospital model
  - Lean / regional regulations
  - Lean / spaces organization and lay-out
  - ...

FINDINGS / DISCUSSION
POSSIBLE IMPLICATIONS FOR:

i. **RESEARCH**
Valuable insights for future comprehensive and rigorous research on how and when Lean interventions work within healthcare organizations

ii. **PRACTICE**
Changes to better integrate quality improvement interventions into healthcare organizational processes (so as to avoid early collapses)

→ What are the critical interrelated organizational factors to be managed?
  → Improvement efforts should take into account specific traits of healthcare production processes (how to gain clinical buy-in?)
  → Optimization of Lean adoption through ongoing development and refinement (not prior to implementation)
Thank you for your attention!

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