



Managing Acute Patient Flows



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Victorian Auditor-General's Office
Auditing in the Public Interest

The Hon. Robert Smith MLC
President
Legislative Council
Parliament House
Melbourne

The Hon. Jenny Lindell MP
Speaker
Legislative Assembly
Parliament House
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my performance report on *Managing Acute Patient Flows*.

Yours faithfully



D D R PEARSON
Auditor-General

12 November 2008

Foreword

Demand for acute care in Victoria's public hospitals has grown steadily over the past decade, due largely to an ageing and growing population and increases in chronic illness. To manage this demand, hospitals need sufficient capacity and to use it effectively.

Capacity is an important concept. It extends beyond the provision of beds to include care models such as day surgery and 'Hospital in the Home', both of which increase a hospital's capacity to treat patients.

This audit examined the effectiveness and efficiency of patient flow in Victoria's public hospitals, including patient admission and discharge practices and how hospitals managed their beds—all of which impact on a hospital's capacity to treat patients.

Compared with other Australian states, Victoria's health system uses its acute inpatient resources efficiently, with greater patient throughput and shorter stays in hospital. However, there is much room for improvement in bed management processes, balancing elective surgery and emergency department admissions, and hospitals' timeliness in discharging patients. These areas can create unnecessary delays and slow the flow of patients through the hospital.

This report makes recommendations designed to improve the flow of patients through the hospital system and the accessibility of patient care. Implementation of the recommendations will require significant redesign of current systems and processes. It will also require joint effort and commitment from government agencies and all levels of hospital staff.



D D R PEARSON
Auditor-General

12 November 2008

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1 Executive summary

1.1 Introduction

Victoria's public hospitals are major providers of acute and sub-acute health care. Acute care involves diagnosis and intensive treatment over a short time frame to reduce the symptoms or severity of illness or to provide a cure.

Hospitals most often provide acute care:

- in emergency departments
- through the provision of elective and emergency surgery
- through the provision of medical inpatient care
- for planned treatment of existing illness, such as chemotherapy or renal dialysis.

Traditionally, hospitals have treated these patients in an acute inpatient setting, such as a hospital ward. The ability to move patients into and out of an acute inpatient setting without undue delay, while maintaining appropriate standards of care is a key aim of the public hospital system.

Demand for acute care has increased steadily over the past decade and Victoria has the second highest public hospital admission rate in Australia. The ability of hospitals to manage this demand relies on there being sufficient capacity across the health system. Traditionally, hospital capacity has been measured by the number of available beds. However, this is no longer a particularly useful measure of capacity in light of new models of care such as day surgery and bed substitutes such as Hospital in the Home (HITH), which reduce the need for acute patients to stay overnight, or longer.

The changing models of care and a shift to same-day services have resulted in shorter hospital stays and reduced the need for more beds across the hospital system. How a hospital applies the models of care and manages the flow of patients through the hospital from admission to discharge, has a greater bearing on its capacity to treat acute patients than the number of available beds.

Victoria compares favourably with other states in its use of acute inpatient beds, having both the highest level of bed utilisation and the shortest average length-of-stay, indicative of a comparatively efficient public hospital system.

Nevertheless, delays in access to emergency departments and elective surgery indicate that there is room for improvement in the way that Victorian public hospitals manage their patient flows.

Good patient flow has patients moving through a hospital without delay, eliminating waits and delays and saving time, effort and costs. Realistically, perfect patient flow through a hospital is not achievable, however, the extent to which hospitals manage the identifiable bottlenecks that interrupt flow and slow a patient's journey has a direct influence on patient flow.

A significant cause of bottlenecks and delays in hospitals is 'variation'. Managing variation in patient flow is a natural part of every health and hospital system and requires differences in patient illness and injury, demand through emergency departments and patient demographics to be addressed. Variation can lead to significant differences in the average length-of-stay for the same patient condition across hospitals.

1.2 Audit objective and method

The audit objective was to determine whether patient flow and bed management in Victoria's public hospitals was effective and efficient. To achieve this objective, the audit examined how the Department of Human Services (DHS) and health services:

- planned for inpatient services
- managed demand for inpatient services (focusing on program interventions)
- managed planned and unplanned admissions
- managed the use of inpatient beds
- discharged patients from an inpatient setting (either to within their homes with community support or residential aged care facilities).

1.3 Findings

Planning for acute inpatient services

Both DHS and hospitals plan for inpatient services to provide sufficient capacity, in terms of resources and care models, to meet demand.

DHS has developed planning frameworks for both metropolitan and regional and rural hospitals that consider service, capital and workforce needs: the *Metropolitan Health Strategy* (MHS) for metropolitan hospitals and *Rural Directions for a Better State of Health* (RDBSH) for rural and regional hospitals. DHS is developing a health asset strategy to guide its expenditure and service planning over the next ten years.

Each of the five hospitals we audited conducted service planning that took account of acute inpatient services and informed future capital requirements. Planning occurred in collaboration with DHS, which also coordinated the process. This gave DHS an understanding of the system-wide implications of individual service plans and whether they were consistent with the strategic directions for each program area.

The availability and use of reliable data is essential for effective planning. It is used to identify trends and patterns in the demand for, and use of, health services and enables planners to target funding and resources accurately. Much of the data used to inform planning for DHS and hospitals came from datasets that DHS maintained. However, the mechanisms to manage data reliability did not always ensure that the data were reliable.

Each of the hospitals used a range of clinical and administrative data to plan, monitor performance and improve practices. Hospitals not having benchmarking data limited their ability to identify areas for improvement. DHS's recent variation project aims to rectify this by providing detailed benchmarking data for acute care.

DHS purchases acute inpatient services through the casemix funding system and links into hospital planning through the negotiations around the annual Statement of Priorities. Casemix funding represents about 84 per cent of all admitted acute inpatient funding—the remainder consisting of various grants and performance bonuses. The casemix approach aims to closely match funding with the actual costs of treating patients and encourages efficiency by providing incentives for hospitals to treat and discharge patients as quickly as possible. As this is most likely to occur in hospitals with good processes and systems, casemix encourages better patient flow through the hospital.

Managing acute inpatient admissions

Admission is the process where the hospital assumes responsibility for a patient's care or treatment and accommodates them on either a same-day or overnight basis. Hospitals face a daily challenge managing inpatient admissions, with demand for acute inpatient care and increasing patient illness acuity placing increasing pressure in hospital resources. The need to manage this demand, while also working to balance competing demands for elective surgery and emergency admissions, adds to this challenge.

Each of the audited hospitals had implemented demand management strategies that both substituted for, and diverted patients from, inpatient care. The lack of local evaluation, however, meant that it was not possible for hospitals to assess just how effective these strategies had been. This represents a missed opportunity to finetune their strategies and improve patient flow.

While all hospitals planned their acute inpatient admissions, the effectiveness of the planning was reduced as monitoring of the balance between elective surgery and emergency department admissions was not done on a regular and ongoing basis. Each hospital had postponed elective surgery because it prioritised emergency department patients. While presentations to emergency departments are unplanned, they are also highly predictable and by identifying trends, such as the increase in demand for emergency admissions during the winter period, hospitals should be able to predict with a high degree of certainty the number of inpatient beds emergency department patients will require. There is an opportunity for hospitals to improve elective surgery planning by understanding variation in emergency admission demand and planning elective admissions in response.

All hospitals had a range of processes to manage inpatient admissions that improved patient flow. These related primarily to elective surgery. However, the processes for emergency admissions were less effective, placing a heavy reliance on emergency department staff to actively manage admissions by 'pushing' patients onto wards. Ward staff were less inclined to 'pull' patients from the emergency department. This resulted in delayed admissions and longer emergency department waits.

To improve the 'pulling' culture within wards—where ward staff actively seek patients for their beds—hospitals should set expectations for staff participation in facilitating emergency admissions, improve communication regarding waiting patients and identify and address cultural issues, which act as barriers to smooth transition from the emergency department.

Managing the acute inpatient stay

How well hospital staff manage their beds can have a significant impact on how well patients flow through the hospital. If the hospital does not have enough beds available for the day's admissions, patients may wait in the emergency department longer than is clinically desirable, which has a flow-on effect for those in the emergency department waiting rooms. The hospital may also have to postpone elective surgery—adding to waiting lists and delaying access to care for these patients.

All hospitals had bed managers, enabling a coordinated and collaborative approach to managing beds hospital-wide. However, hospitals relied on custom and practice rather than detailed, relevant bed management policies and procedures, which led to inconsistent and inefficient bed management practices.

