

# ***Hospital Performance: Length of Stay***

Tabled 10 February 2016

The Auditor-General provides assurance to Parliament on the accountability and performance of the Victorian Public Sector. The Auditor-General conducts financial audits and performance audits, and reports on the results of these audits to Parliament.

On 10 February 2016, the Auditor-General tabled his performance audit report, *Hospital Performance: Length of Stay*.

## Overview

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Audit is second in a series.

- First looked at how efficiently high-value equipment was being used.
- This audit examined how efficiently acute patients were being managed—what hospitals call 'length of stay' (LOS).

LOS is a key indicator of how efficiently hospitals are being managed—a shorter stay means that more beds are available for more patients.

This audit is the second in a series, focusing on the efficiency of Victorian public hospitals.

The first looked at how efficiently high-value equipment was being used: this audit examined how efficiently acute patients were being managed—what hospitals call 'length of stay' (LOS).

LOS is a key indicator of how efficiently hospitals are being managed—a shorter stay means that more beds are available for more patients.

We looked at acute patient LOS because acute patients use the most resources.

## Overview – *continued*



Examined hospital efficiency because health expenditure remains the fastest growing area of national and state government budgets.

We found:



reducing widespread LOS variation could save almost **\$125 million** per year



the Department of Health & Human Services (DHHS) and hospital management can collectively reduce inefficiencies relatively easily.

Examining hospital efficiency is important because health expenditure remains the fastest growing area of national and state government budgets.

Hospitals should seek to minimise the time patients spend in hospital, without compromising health outcomes.

We found a 29 per cent variation in LOS between the most efficient and least efficient hospitals. This indicates substantial inefficiencies, such as lost opportunities to free up hospital beds, to treat more patients and to reduce significant unnecessary costs.

Based on our modelling, almost \$125 million could be used for other services—this is equivalent to an entire 396-bed hospital—more than all the beds available at The Royal Children's Hospital.

The Department of Health & Human Services (DHHS) and hospital management can collectively reduce inefficiencies relatively easily.

## The audit approach

- We used data at the patient level from DHHS
- Every patient stay from 2011–12 to 2013–14
- Fair comparisons by adjusting for differences between:



patients



treatments



hospitals

**This approach determines relative LOS efficiency and is accepted by DHHS and hospitals.**

We used three years of data from 2011–12 to 2013–14 inclusive. This data was submitted by hospitals to DHHS and captures information about every patient admitted to hospital. This means almost 1.5 million hospital stays were analysed.

We adjusted for patient characteristics so that we compared similar patients undergoing the same treatment. Things that influence LOS, and were adjusted for, include:

- what they were in hospital for—a hip replacement will justifiably take longer than the removal of a gall bladder
- patient age—the very old and very young often take longer to treat for the same medical condition
- patient complexity—multiple medical conditions often means a longer hospital stay
- and how a patient comes in to hospital—a planned hospital stay can be shorter than an emergency visit.

We peer-grouped hospitals to make comparisons fairer by adjusting for differences such as hospital size, service provision and location.

We looked at all clinical activity first, then looked at eight high-volume treatment groups in detail.

This approach determines relative LOS efficiency and is accepted by DHHS and hospitals.

## Focus of this audit

### Key areas examined

Whether:

- public hospitals manage LOS efficiently
- DHHS supports hospitals to achieve efficient LOS.

### Audit scope

- DHHS and 21 large metro and regional hospitals

We examined whether public hospitals manage LOS efficiently and whether DHHS supports hospitals to achieve efficient LOS.

The audit scope consisted of DHHS and 21 large metropolitan and regional hospitals.



## LOS variation between similar hospitals

- Almost 145 000 bed days and **\$125 million** per year could be made available to treat other patients.
- Peer-grouping hospitals did not reduce the variation—some hospitals within each peer group are achieving efficient LOS, while others are not.

**Significant lost opportunity in both bed days and cost.**

We found that almost 145 000 bed days and \$125 million per year could be made available to treat other patients if each hospital was as efficient as the best performing hospital in its peer group.

We also found that peer-grouping hospitals did not reduce the variation—some hospitals within each peer group are achieving efficient LOS, while others are not.

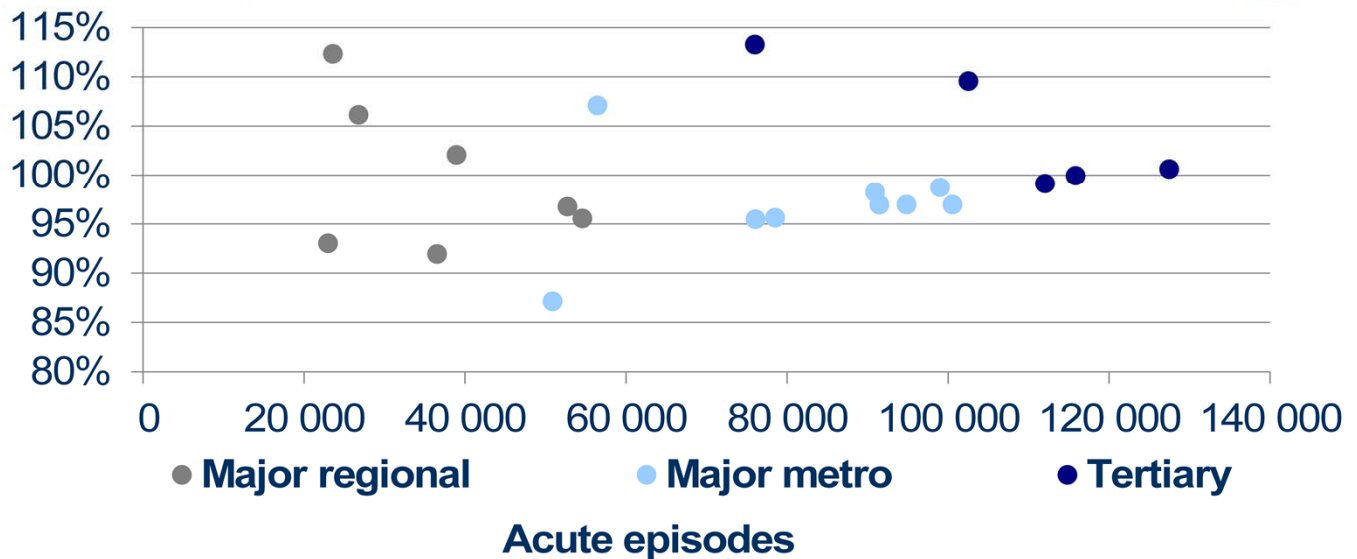
For example:

