

University of Southern Queensland

**IDENTIFYING AND MINIMISING PREVENTABLE DELAY
WITHIN THE OPERATING THEATRE MANAGEMENT
PROCESS: AN ADAPTED LEAN THINKING APPROACH**

A dissertation submitted

by

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ABSTRACT

This study examines how preventable delay could be identified and minimised by using adapted lean thinking within the Operating Theatre Management Process (OTMP). The study uses the operating theatre of a regional hospital in Toowoomba (Queensland, Australia) as a case study. The theoretical framework for this study comprised socio-technical system theory and coordination theory. From the perspective of socio-technical system theory, each activity within the OTMP has two types of elements: social elements and technical elements. Coordination theory, on the other hand, considers the coordination between various elements of the activities. Time and motion study has been employed to analyse activities in terms of operation, transportation, delay and monitoring within the operating rooms. Subsequently, adapted lean thinking has been employed as an integrating approach to identify preventable delay and disruption within both value added and non-value added activities. Identifying preventable delay within the value added activities inside the operating room is one of the most important contributions of this study.

This research uses an exploratory qualitative case study. The focus of this research is to study activities inside the operating rooms, rather than the whole OTMP. Notwithstanding the limited time available to the researcher within a Masters degree, the study sought to establish the direct link of the activities inside the operating rooms with patients' waiting time.

Data were collected from 22 surgery cases through direct observations. In each surgery, the research team followed patient progress from the pre-operative holding area through to discharge. The researcher observed and recorded the timing of all the activities inside the operating rooms. As much detail as possible was observed and recorded to capture sufficient details to allow identification of problems. Moreover, initial observation results were verified and additional information was collected as necessary through communications and interviews with medical staff (surgeons, scrub nurses, technicians etc.) and review of documents.

The study indicates that coordination, motion economy, consent form, protocol policy, and surgeon preference sheets were the major areas impacting on preventable delay in the operating theatre suite activities. With the application of lean thinking, the results suggest that preventable delay and disruption within both value added and non-value added activities could be eliminated or minimized through better work organization, motion economy training and better coordination of tasks.

For further study, a benchmarking based study could be conducted to see if similar sets of preventable delay are observed in other healthcare institutions. In addition, examination of other related sections in a hospital is highly desirable to identify the wide range of preventable delay within the OTMP. This, in turn, will help to improve OTMP efficiency and, accordingly, reduce the waiting time of waiting lists.

CERTIFICATION OF DISSERTATION

I certify that the ideas, data, results, analyses and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award except where otherwise acknowledged.

Signature of Candidate

Date

ENDORSEMENT

Signature of Supervisor

Date

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This research is part of a project titled ‘Adapted lean thinking for healthcare services’. The project has been approved by the Human Research Ethic Committee, Toowoomba & Darling Down Health Service District (Approval Number TDDHSD HREC 2007/027 – See Appendix 6)

LIST OF ACRONYMS

STS – Socio-technical system

CT – Coordination theory

VA – Value added

NVA – Non-value added

OTMP – Operating theatre management process

OTS – Operating theatre suite

OR – Operating room

PAH – Princess Alexandra Hospital

THS – Toowoomba Health Service

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