Hospitals relied on paper-based bed management tools to collect information on the hospital's bed-state. These tools were often complex, used inconsistently and difficult to complete. The collated information was difficult to interpret and reduced the accuracy of the hospital's bed-state data. Because these tools were manual the hospitals did not have real time data on the hospital's bed-state to support planning for admissions.

The absence of real time information was symptomatic of poor IT systems to support bed management. None of the audited hospitals had robust and effective bed management IT systems to provide real time data to aid admission planning—a major impediment to improved patient flow. DHS has recognised the limitations of IT systems in Victoria’s public hospitals and is piloting a dedicated bed management IT system.

Managing acute inpatient discharges

Hospitals did not have detailed procedures and clearly stated roles and responsibilities to guide patient discharge, limiting the effectiveness of the discharge process. Hospital managers need to ensure that all staff are aware of their roles and responsibilities in the discharge process to prevent discharge delays due to non-participation or poor coordination.

Early discharge planning at each of the hospitals was a positive development, enabling staff to begin preparing patients for timely transition to a more appropriate setting when their treatment was complete—decreasing the likelihood that the hospital would experience discharge delays. Ward rounds and discharge meetings provided hospital staff with regular opportunities to identify patients who were ready for discharge. They were most effective when conducted early in the morning, reducing the likelihood that patients spend additional and unnecessary time in an acute inpatient bed.

Junior doctors can be reluctant to discharge patients without first consulting with senior medical staff. This is common in most hospitals. It was a concern at the two hospitals we audited that were reliant on visiting medical officers (VMOs). The limited availability of VMOs may be unavoidable, but should not be allowed to create bottlenecks that delay discharge. Hospitals need to establish processes to overcome these bottlenecks, such as criteria-led discharges, where senior medical staff identify key conditions that patients must meet before the hospital can discharge them. Criteria-led discharges are being used increasingly across the sector, and could be a useful way to improve the timeliness of discharges.

Discharge performance was generally consistent across the five hospitals and with the statewide average. However, in line with better practice and the hospitals’ own discharge policies, hospitals need to direct more effort to increasing the percentage of patients being discharged early in the morning. Hospitals also need to improve the rate of weekend discharge. The low rate of weekend discharges has been an issue for the past decade. It was raised in 2000 by Victoria’s Patient Management Taskforce. Since then only limited improvements have been made.

Hospitals should focus their weekend effort on ‘simple’ discharges—that is, discharge of those patients who do not require complex social service support. As increasing weekend discharges may require additional staff, and subsequently additional costs, hospitals should assess the costs of increased weekend staffing against the benefits of better patient access and flow.

GENERAL RESPONSE provided by the Secretary, Department of Human Services

The findings that both DHS and hospitals are adequately planning for in-patient services to provide sufficient capacity to meet demand is pleasing.

Current patient flow processes have allowed Victoria to achieve amongst the best time to treatment and bed efficiency performance levels in Australia, but more can and needs to be done to further improve the efficiency and effectiveness of these processes.

DHS acknowledges the importance of ensuring high quality data is available to accurately monitor performance and inform planning processes. DHS is in the process of engaging consultants to undertake an audit of the Victorian Emergency Minimum Dataset to address issues with data reliability and improve hospital data and its quality.

The audit report's recommendations and identified areas for improvement are consistent with the range of work being undertaken by DHS to improve patient flow across Victoria's public hospitals.

1.4 Recommendations

Managing acute inpatient services

Public hospitals need to:

- reduce pressure on existing resources by maximising the use of care models that substitute for inpatient beds. This will require collaboration with DHS to ensure timely and effective implementation (**Recommendation 4.1**)
- reduce bottlenecks that delay admission for emergency department patients, including by promoting greater use of interim orders and focus on the pulling of patients from the emergency department into ward beds (**Recommendation 4.2**)
- undertake more regular and comprehensive analysis and monitoring of data to inform their scheduling, and more actively manage changes in demand and capacity (**Recommendation 4.3**).

The Department of Human Services should work with hospitals to monitor emergency admissions and to balance emergency and elective demand more effectively (**Recommendation 4.4**).

RESPONSE provided by the Secretary, Department of Human Services

Accepted in principle. DHS will consider this recommendation in the context of the Redesigning Hospital Care Program and the development of tools that support hospital access management. DHS has funded a four-year Redesigning Hospital Care Program to build health service capability to create and spread sustainable improvements in emergency and elective inpatient care.

Managing the acute inpatient stay

The Department of Human Services should:

- develop, in conjunction with hospitals, comprehensive bed management guidance for achieving better practice, just as it has developed guidance on elective admissions (**Recommendation 5.1**)
- introduce the preferred system to each Victorian hospital as a key tool for improving patient access and flow, giving consideration for the life-cycle costs of implementation, following the pilot and evaluation of the electronic bed management systems (**Recommendation 5.2**).

RESPONSE provided by the Secretary, Department of Human Services

Recommendation 5.1

Accepted in principle. The Elective Surgery access policy developed by DHS provides guidance for managing patients receiving elective surgery in Victorian hospitals. DHS will consider this recommendation in the future development of inpatient program guidelines that relate to admission and discharge practices, such as short stay observation unit guidelines.

Recommendation 5.2

Accepted in principle. DHS has funded an electronic bed management system that will provide hospitals with the capability for 'real time' organisation wide monitoring and management of bed capacity. DHS will consider this recommendation following the evaluation of the electronic bed management systems currently being piloted in selected Victorian hospitals.

Managing acute inpatient discharges

Public hospitals should:

- develop comprehensive discharge policies and procedures that clearly identify staff roles and responsibilities, particularly those responsible for the coordination of discharges (**Recommendation 6.1**)
- promote the use of criteria-led discharges to reduce discharge bottlenecks caused by senior medical staff being unavailable, and reduce duplicated effort across hospitals. (**Recommendation 6.2**)
- increase the rate of weekend discharge for those patients able to return to their homes without the need for community support (**Recommendation 6.3**).

The Department of Human Services should facilitate the development of discharge criteria to enable a consistent approach and to reduce duplicated effort (**Recommendation 6.4**).

RESPONSE provided by the Secretary, Department of Human Services

Accepted in principle. DHS has funded Victorian hospitals to expand and mainstream care coordination services to support discharge from emergency departments and early discharge planning for inpatients. DHS will consider this recommendation in the context of the inpatient program guidelines that include admission and discharge.

2 Background

2.1 Acute inpatient care

Victoria's public hospitals are major providers of acute health care. Acute healthcare involves diagnosis and intensive treatment over a short time frame to reduce the symptoms or severity of illness or to provide a cure.

Typically, hospitals provide acute care in emergency departments through the provision of elective and emergency surgery, medical inpatient care and the planned treatment of existing illness, such as chemotherapy or renal dialysis. Traditionally, hospitals have treated these patients in an acute inpatient setting, such as a hospital ward.

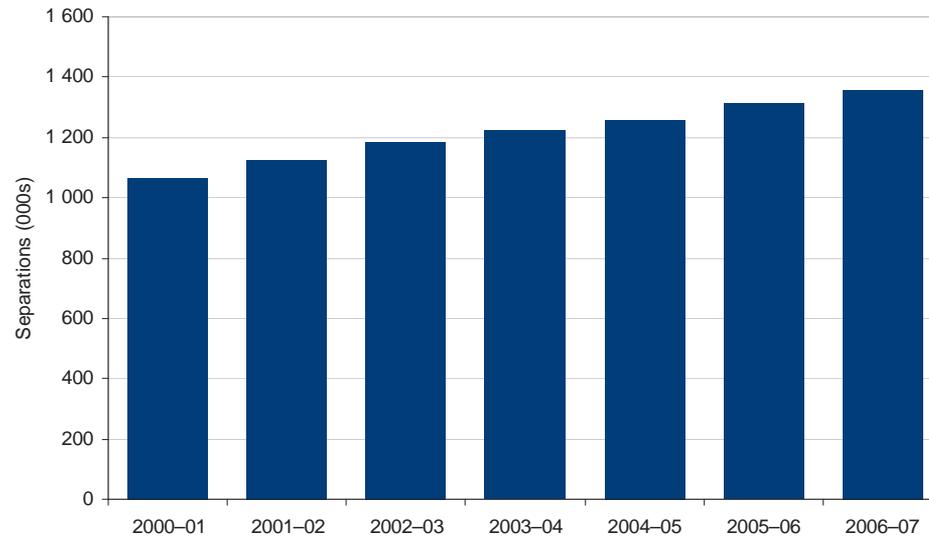
Acute inpatient care is a key part of hospital system and the ability to move patients into and out of an acute inpatient setting without undue delay, while maintaining appropriate standards of care, is crucial to achieving both responsible patient care for the individual and the best cost effectiveness in operation for the hospital.

