
ARE PHYSIOTHERAPY SCREENING CLINICS COST EFFECTIVE IN IMPROVING ORTHOPAEDIC OUTPATIENT SERVICES?

Executive Summary

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ABOUT CAHE

The Centre for Applied Health Economics (CAHE) is a research centre located within the School of Medicine, Griffith University. The Centre is led by Professor Paul Scuffham and currently employs a team of health economists. In addition, associated with the Centre are Post-doctoral Fellows, PhD students, and an Associate Professor in Biostatistics.

Research and key skill areas:

- High quality health research relating to improved quality of life for Australian and international populations
- Contract research for government and industry to have a direct impact on health policy in Australia and internationally
- Education and training, including higher degree research students and the workshops in Health Economics
- Methods of economic evaluation relating to health care interventions (pharmaceuticals, medical devices, health care programs)
- Health care financing including preferences and priority setting in health care
- Evaluation of health services and health policy

ABOUT THE OPSC AND MDS

The Orthopaedic Physiotherapy Screening Clinic and Multidisciplinary Service (OPSC & MDS) is a Queensland Health initiative to expedite access to appropriate care and reduce waiting times for orthopaedic outpatients not likely to require surgery. Within this model, physiotherapists working in an advanced scope of practice provide a consultancy service to patients on specialist orthopaedic waiting lists, delivering early expert assessment and diagnosis along with a coordinated multidisciplinary non-surgical management approach to their condition. The OPSC & MDS is now an integral part of service delivery for public patients with chronic musculoskeletal conditions and the service is currently established in 14 public hospitals in Queensland.

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Are physiotherapy screening clinics cost effective in improving orthopaedic outpatient services?

Brisbane: Menzies Health Institute Queensland, Griffith University.

EXECUTIVE SUMMARY

PROJECT TITLE

“Are physiotherapy screening clinics cost effective in improving orthopaedic outpatient services?”

BACKGROUND

Musculo-skeletal disorders affect a large proportion of the Australian population and demand for orthopaedic reviews is higher than what can be met by current specialist services. Excess demand over what can be provided within these resource constraints creates queues for services and lengthy waiting times can ensue. In response to this constraint in orthopaedic services, the Orthopaedic Physiotherapy and Screening Clinic & Multidisciplinary Service (OPSC & MDS) was initiated to provide a complementary faster pathway for patients waiting on orthopaedic specialist waiting lists who would be unlikely to require surgery and would be likely to respond to conservative treatment. Nevertheless, long waiting times are still commonly experienced by patients with non-urgent conditions.

Health services typically involve resources (e.g. beds, specialised staff) that are at full capacity. Traditional economic models (either decision analysis or Markov models) are unable to explicitly model resource constraints. In these models, capacity constraints are captured using fixed delays programmed as model inputs. In short, these models provide a static view of the health service rather than a more realistic dynamic view. In contrast, discrete event simulation (DES) is a modelling technique that can dynamically model health systems. Patients in the DES model interact with the constrained resources so that queues form if demand exceeds supply.

This research aimed to evaluate the most efficient method of delivering orthopaedic outpatient services in a typical Queensland hospital outpatient service. Specifically, the purpose of the study was to compare the cost-effectiveness, patient throughput and waiting times of various combinations of specialist orthopaedic outpatient services and the OPSC & MDS.

METHODS

A DES model was developed in Simul8© to model the expected costs, outcomes, queues and waiting times for orthopaedic outpatient services. Input data was derived from a prospective observational case-control study of two facilities and from a previous retrospective review, audit and waiting list data.

Eight scenarios, comprising of various configurations of services which may be used to address unmet demand, were modelled over a 5.25 year time horizon. These involved increasing the capacity of any, or all, of:

1. OPSC & MDS;
2. Surgeon only orthopaedic outpatient clinics;
3. Orthopaedic surgery throughput.

RESULTS

The impact of the modelled scenarios on patient throughput, waiting times for initial consultations (OPSC & MDS and orthopaedic services), waiting times for surgery, and cost-effectiveness (cost per quality-adjusted life year) on the typical hospital were evaluated (Table ES.1). The results for each scenario are presented in ascending order relative to increasing resource use (i.e. lowest to highest cost to implement the additional services).

Table ES1. Impact of all scenarios on cost-effectiveness, patient throughput and waiting times, ordered by increasing resource use

Scenario	Throughput		Waiting times		Cost-effectiveness
	Total patients	Initial consultation ^a (days)	Surgery (days)	ICER (cost per QALY)	
Current levels of service	5,683	993	38	Base	
OPSC doubled	7,472	851	37	\$8,301	
OPSC tripled	9,252	656	35	\$8,140	
Ortho OPD doubled	8,912	433	302	\$20,864	
Ortho OPD / surgery doubled	8,912	433	16	\$36,218	
OPSC + Ortho OPD doubled	10,862	448	322	\$12,745	
OPSC + Ortho OPD / surgery doubled	10,862	448	15	\$25,501	
Ortho OPD / surgery tripled	9,262	357	13	\$31,164	
OPSC + Ortho OPD / surgery tripled	13,284	303	11	\$20,536	

ICER: incremental cost-effectiveness ratio; QALY: quality-adjusted life year; Ortho OPD: orthopaedic outpatient services; OPSC: orthopaedic physiotherapy screening clinic and multidisciplinary service.

^a Total waiting time for patients to attend an initial consultation in either pathway (OPSC & MDS or orthopaedic services).

The scenarios with the least impact on the healthcare resource use (such as doubling or tripling OPSC & MDS) are also more cost effective; however, these scenarios alone do not reduce waiting times as much as other scenarios when a larger proportion (50%) of patients are directed to OPSC & MDS, compared to current service provision (23%). The patient throughput achieved by doubling or tripling OPSC & MDS is relatively similar to that of other scenarios with a greater impact on healthcare resource use (such as increase in orthopaedic outpatient services alone or with OPSC & MDS).

DISCUSSION AND CONCLUSIONS

Modelling over a five year time frame demonstrates that current resource allocations to orthopaedic outpatient services are unable to match demand for services. As a result, lengthy queues eventuate and will continue to build up creating unacceptable delays. Various options are available for increasing supply to match demand; however, these are not all equal in terms of cost-effectiveness, patient throughput and effect on waiting times.

In the scenarios modelled in this report, increasing the capacity of the OPSC & MDS is likely to be the most cost-effective option for increasing the capacity of orthopaedic outpatient services in the example hospital in order to reduce queues and waiting times. However, to reduce waiting times to a reasonable level, investment in both orthopaedic specialist services and OPSC & MDS would be required.