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**Towards a systemic understanding of  
a hospital waiting list:  
boundaries, meaning and power**

A thesis presented in partial fulfilment  
of the requirements  
for the degree of Doctor of Philosophy  
in Management Systems  
at Massey University

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## For Dawn

## Abstract

Hospital waiting lists are a feature of public health care services that result when demand appears to exceed supply, and serve as mechanisms to ration health care resources. While waiting lists are usually conceptualised as rational queues, the dynamics of waiting lists, especially radiology waiting lists, are more complex and still poorly understood. The present study has attempted to better understand a problematic waiting list by adopting a systems approach known as boundary critique. A case study of an ultrasound waiting list was undertaken in which in-depth and semi-structured interviews were conducted with a variety of stakeholders.

Viewing the ultrasound waiting list systemically highlighted the role that a radiologist boundary surrounding the detection and confirmation of abnormal pathology played in constructing the ultrasound waiting list as a problem. This boundary was enacted through the process of double scanning, a symbol of radiologist expertise. General practitioners and patients employed a wider boundary, which focused on the management of clinical uncertainty. When the system in focus was widened to include this boundary, the process of double scanning became problematic. Double scanning contributed to the growth of the ultrasound waiting list and exacerbated the difficulty faced by general practitioners and waiting patients in managing diagnostic uncertainty.

To manage the tension created between radiologist and general practice boundaries, non-radiologist stakeholders undertook unrecognised and under-valued work that helped maintain the radiologist-centred systems of process and structure. Radiologists also employed a discourse of inappropriateness that downplayed the significance of delayed general practitioner referrals, which served to reinforce the primacy of the radiologist boundary. Conflicting boundaries highlighted that the ultrasound waiting list was managed in a way that did not act in the interests of non-radiologist stakeholders such as general practitioners and waiting patients.

Stakeholders proposed a number of interventions to manage the growing ultrasound waiting list. However, these primarily served to further strengthen the radiologist boundary and viewed as such represented a narrow improvement in terms of the interests of non-radiologist stakeholders.

The process of boundary critique helped to reframe the ultrasound waiting list in terms of radiologist dominance. Interventions based on the boundary judgements of general practitioners, waiting patients and sonographers were developed. The present study argues that the ultrasound waiting list can be better understood in terms of the role that boundary judgements play in constructing notions such as expertise, illness and appropriateness, which underlie a common-sense understanding of need, demand and supply.

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*We continually find it important to realize that the way we have been brought up to perceive our world is not the only way and that it is possible to see beyond the “truths” of our culture. But metaphors are not merely things to be seen beyond. In fact, one can see beyond them only using other metaphors.*

*(Lakoff and Johnston, 1980, p. 239)*

## Glossary

### TERM

ACC	Accident Compensation Corporation. ACC is a crown entity that funds private and public health care services such as rescue helicopters and physiotherapy with the purpose of covering the cost of personal injury to New Zealanders.
Community-referred contracts	Community-referred contracts are a legal agreement between the Health Funding Authority and the ultrasound service to scan patients who have been referred by general practitioners and community-based specialists for a given number of dollars. Contracts such as this operationalised the purchaser/provider split on which the New Zealand health was funded between 1993 and 2000. As well as specifying contractual volumes, contracts could also be based on quality and timeliness.
Demand	Demand refers to a non-legitimatised claim on scarce resources, although it may also refer to all claims regardless of legitimacy in an aggregated sense. When legitimised by a general practitioner's referral or specialist prioritisation, demand is converted into need. Both demand and need are problematic concepts, which depend on the situational notion of appropriateness. Demand is influenced by a multitude of factors ranging from increased public expectations to epidemiology transitions to the availability of health care services. Continuing problems associated with the growing gap between supply and demand has led to the adoption of a variety of demand reduction strategies including encouraging healthy life-styles and patient co-payments for health care services.

Double scanning	Double scanning is formally known as second look sonography and occurs when a radiologist rescans the patient in order to confirm to the sonographer's original findings. The stated aim of double scanning is to increase diagnostic accuracy through minimising the probability of missing abnormal pathology.
General practice	In New Zealand, a general practice setting is where general practitioners and practice nurses deliver primary health care to patients and their families in the community. General practices are mostly privately owned by general practitioners but publicly subsidised. Larger general practices may offer plain film radiography, physiotherapy and counselling services as well as health care services traditionally offered in smaller practice settings.
Health systems management	Health systems management is a term widely used to refer to the management of health care services and health care organisations. It is an applied field, in which organisational and management theories are applied to the planning, resourcing, organisation and delivery of individual and population health care services.
HFA	Health Funding Authority. At the time of data collection, the HFA was charged with the responsibility of allocating health funding via contracts to different geographical, priority and clinical areas. On 1 January 2001 the HFA merged with the Ministry of Health and the District Health Boards took on the combined role of purchaser/provider.
Inpatient	An inpatient is a patient who is admitted to hospital for

treatment.

Outpatient	In contrast to an inpatient, an outpatient is a patient who is not admitted but nevertheless undergoes diagnosis/short-term treatment at hospital.
Primary care	Primary care is health care delivered to patients and their families in a community setting. Primary care aims to comprehensively manage a variety of common illness and injuries drawing on the expertise of general practitioners, nurses, physiotherapists, counsellors and other health professionals. In New Zealand, primary health care services are usually delivered in the general practice setting. Primary care has traditionally been seen as fulfilling a gatekeeper role for secondary care services. However, increasing health care costs and declining health gains have seen initiatives to strengthen primary health care services. This has led to a broader view of health and a shift away from the medical model, which equates health with the absence of disease, to an understanding that views health as embedded in sociocultural, economic and political contexts.
Rational queue	A commonly adopted framework for understanding and managing waiting lists, which views a waiting list as an imbalance between supply and demand.
Secondary care	Secondary care refers to specialist health care services not offered in a primary care setting. Secondary care is usually associated with hospital-based medicine.
Supply	Supply is a catchall expression that refers to the capacity of a health care service to fulfil legitimate demand or need. While

supply is quantified in terms of people-hours and machine-hours, operations management philosophies such as TOC have brought a more sophisticated understanding, and highlight the importance of the bottleneck in limiting the output or the ability of a health care service to fulfil need. Sociologically, supply is a problematic concept that is contested by clinicians, policy makers and other health professionals. As well as calls for increased funding, the growing gap between supply and demand has seen increasing plays for autonomy by other non-medical health professionals such as nurses and radiographers, as typified by nurse prescribing.

TOC

Theory of Constraints. TOC is an operations management philosophy that regards the performance of an organisation determined by a bottleneck or a constraint.

TSI

Total Systems Intervention. TSI is a meta-methodology that employs a variety of systems methodologies in an appropriate and systemic manner to resolve complex organisational problems.