2.1.1 Demand for acute inpatient care

Demand for acute inpatient care has increased steadily over the past decade, with an ageing and growing population, compounded by growth in chronic conditions, such as diabetes and cancer. Advances in medical technology have also added to demand as people now seek treatment for conditions previously untreatable.

Victoria has the second highest public hospital admission rate in Australia, with around 247 admissions per 1 000 population in 2006–07, compared with 204 for New South Wales, 190 for Queensland and around 217 for Western Australia. Only the Northern Territory has more admissions, with 480 per 1 000. Between 2000–01 and 2006–07, hospital admissions grew by 27.2 per cent (290 000) in Victoria, with an average annual increase of 4.1 per cent. As Figure 2A shows, there were just over 1.3 million patients admitted to receive treatment and care or undergo a surgical procedure in Victoria's public hospitals in 2006–07.

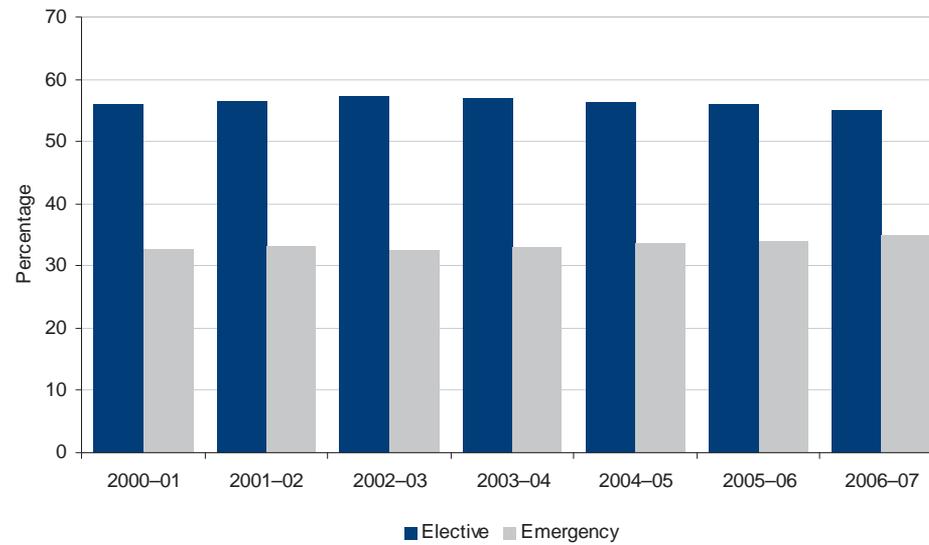
Figure 2A
Public hospital separations



Source: Victorian Auditor-General's Office, from Department of Human Services' data.

Much of the demand for acute inpatient care is from patients with planned admissions, including elective surgery patients and those undergoing medical treatment, such as renal dialysis and chemotherapy. In 2006-07, these groups represented around 55 per cent of all patient admissions, with patients presenting to emergency departments accounting for around 35 per cent of those admissions. Figure 2B shows that the proportion of patients admitted from emergency departments has grown steadily each year, with a corresponding decrease in the proportion of patients admitted from the elective surgery waiting list.

Figure 2B
Main sources of public hospital admissions

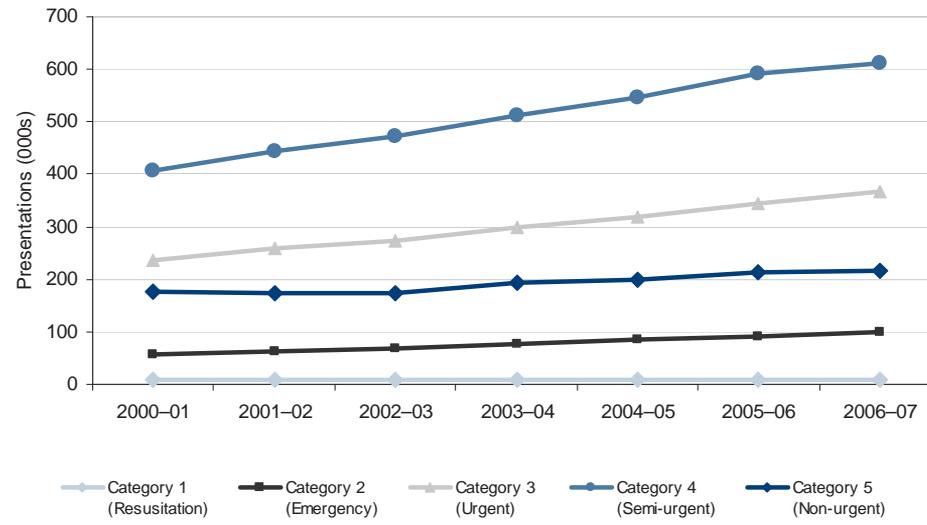


Source: Victorian Auditor-General's Office, from Department of Human Services' data.

An increase in the severity of patient illness has also compounded the demand for acute inpatient care. As acutely ill patients more likely to require admission and an extended hospital stay, any increase places additional pressure on existing resources.

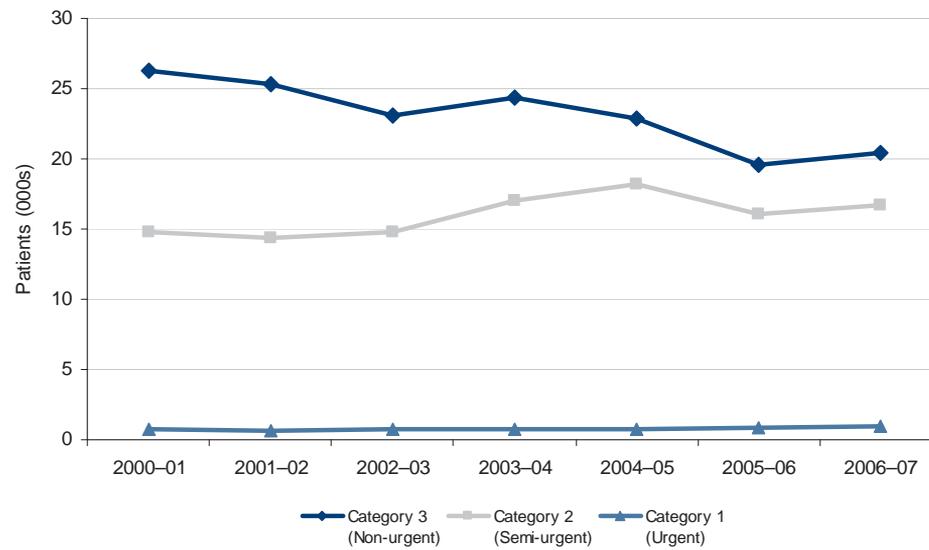
As Figures 2C and 2D show, the severity of patient illness has increased for patients presenting at emergency departments and for those receiving elective surgery. Between 2000-01 and 2006-07, emergency department patients triaged as 'emergency' increased by 72 per cent, while patients triaged as 'urgent' and 'semi-urgent' increased by 56.6 per cent and 50.1 per cent respectively. For elective surgery patients over the same time period, there was a 22.4 per cent reduction in the number of 'non-urgent' patients waiting for surgery and an increase of 38.8 per cent and 12.7 per cent for 'urgent' and 'semi-urgent' patients respectively.

Figure 2C
Emergency department presentations, by triage category



Source: Victorian Auditor-General's Office, from Department of Human Services' data.

Figure 2D
Elective surgery waiting list patients, by urgency category



Source: Victorian Auditor-General's Office, from Department of Human Services' data.

2.2 Hospital and health system capacity

Critical to managing the demand for acute inpatient care is the capacity of hospitals and the health system to treat patients. In this report content, capacity refers to the resources a hospital has available to treat patients, including the number of beds, bed types and substitutes, health workforce and models of care. If there is insufficient capacity or demand grows and hospitals do not utilise capacity efficiently, pressure on available hospital resources is likely to build. Consequently, a hospital's ability to provide timely and accessible treatment for those who require acute inpatient care will diminish.