- tertiary hospitals such as St Vincent's Hospital and Austin Hospital could each potentially release around \$10 million and over 10 000 bed days every year
- major metropolitan hospitals could, on average, potentially release around \$10 million and 12 000 bed days every year
- major regional hospitals could, on average, potentially release over \$3 million or almost 4 000 bed days every year.

Collectively, this represents a significant lost opportunity in both bed days and cost, and highlights the value of the audit.

## LOS variation between similar hospitals

### Relative stay index



The graph on this slide shows that there is no clear relationship between the relative stay index of a hospital and its activity or peer group.

A relative stay index (RSI) allows hospitals' LOS to be compared. The average RSI value is 100 per cent—RSI values above this indicate longer LOS and potential inefficiency, while RSI values below this indicate shorter LOS and relative efficiency.

## LOS varied for particular patient groups

- LOS for particular patient groups varies significantly.
- Hospitals were relatively efficient at some types of treatment, but not at other types of treatment.

**Hospital management and DHHS need to understand why such variation exists.**

We then looked at LOS variation for particular patient groups in more depth.

There was also significant variation in LOS across treatment types: that is, while one hospital was relatively efficient at surgical procedures (such as hip replacements), it was relatively inefficient in others, such as treating heart failure.

This means that for the major metropolitan hospitals, the best performing hospital is discharging similar patients almost two days earlier than the poorest performing hospital.

Hospital management and DHHS need to understand why such variation exists.

We then sought reasons from hospitals for particularly good and poor LOS performance for each treatment group.



## Factors influencing LOS in hospitals

- Intensive case management
- Continuing care in the community
- Scheduling of diagnostic tests and referrals
- Access to sub-acute facilities

**Factors increasing LOS can all be reduced or eliminated by hospital management or DHHS.**

Hospitals reported four factors that influenced LOS:

- intensive case management, particularly pre-admission assessments and targeted admissions, and discharge planning using risk assessments
- continuing care in the community, delivered through nurse-led multidisciplinary teams and through the DHHS-funded Hospital Admission Risk Program
- scheduling of diagnostic tests and referrals, particularly internal tests and referrals to external service providers
- access to sub-acute facilities such as rehabilitation, residential aged care and palliative care facilities.

These factors that increase LOS can all be reduced or eliminated by hospital management or DHHS.

## Recommendations

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		Accept
That DHHS:		
1.	regularly analyses its data and seeks reasons from hospitals for significant LOS variation	✓
3.	<ul style="list-style-type: none"> <li>provides and promotes annual benchmarking information for LOS</li> <li>reviews sub-acute capacity</li> <li>funds and promotes programs, based on identified reasons for shorter and longer LOS, to assist hospitals to improve LOS efficiency</li> <li>evaluates effectiveness of targeted programs</li> </ul>	✓

In summary, we made four recommendations —two for DHHS and two aimed at public hospitals.

All four recommendations are about better using data to explain and reduce variation in length of stay.

## Recommendations

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		Accept
That public hospitals:		
2.	benchmark their length of stay performance and explain to DHHS reasons for significant LOS variation	✓
3.	<ul style="list-style-type: none"> <li>report on LOS performance to their board</li> <li>identify reasons for variation in LOS</li> <li>implement programs to increase LOS efficiency</li> </ul>	✓

The department accepted both recommendations and has provided a detailed outline of how it intends to address each recommendation and by when it intends to achieve these actions.

This is contained in Appendix B of the report. The Auditor-General will monitor this progress over time.

## Key messages

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**Significant lost opportunity in both bed days and cost.**

**Hospital management and DHHS need to understand why such variation in LOS exists.**

**Factors increasing LOS can all be reduced or eliminated by hospital management or DHHS.**

The key messages are that:

- there is significant lost opportunity in both bed days and costs
- hospital management and DHHS need to understand why such variation in LOS exists
- factors increasing LOS can all be reduced or eliminated by hospital management or DHHS.

## Overall message

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**This audit provides clear opportunities for hospital management and DHHS to collectively increase hospital efficiency.**

The overall message is that this audit provides clear opportunities for hospital management and DHHS to work together to increase hospital efficiency.



## Relevant audits

- *Efficiency and effectiveness of Hospital Services: High-value Equipment (25 February 2015)*

Relevant audits include *Efficiency and effectiveness of Hospital Services: High-Value Equipment*, which was tabled in February 2015.

## Contact details

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