Long stays in emergency departments and cancelled surgery indicate that there is either insufficient capacity to meet demand or hospitals are using capacity inefficiently.

2.2.1 Available beds

Traditionally, hospital capacity has been measured by the number of **available beds—beds located in a suitable place for care with nursing and other staff**. The number of available beds in Victoria's public hospitals has increased over the past 10 years, although the available beds per 1 000 population has decreased—trends that are nationally consistent.

In 1996–97, Victoria's public acute hospitals (excluding psychiatric hospitals) had 2.7 beds per 1 000 population, compared with a national average of 3.1 beds per 1 000 population. In 2006–07, Victoria (along with Queensland) had the lowest number of beds among the states, with 2.4 per 1 000 population, while the national average was 2.6 per 1 000 population. The trend to fewer beds reflects, in part, changing models of care and a shift to same-day services, resulting in shorter hospital stays and less need to make more beds available.

While the 'available beds' measure provides some indication of the availability and accessibility of hospital services, it is not a particularly useful measure of capacity. The Australian Institute of Health and Welfare (AIHW), in its annual *Australian Hospital Statistics* report, considers the concept of available beds to hold less importance in light of new models of care such as day surgery and bed substitutes such as Hospital in the Home (HITH). These care models increase the capacity of hospitals to treat patients by reducing the need for patients to stay overnight, or longer, in an acute inpatient setting. According to the AIHW, Victoria is the biggest user of HITH nationally, accounting for around 62 per cent of HITH patient days per year. DHS estimates that the HITH patient days equate to around 529 hospital beds, which the 'available bed' measure does not include. Figure 2E shows the bed types included and excluded from the 'available beds' measure.

Figure 2E
Available beds—inclusions and exclusions

Inclusions	Exclusions
Multi-day surgical beds	Surgical tables
Multi-day medical beds	Recovery trolleys
Day surgery beds	Delivery beds
Dialysis chairs	Emergency trolleys/stretchers/beds
Chemotherapy chairs	Cots for normal (unqualified) neonates
Dental chairs	Discharge lounges
Short Stay Unit beds	Medi-hotel beds
Emergency Medical Unit beds	Hospital In The Home (HITH)

Source: Victorian Auditor-General's Office, from the AIMS manual, version 15.

2.2.2 Bed utilisation

How a hospital uses its beds can have a greater bearing on capacity than the number of available beds. While adding more beds can increase system capacity and enhance patient flow, experience in the United Kingdom, for example, shows that hospitals can improve patient outcomes without the need for more beds if they managed their existing beds and patient flows better.

DHS measures hospital and health system capacity by counting the number of days (or part days) a patient received treatment. A higher number of patient days, per bed, indicates greater patient throughput and ultimately a greater capacity to treat. While available bed numbers in Victoria's public hospitals have fallen, relative to population, system capacity has continued to increase through better utilisation of its available beds. Between 2000–01 and 2006–07, Victoria's total patient days increased by 14.1 per cent, compared with a national average of 11.8 per cent. Among the states, only Queensland and Western Australia achieved larger patient day increases, with 17.9 per cent and 18.8 per cent respectively. New South Wales recorded growth of 7 per cent over the same time period.

Figure 2F shows that Victoria had the highest utilisation of its public acute hospital beds, with around 355 patient days for each of its available beds, in 2006–07.

Figure 2F
Patient days per available bed

	NSW	VIC	TAS	QLD	WA	SA
Patient days	5 694 253	4 371 668	379 649	2 750 008	1 558 540	1 509 563
Available beds	18 755	4 595	1 274	9 896	5 358	4 595
Patient days per bed	304	355	318	278	300	347

Note: The data excludes psychiatric hospitals. Comparisons are for states only.

Source: Victorian Auditor-General's Office, from *Australian Hospital Statistics 2006–07*.

2.2.3 Bed occupancy

Bed occupancy—the percentage of available beds occupied by patients at a given time—is another important element of a hospital's capacity to treat patients. If patients occupy all or nearly all of a hospital's beds, there is a greater chance that the hospital will experience 'access block'—a prolonged wait for an inpatient bed—preventing new patients from receiving timely acute care. Various studies have shown that as a hospital's bed occupancy rate goes above 90 per cent, there is an exponential increase in the number of times they experience access block.

The basis for the 90 per cent bed occupancy-access block relationship is the assumption that a bed should be available on request. This is not always realistic and where hospitals have waiting allowances built in to their processes, such as Victoria's 8-hour time limit for admission from the emergency department, then the occupancy rate-access block threshold might be higher, meaning that a hospital can occupy more beds before it might technically experience access block. The point is not what the threshold is, but that hospitals maintain some spare or 'flex' capacity to meet short-term surges in demand to ensure that they can admit emergency patients in a timely manner.

2.2.4 Length-of-stay

A patient's length-of-stay—the time between admission and discharge—in an acute inpatient setting has a big impact on the capacity of a health service to treat patients. The longer a patient stays, the less opportunity there is for other patients to use that bed. Reducing the time a patient stays in hospital, within clinically appropriate timeframes, can enhance capacity by increasing patient throughput.

DHS measures length-of-stay in two ways: by including same-day and multi-day patients and by including only multi-day patients. On both measures, Victoria compares favourably with the other states. As Figure 2G shows, in 2006–07 Victoria had the shortest average length-of-stay when same-day and multi-day patients were combined (3.4 days), reflecting the comparatively high use of same-day hospital services. The average length-of-stay for multi-day patients over the same period was around 6.4 days, just behind Queensland with 6.2 days.

Figure 2G
Average length-of-stay (days)

	VIC	WA	QLD	NSW	SA	TAS
Same and multi-day	3.4	3.6	3.7	4.1	4.1	4.2
Multi-day	6.4	6.4	6.2	6.5	7.1	7.4

Note: The data excludes psychiatric hospitals. Comparisons are for states only.

Source: Victorian Auditor-General's Office, from *Australian Hospital Statistics 2006–07*.

2.3 Patient flow

Patient flow refers to the movement of patients through the hospital system, for example, from the emergency department, to an inpatient bed, to a sub-acute bed and then to home. Good patient flow sees patients move through the various parts of the hospital system without delay, providing benefits to patients and hospitals that include improved clinical outcomes; eliminated waits and delays and; saved time, effort and costs. Achieving good patient flow requires effective management of hospital beds, staff, operating theatres and equipment.

Notwithstanding Victoria's comparatively good bed utilisation and patient length-of-stay, and the extensive use of bed substitutes such as HITH, the public health system continues to experience access pressures. Poor access performance for emergency and elective patients can indicate issues with patient flow in hospitals, including the way they operate emergency departments and schedule elective surgery. It may also indicate that they have insufficient beds to cope with the demand, although increasing the number of available beds will not necessarily improve patient flow if the systems and processes do not also support good patient flow to prevent new beds becoming blocked.

2.3.1 Bottlenecks

Good patient flow through all parts of the hospital system is seldom achieved in practice, with bottlenecks interrupting flow and slowing a patient's journey. A bottleneck occurs when system capacity is either insufficient or inefficiently used to meet demand, causing disruption to the flow of patients. The United Kingdom's National Health Service (NHS) identified two types of bottleneck prevalent in health systems: process bottlenecks and functional bottlenecks.

Process bottlenecks occur when a process takes a long time to complete. In an acute inpatient setting, inpatient discharge is an example of a common process bottleneck. *Functional bottlenecks* occur when, typically, a hospital-wide service has to manage competing demands. Radiology, pathology and pharmacy services are typical areas of functional bottlenecks.

Bottlenecks, poor process and poor patient flow can have significant adverse impacts on patient care and outcomes. For example, patients:

- may have to wait longer than clinically appropriate for elective surgery if a hospital does not have the capacity to increase throughput or uses its capacity inefficiently. In 2006–07, around 25 per cent of semi-urgent patients waited longer than they should have for their elective surgery in Victoria's public hospitals
- may have their elective surgery cancelled at short notice due to poor processes or capacity issues. In 2006–07, 8.7 per cent of Victorian elective surgery patients had their surgery postponed—over the eight per cent benchmark

- in the emergency department can wait longer than is clinically appropriate for admission to an acute inpatient setting if there is insufficient capacity or inefficient use, while also reducing access to emergency patients in the waiting room. Around 30 per cent of Victorian emergency department patients waited longer than eight hours for admission to an acute inpatient bed in 2006–07—10 per cent more than the benchmark.
- may stay in an acute inpatient setting longer than is clinically appropriate if poor processes or delays in accessing community-based services prevent timely discharge. In the six months to June 2007, Victorian patients used approximately 50 000 bed days waiting for discharge to suitable ongoing care, such as residential aged care facilities, despite no longer requiring active treatment. Assuming patients had the average length-of-stay, this represents around 7 800 patients with delayed access to an acute inpatient bed.

2.3.2 Variation

A significant cause of bottlenecks and delays in hospital systems is variation. Variation refers to the amount or extent of difference in a process or patient group. For example, hospitals treat patients with different illnesses or injuries and manage varying numbers of emergency department patients on different days at and different times. This variation is normal and expected within hospitals.

Most variation is avoidable and negatively impacts on patient flow. Hospitals unintentionally create variation through the way they manage their systems and processes, such as the way they schedule admissions, time ward rounds and manage discharge processes. This type of variation can lead to significant differences in the average length-of-stay for the same patient condition across hospitals. Fundamental to improving patient flow is the need for hospitals to effectively manage variation to an absolute minimum.

2.4 Initiatives to improve patient flow

2.4.1 Health reform program

In July 2007 DHS started an ambitious four-year health reform program aimed at identifying and achieving efficiencies, improving access and moderating future demand across the public health system. Included in the reform program are two strategies with a focus on improving patient flow and the efficiency of hospital processes: the *Redesigning hospital care* program and the *Focus on variation* project.

Redesigning hospital care

The *Redesigning hospital care* program aims to make a measurable improvement to patient care and to improve the efficiency and effectiveness of health services through the use of improvement techniques and tools. Through the planning and delivery of redesign projects, DHS expects that health services will improve patient flows and patient outcomes, while also reducing health care costs.

A framework for health services has recently been released to guide progress over the next four years.

Focus on variation

The *Focus on variation* project is an important part of DHS's strategy to improve patient flow. It aims to develop a set of high-level operational measures that health services can use to benchmark their performance across the public health system. The benchmarking process aims to identify and reduce variation in performance while also improving efficiency.

A set of more than 50 draft performance indicators covering a range of hospital activities has been developed and DHS expects to be able to start providing hospitals with benchmarking data and reporting on variation during 2008–09. Proposed indicators related to patient flow include:

- the percentage of elective surgery patients treated within clinically appropriate time frame by urgency (for urgency categories 2 and 3)
- the percentage of emergency department patients admitted to a hospital bed within eight hours
- occupancy rate
- discharge summaries received within 24 hours
- number of hospital-initiated postponements per 100 scheduled admissions
- percentage of short-stay surgical procedures
- percentage of day of surgery admissions.

2.5 Inpatient funding

DHS purchases acute inpatient services through casemix funding system. Casemix funding provides about 84 per cent of all admitted acute inpatient funding. The remainder consists of various grants and performance bonuses. Casemix aims to closely match funding with the actual costs of treating patients and does this by developing a cost weight for groups of diagnoses and procedures—diagnosis related groups, or DRGs.

DHS funds hospitals for the amount and type of work they do. Payments comprise a base payment, adjusted by the cost weights that reflect the average length-of-stay for that DRG, producing a weighted in-liner equivalent separation, or WIES. Figure 2H shows how this works.

Figure 2H
Example of WIES payments

Example 1—liver transplant

A patient who receives a liver transplant and has a hospital stay of between 9 and 87 days:

Cost weight=25.6

Base payment=\$3 279

Total payment to hospital=\$83 942

Example 2—eye procedure

A patient who undergoes an eye procedure and has a hospital stay of between 0 and 3 days:

Cost weight=0.32

Base payment=\$3 279

Total payment to hospital=\$1 049

Source: Victorian Auditor-General's Office.

2.5.1 Setting activity targets

Hospitals and DHS negotiate WIES activity targets annually as part of their broader negotiations around their Statements of Priority, the agreement between the Minister for Health and individual health services. Once targets have been established, hospitals are responsible for allocating the funding across their program areas, providing flexibility to meet local need, albeit within a set budget. In 2007–08, WIES targets represented around 60 per cent of hospitals' budgets.

DHS and hospitals also participate in a six-month review of their Statements of Priority. This gives both parties the opportunity to examine actual and planned WIES activity and the reasons for any discrepancies. It also provides an opportunity to adjust WIES targets to better reflect demand.

2.5.2 Inpatient funding and patient flow

Casemix funding encourages efficiency by providing incentives for hospitals to treat and discharge patients as quickly as possible—encouraging better patient flow if the hospital has good processes and systems.

For each DRG, DHS has identified a range (in days) within which it is usual for hospitals to treat patients. DHS refers to these patients as 'in-liers' and hospitals receive all of their expected payment if they treat the patient within this range.

Patients that the hospital treats outside this range, either shorter or longer, are referred to as 'out-liers' and attract different payments: less for shorter treatment and more for longer treatment, reflecting the relative complexities of the patient conditions. For longer treatment, the additional payment is a proportion of the full payment.

The incentive for hospitals is to treat patients closer to the short end of the in-lier range. Not only does this reduce the costs associated with the treatment, but the shorter lengths-of-stay can also increase patient throughput and increase maximum net income that the hospital generates through casemix. The key is for hospitals to have efficient and effective processes. Hospitals that are inefficient are likely to have longer lengths-of-stay, increasing their costs, reducing their throughput and increasing pressure on hospital budgets.

2.6 Audit objective and method

The audit objective was to determine whether patient flow and bed management in Victoria's public hospitals was effective and efficient. To achieve this objective, the audit examined how DHS and selected health services:

- planned for inpatient services
- managed demand for inpatient services (focusing on program interventions)
- managed planned and unplanned admissions
- managed the use of inpatient beds
- discharged patients from an inpatient setting (either to within their homes with community support or residential aged care facilities).

To achieve the objective, the audit examined the policies, procedures and activities of five hospitals:

- Alfred Hospital
- Austin Hospital
- Ballarat Base Hospital
- Frankston Hospital
- Northern Hospital.

The audit focus was acute inpatient services, with the management of emergency department care, elective surgery and sub-acute care excluded except where they interfaced with the acute inpatient setting. Mental health patients were also excluded from the audit.

The audit was performed in accordance with the Australian auditing standards applicable to performance audits, and included tests and procedures sufficient to enable audit conclusions to be reached. The total cost of the audit was \$480 000 and included staff time, overheads, expert advice and printing.

3 Planning for inpatient services

At a glance

Background

Providing sufficient capacity in the health system to meet the population's needs in the medium and longer term requires a planned approach. Planning is an important part of health sector activity, identifying the direction, priorities and required resources for the health system.

Key findings

- Both the Department of Human Services (DHS) and hospitals are adequately planning for inpatient services to provide sufficient capacity to meet demand.
- Planning frameworks for metropolitan and rural hospitals underpin planning activities, supplemented by local strategic service plans. Local service plans take into account current and future service profile, including the mix, level and distribution of services.
- Clinical, administrative and census data are used to inform planning. The clinical and administrative data and inpatient forecasts used for planning purposes was not always reliable, particularly in relation to emergency department and elective surgery data.
- Insufficient progress has been made in improving the system controls and quality monitoring of emergency and elective surgery datasets.
- The time lag between collection and publication of census and other demographic data can impact significantly the reliability of forecasts, particularly in areas of high population growth. This can negatively impact on service planning.
- Access to better benchmarking data by hospitals would assist them in identifying variation in practices and develop better practice.

3.1 Introduction

Providing sufficient capacity in the health system to meet the population's needs in the medium and longer term requires a planned approach. Planning is an important part of health sector activity, identifying the direction and priorities for the health system and resources required. We expected, therefore, that the Department of Human Services (DHS) and hospitals planned, in a coordinated way, for acute inpatient services and that reliable data informed their planning processes. We also expected that DHS linked funding to a planning system that was responsive to health service and system need, and promoted good patient flow.

3.2 Planning for inpatient services

Both DHS and hospitals plan for inpatient services to provide sufficient capacity, in terms of resources and care models, to meet demand. DHS is responsible for developing statewide planning frameworks to achieve desired outcomes and inform hospital planning, while also coordinating hospitals' development of strategic service plans.

3.2.1 Statewide planning frameworks

DHS has developed planning frameworks for both metropolitan and regional and rural hospitals that consider service, capital and workforce needs: the *Metropolitan Health Strategy* (MHS) for metropolitan hospitals and *Rural Directions for a Better State of Health* (RDBSH) for rural and regional hospitals.

Metropolitan Health Strategy

Released in 2003, the MHS provides a policy and planning framework for metropolitan health services, setting out the directions and objectives to enable the health system to meet future demand over a 5–10 year period. Its focus includes increasing, redistributing and reconfiguring capacity, service substitution and diversion and the development of new service models. The MHS also details service directions and capital priorities for each metropolitan health service.

DHS is developing a health asset strategy to guide capital expenditure over the next ten years. DHS expects that the asset strategy will detail Victoria's future health asset and capacity requirements, with service and workforce planning around the asset priorities to occur subsequently.

Rural Directions for a Better State of Health

DHS released *Rural Directions for a Better State of Health* in 2005 as a planning framework for rural and regional health services. It establishes three strategic directions to enable rural health services to meet its populations' needs:

- promoting the health and wellbeing of rural Victorians
- fostering a contemporary health system and models of care for rural Victorians
- strengthening and sustaining rural health services.

3.2.2 Local planning

Using the broad planning frameworks established by DHS that set out the direction and priorities, hospitals develop detailed strategic service plans for inpatient services. Service planning enables hospitals to identify their current and future service profile, including the mix, level and distribution of services. By considering factors such as projected future demand, demographic trends and service utilisation patterns, hospitals develop strategies and services to meet patient needs.

Each of the five hospitals conducted service planning that took account of acute inpatient services and informed future capital requirements. This occurred in collaboration with DHS, which coordinated the process. This provided DHS with an understanding of the system-wide implications of individual service plans and whether the plans were consistent with the strategic directions for each program area.

Three hospitals had either developed, or were developing new service plans in 2008 as part of a DHS program to update service plans. The two remaining hospitals completed their service plans in 2006 and 2004. The hospital with the 2004 plan had, since 2004, developed program-specific service plans, such as maternity, ambulatory and mental health.

Typically, service plans detailed:

- the policy and planning context
- environmental analysis
- the catchment profile, in their health status
- the hospital's service and physical profile
- current activity and forecast demand
- drivers for change
- workforce considerations
- implementation plans.

Each hospital was involved in a range of other planning activities related to inpatient services, including:

- strategic planning, which identified the broad future direction and priorities
- capital planning, which identified the future capital requirements workforce planning, to identify and address workforce issues impacting service delivery.

3.3 Planning with reliable data

The availability and use of reliable data is essential for effective planning. It can identify trends and patterns in the demand for, and use of, health services and enable planners to target funding and resources accurately. We expected DHS and health services to have mechanisms in place to ensure reliability of the data they used.

3.3.1 Clinical and administrative data

Much of the data that DHS and hospitals used for planning purposes came from collections that DHS maintained, including:

- the Victorian Admitted Episodes Dataset (VAED), which collects information on every admitted patient episode of care
- the Elective Surgery Information System (ESIS), which collects waiting list information for elective surgery patients
- the Victorian Emergency Minimum Dataset (VEMD), which collects information on presentations to hospital emergency departments, including those subsequently admitted to an inpatient setting.

DHS requires all hospitals to collect and submit this data to them for collation and analysis. DHS then uses it for planning and policy development purposes, as well as for hospital funding and inpatient forecasts. Hospitals also use this data for service planning. Combined, the three datasets provide planners with data on over 150 variables, including admission and discharge, patient illness acuity, patient illness and injury, length-of-stay in hospital and waiting times.

Data reliability

With the widespread use of these datasets for planning and funding purposes, the reliability of the data they contain is essential. While DHS and health services had mechanisms in place intended to manage data reliability, these mechanisms were not always effective in achieving data reliability, with the most robust mechanisms applied to the VAED and the least robust applied to the VEMD and ESIS.

Input and output validation

Input validation occurs when DHS receives the data from the hospital and checks that it meets predefined standards at the episode level. Output validation occurs after DHS has accepted the data from the hospital and checks whether it meets predefined standards at an aggregate level. Each of the three datasets outlined above was subject to routine input and output validation, which provided assurance that the submitted data met pre-determined standards.

Data audits

DHS also uses data audits to test the reliability of the data it collects and collates. Data audits can provide further assurance by examining data collection processes and checking for data manipulation. Only the VAED has been subjected to data audits to date, with the most recent audit finalised in 2006–07. This audit examined the coding of admitted patients' files. The coding impacts on hospitals' future funding under the casemix funding system (discussed later in the part). The audit testing provided largely positive results, indicating high quality coding and reliable data.

The absence of an auditing regime for the VEMD and ESIS means that DHS cannot provide assurance about the reliability of these data collections. The reliability of the VEMD has previously been raised for attention in reports to Parliament: *Managing emergency demand* in 2005 and a follow-up of this audit in 2007. In those audits we found that while input and output validation occurred, a lack of system controls meant there were few safeguards preventing staff from manipulating data, although we saw no evidence that this was occurring.

In 2007 DHS completed a pilot audit of the VEMD, comparing manual records with VEMD data, using a method similar to that used for the VAED audit. DHS found the audit method unsuitable to test the reliability of the VEMD, due to the nature of the emergency department environment and work practices. DHS advised that they were planning another VEMD audit, using a different method, for late 2008. DHS have made no attempt to audit the ESIS data collection, although in a draft data quality framework they were developing, DHS has recognised the need for an ESIS audit.

The slow progress in improving the controls over the VEMD data collection and the lack of assurance to date about the reliability of the VEMD and ESIS data is a significant weakness.

Hospital use of data

Each of the five hospitals used clinical and administrative data when planning, to monitor performance and to inform practices. Typically these data included DHS's key performance indicators (KPIs) and other access indicators. A weakness in hospitals' use of data was the unavailability of benchmarking data.

DHS has recognised the limits that hospitals not having access to benchmarking data has on health system improvement and is aiming to overcome this with the *Focus on variation* project.

Benchmarking, which compares one hospital's performance against that of other hospitals, is a useful way to identify variation in practices and develop better practice. Hospitals have access to limited benchmarking information through DHS's monthly integrated performance report, which benchmarks KPI performance against other anonymous peer hospitals.

Hospitals were also able to get limited benchmarking information if they were a member of the Health Roundtable—a private not-for-profit organisation with membership from Victoria, New South Wales and New Zealand. Among other objectives, the Health Roundtable collects analyses and publishes information comparing organisations and identifying ways to improve operational practices.

3.3.2 Inpatient forecasts

Forecasting is a core part of planning. It provides quantitative data about the likely demand for services enabling strategies to be developed and implemented to meet this demand. DHS has a central unit that undertakes annual forecasting of hospital inpatient services, providing long-term forecasts for the number of separations or discharges per 100 000 population, the average length-of-stay for age, gender, same or multi-day stays and the main categories of patient illness or injury.

All health services have access to the inpatient forecasts. In addition, DHS provides information sessions for metropolitan and rural health services and its own staff about the inpatient model and how they can use it for service planning. DHS advised that while the forecasting model was statistically robust, there were limitations capable of affecting service planning. The forecasting model uses the Australian Bureau of Statistics' (ABS) estimated resident population data and the Department of Planning and Community Development's (DPCD) population projections. However, there is considerable lag time between this data being collected and reported. As DHS relies on the DPCD data for its forecasts, it is not able to update its forecasts until DPCD formally releases the data. For example, until recently, population forecasts were based on 2001 data as the ABS population data collected in 2006 was not available until mid-2008—resulting in recent forecasts being based on outdated material.

3.4 Conclusion

DHS and hospitals are all adequately planning for their future service, capital and planning needs, underpinned by statewide planning frameworks for metropolitan and rural hospitals. As the planning framework for metropolitan hospitals is nearing the end of its intended timeframe, DHS will need to ensure that future planning reflects its new directions and priorities. The development of a detailed and long-term asset strategy is an important step.

The use of reliable data is fundamental to effective planning and the lack of assurance around the reliability of emergency department and elective surgery data is a concern—as is the slow progress to rectify previously identified issues surrounding the system controls on datasets.

4 Managing inpatient admissions

At a glance

Background

Effective management of inpatient admissions is vital if hospitals are to achieve good patient flow. Admission is the process where the hospital assumes responsibility for a patient's care or treatment and accommodates them on either a same-day or overnight basis. Hospitals face a daily challenge managing inpatient admissions, with demand for acute inpatient care placing increasing pressure on hospital resources. Having to manage this demand, while also working to balance competing demands for elective surgery and emergency admissions, adds to this challenge.

Key findings

- Each hospital had adequate admissions policies to guide staff on emergency and elective surgery admissions.
- None of the hospitals examined monitored the balance between their elective and emergency admissions on a regular and ongoing basis, reducing the effectiveness of their inpatient admission planning.
- Few hospital wards actively sought patients from the emergency department, increasing the time emergency department patients spent awaiting admission.
- The lack of evaluation of diversion and substitution strategies by hospitals means that it is not possible for them to determine how effective they are in reducing demand for inpatient beds and improving patient flow.

At a glance – *continued*

Key recommendations

Public hospitals need to:

- reduce pressure on existing resources by maximising the use of care models that substitute for inpatient beds. This will require collaboration with DHS to ensure timely and effective implementation (**Recommendation 4.1**)
- reduce bottlenecks that delay admission for emergency department patients, including promoting greater use of interim orders and the pulling of patients from the emergency department into ward beds (**Recommendation 4.2**)
- undertake more regular and comprehensive analysis and monitoring of data to inform their scheduling, and more actively manage variation in demand and capacity (**Recommendation 4.3**).

The Department of Human Services should:

- work with hospitals to develop tools to monitor emergency admissions and to balance emergency and elective demand more effectively (**Recommendation 4.4**).

4.1 Introduction

When a patient requires surgery or further treatment following a stay in an emergency department to cure or reduce the severity of their condition, the hospital will admit them as an inpatient. Admission is the process where the hospital assumes responsibility for a patient's care and treatment and accommodates them on either a same-day or overnight basis. Hospitals face a daily challenge managing inpatient admissions, with increasing demand for acute inpatient care placing growing pressure on hospital resources. Managing this demand, while balancing the competing demands for elective surgery and emergency admissions, adds to the challenge.

Effective management of inpatient admissions is vital if hospitals are to achieve good patient flow. Admitting patients only when appropriate and necessary, such as on the day of surgery rather than the night before, reduces the demand for beds and makes them available for patients who do need them. Similarly, by considering patterns in admissions from the emergency department, hospitals can improve scheduling their admissions for elective surgery. From a patient and hospital perspective, effective management of admissions not only prevents long waits in the emergency department and consequent congestion, but also prevents hospital-initiated postponements of elective surgery. Consequently, the opportunity for elective surgery patients to receive care within clinically appropriate time frames is maximised.

To assess how well hospitals managed inpatient admissions, we examined whether they had:

- developed, implemented and evaluated strategies to manage demand for acute inpatient admissions
- processes to manage planned and unplanned admissions to optimise patient flow.

4.2 Managing demand for admissions

Since 2000–01, demand for acute inpatient services in Victoria's hospitals has grown nearly 30 per cent. DHS anticipates demand will grow by another 30 per cent between 2006–07 and 2018–19. If this is the case, and assuming that demand management strategies, such as diverting avoidable admissions, continue, DHS estimates that statewide, an additional 1 150 multi-day hospital beds will be required, just to maintain the status quo.

Effectively managing the current and forecast demand for acute admissions is central to patients being able to access acute care in a timely manner with less pressure on hospital resources. Managing this demand requires strategies to divert patients from hospital, such as patients with avoidable admissions, and substitutes to acute inpatient care. Demand management strategies can free up acute beds for those who need them most, and improve patient flow.

DHS funds a range of strategies focused on reducing demand for acute inpatient services, including those that substitute for inpatient care and divert patients from needing inpatient care.

4.2.1 Substituting inpatient care

Not all patients who require acute care need to receive this care in an inpatient bed. Changes to models of care and substitution strategies mean that many admitted acute patients can receive alternative care, reducing the utilisation of acute inpatient beds. The use of chairs for chemotherapy and renal dialysis patients is an example of substitution.

To varying degrees, Victorian hospitals have implemented a range of substitution strategies that aim to reduce the use of inpatient beds for many patients, making them available to those who need them most. The following represents the main substitution strategies. An example of this was the use of a residential outreach service provided to nursing home patients, that otherwise may have required inpatient care.

While the hospitals examined used many different substitution and diversion strategies to maximise their opportunities for reducing demand, there was a lack of evaluation of these strategies across the hospitals. Consequently, it was not possible for them to determine how effective these strategies were in reducing demand for acute inpatient beds and improving patient flow.

Short stay observation and medical assessment planning units

Short stay observation units (SOU) and medical assessment planning units (MAPUs) provide intensive assessment and treatment to patients likely to be discharged from the emergency department within 24 hours (SOU patients), or admitted to an inpatient setting within 48 hours (MAPU patients). They are an alternative to emergency department care or multi-day inpatient admission and, depending on how they are managed, these units have been shown to reduce the demand for acute inpatient beds.

Four of the five hospitals used SOUs, while the fifth was in the process of developing one. Three hospitals operated MAPUs, with one of these advising that it planned to evaluate its effectiveness as it believed the MAPU may represent an unnecessary step for many patients before they go to an inpatient ward.

Medi-hotels

Medi-hotels are a relatively new care model. They provide supervised overnight accommodation for self-caring, low acuity patients who require acute hospital services, but do not need this care in an acute inpatient bed. Hospitals commonly provide medi-hotel services within the hospital setting, but in some cases may provide the service in private hotel accommodation.

Typically, patients who use medi-hotels:

- need to stay in the hospital the night before the hospital admits them
- travel long distances for tests and consultations
- no longer need inpatient care but need some supervision before going home, such as medication management.

Placing patients in medi-hotels can free-up acute inpatient beds and increase the hospital's capacity. Three of the five hospitals were using medi-hotels, with one of these hospitals planning to open their medi-hotel following our visit.

Hospital in the home

Hospital in the home (HITH) is a demand management strategy that enables the hospital to provide treatment or care to an 'admitted' patient, without physically having the patient in the hospital. These patients receive their treatment in their homes. Typically, treatment includes wound dressing management and antibiotic treatment for defined conditions. Patients must meet HITH criteria, consent to receive treatment at home and also remain an admitted patient to participate in this program.

DHS estimates that the use of HITH across Victoria, that is treating patients in their own homes, equates to approximately 600 inpatient beds per annum. Each of the five hospitals used HITH as a substitute for providing hospital treatment.

Day surgery/23 hour procedure units

Day surgery facilities provide dedicated resources for patients who need simple elective surgery procedures and do not need a hospital bed, with the hospital likely to discharge the patient on the same day as their procedure. The idea behind 23-hour procedure units is that hospitals can provide most surgery and post-surgical care within 23 hours.

Both models provide safe care without leading to increased readmission rates, while also reducing the demand for acute inpatient beds. Each of the five hospitals had established day surgery. Only one had established a 23-hour procedure unit.

4.2.2 Diverting patients from inpatient care

While substitution helps to provide an alternate care setting for those patients who require acute inpatient care, there are many patients whose admission may be avoidable. Hospitals implement strategies to prevent avoidable admissions, diverting patients from entering the acute care setting.

Hospital Admissions Risk Program—Chronic Disease Management

The Hospital Admissions Risk Program (HARP) aims to reduce avoidable hospital admissions by working with people who are frequent users of hospitals or are at-risk of hospitalisation. Those most at-risk include people with chronic heart and respiratory disease, diabetes, older people with complex needs and people with complex psychosocial needs.

An evaluation of HARP published by DHS in 2006, found it had significant benefits for these patients and the hospital system. These benefits included 35 per cent fewer emergency department attendances, 52 per cent fewer emergency admissions and 41 per cent fewer days in hospital.

The evaluation estimated that the reduced need for hospital services was equivalent to approximately one emergency department attendance, two emergency admissions, and six days spent in hospital each year, for every HARP patient. Each of the five hospitals was operating HARP.

4.3 Planning for admissions

For acute hospitals, the majority of admissions are of patients who need elective surgery and patients who attend emergency departments, with unplanned emergency department presentations representing an increasing proportion of acute inpatient admissions. Hospitals face a range of challenges in planning for acute admissions. They need to admit elective surgery patients within clinically appropriate timeframes (ranging from 30 days to 365 days), while also admitting emergency department patients within eight hours of their presentation. Hospital policies and procedures that guide admissions and hospitals' use of data to predict admission needs and balance demand are important.

4.3.1 Admissions policies and procedures

Policies and procedures facilitate the effective functioning of an organisation. They provide written guidance for staff to identify the purpose of an activity and procedures setting out the steps required to achieve the policy's purpose. Clear policies and procedures would better define roles and responsibilities, promote fair and consistent work practices and decisions and enhance the efficiency and effectiveness of the activity. We expected that the hospitals examined would have policies and procedures to guide elective surgery and emergency admissions.

Each of the five hospitals had admissions policies, although the extent to which they included elective surgery and emergency admissions varied considerably. All of the hospitals used DHS's elective surgery access policy, providing a consistent approach to managing elective surgery within and across hospitals.

Key elements of the policy included:

- registering patients on the waiting list
- the need for, and timing of, pre-admission processes
- the use of case management for patients with complex needs
- timely scheduling of elective surgery
- timely confirmation of elective surgery.

DHS's policy also included strategies to minimise hospital-initiated postponements of elective surgery, including anticipating levels of emergency surgery. There was considerably less use of policies and procedures to guide staff on managing emergency admissions. This reflects an absence of guidance from DHS.

Four of the five hospitals had high-level admission policies highlighting a requirement to admit emergency department patients according to their clinical need and to the most appropriate bed or care model. However, only two had written procedures for admitting emergency patients and while both sets of procedures outlined the required admission steps, only one specified expectations regarding timeliness.

Timeliness is important for emergency admissions. Long stays in an emergency department waiting for admissions can diminish patient health outcomes, increase the length-of-stay in an inpatient setting, and affect patient flow. DHS's performance benchmark for hospitals is that they should admit most emergency department patients within eight hours of their attendance.

One hospital focused on the timeliness of emergency admissions and had developed procedures that require a decision to admit being made within three hours of the patient's arrival. The staff of the inpatient unit to which the patient was being referred, reviewed and accepted them within two hours. The procedures also provided one hour for transferring the patient to a ward bed. The procedures set clear expectations for staff about their role in admitting emergency patients in a timely way and maintaining patient flow. While not in place at the time of the audit, one hospital was developing a similar emergency department procedure and another had identified the need through a recent emergency department review.

Four of the hospitals also had policies and procedures for ambulance bypass and pre-bypass for where the emergency department was overcrowded and inpatient beds were not available. Policies and procedures for bypass provided staff with trigger points for initiation, named responsible staff and outlined action for monitoring and alleviating the bypass situation.

4.3.2 Balancing elective and emergency admissions

Despite all elective admissions policies reflecting DHS policy and identifying the need to consider anticipated levels of emergency surgery, there was less focus on emergency demand more broadly. Most admissions from the emergency department are medical and, along with elective and emergency surgery patients, emergency medical patients compete for acute inpatient beds.

The competing demand for inpatient services requires hospitals to balance elective and emergency admissions, scheduling their elective surgery admissions with consideration for emergency admission demand. To do this effectively, hospitals need to monitor the demand for emergency admissions over time. While presentations to emergency departments are unplanned, they are also highly predictable and by identifying trends, such as the increase in demand for emergency admissions during the winter period, hospitals should be able to predict with a high degree of certainty the number of inpatient beds emergency department patients will require. Hospitals should then alter their elective surgery admission planning in response. This helps to avoid hospital-initiated postponements of surgery and assists patient flow for unplanned admissions.

None of the five hospitals monitored the balance between elective and emergency admissions on a regular and ongoing basis. One hospital undertook winter planning and made changes to elective surgery bookings on an annual basis, while another hospital had monitored elective and emergency admission balance over the previous financial year and updated its elective surgery booking template. A third hospital had undertaken similar work three years earlier and acknowledged its booking template required review, while the fourth and fifth hospitals did not consider the balance between emergency and elective admissions in planning elective surgery bookings at all.

A consequence of limited analysis of admissions data to inform elective surgery planning was evident across the five hospitals. Each hospital identified constraints on their capacity to provide access for elective surgery admissions. The most common issue related to competition with access to emergency services. Three of the hospitals reported that, in response to increasing emergency admissions and finite hospital funds, they had reduced access for elective surgery admissions. The rise in emergency admissions was also associated with increases in emergency surgery. All of the hospitals reported increases in emergency surgery, necessitating the postponement of elective surgery procedures.

These issues were reported to have the greatest impact on elective surgery patients requiring acute hospital facilities for their treatment. These patients are unsuitable for short stay models of elective care, often requiring access to intensive care or high dependency beds and longer inpatient stays. This patient group competes with emergency admissions for acute hospital beds. As hospitals are required to accept emergency admissions, cancellations of this group of elective patients can occur.

4.4 Managing elective and emergency admissions

Effectively managing elective surgery and emergency admissions is central to achieving good patient flow. It can:

- reduce unnecessary use of acute inpatient beds
- enhance the utilisation of other hospital resources, such as operating theatres
- help to avoid wasted capacity and the patient experiencing delay as a result of hospitals postponing elective surgery.

4.4.1 Elective surgery admissions

The pre-admission process

The pre-admission process aims to ensure the patient is ready for their surgery, with all necessary investigations completed and any risks to the procedure or admission identified and managed. Effective pre-admission processes reduce the chance that the hospital will postpone elective surgery because the patient was not ready on the day surgery was scheduled.

The pre-admission processes varied between the five hospitals. Each undertook a pre-admission process before the patient's admissions for elective surgery. Four of the five hospitals started their pre-admission process at an outpatient clinic where patients were referred for elective surgery and this process typically involved:

- assigning an urgency category
- completing a patient health questionnaire to assist in identifying any risks to the patient in undergoing the surgery
- asking patients to agree to placement on a 'stand-by' list, where the hospital could call them at short notice to fill vacancies
- determining whether patients were suitable for day surgery, a short stay admission or a multi-day stay admission.

In contrast, one hospital did not conduct outpatient clinics, with patients referred to their elective surgery waiting list through referrals from private doctors. This meant that information such as the suitability for admission to a short stay unit was not determined until the day of the patient's admission and no stand-by list was created. This reduced the hospital's ability to maximise theatre session utilisation by filling unexpected vacancies, reducing efficiency, and also to plan for the types of beds required for elective surgery.

In line with DHS guidance, this should occur within six weeks of the scheduled surgery. Keeping the pre-admission appointment close to the date of surgery reduces the chance of changes to the patient's wellbeing in the interim that affect their ability to undergo surgery. By lengthening the time between the pre-admission appointment and surgery hospitals risk increasing surgery cancellations and disrupting patient flow. Three of the hospitals conducted pre-admission assessments within six weeks of the scheduled surgery date, with a fourth hospital conducting assessments between six and eight weeks beforehand.

DHS requires hospitals to confirm elective surgery admission bookings no more than seven days in advance of the admission date. This allows hospitals the flexibility to plan elective surgery with consideration for urgent elective surgery and emergency surgery cases. Three hospitals did not meet this requirement, confirming their elective surgery bookings between ten days and four weeks in advance of the surgery date. By confirming elective surgery bookings so far in advance, these hospitals increase the risk that they will need to postpone surgery.

One hospital confirmed its elective surgery booking dates before the patient had attended the pre-admission clinic. This may result in the need to reschedule bookings because of information obtained during the pre-admission appointment, duplicating effort and creating uncertainty in the admission planning process.

Day of surgery admissions

Day of surgery admissions (DOSAs) are another important element of patient flow. By admitting patients on the day of their elective surgery, rather than the night before when they do not need acute inpatient care, hospitals are able to free up beds for patients who do need them.

Although all five hospitals reported that they encouraged the practice of DOSAs, only one had a written policy that required staff to admit elective surgery patients on the day of surgery. Staff at this hospital were also required to obtain approval for any exceptions. Despite the lack of written policies to make explicit hospitals' preference for DOSAs, the hospitals had good DOSA rates. At three hospitals DOSA rates exceeded 95 per cent of all elective admissions, while at one hospital the DOSA rate was between 90 and 95 per cent. The remaining hospital did not monitor DOSAs, and was unaware of performance or improvement opportunities.

Theatre scheduling

In managing elective surgery admissions, the availability of theatre resources is as important as the availability of beds. Scheduling theatre sessions is an integral part of managing patient flow, and hospitals should avoid fully booking lists too far in advance, in order to allow flexibility in accommodating other surgical patients.

All five hospitals managed their theatre scheduling well by not fully booking theatre sessions until one to two weeks in advance. Each also conducted weekly meetings of theatre staff to review the next week's theatre list. These meetings assisted patient flow and reduced hospital-based postponements of surgery by ensuring that:

- theatre sessions were fully utilised
- changes in staffing were managed
- necessary equipment was available
- any issues were identified and addressed.

Figure 4A
Theatre scheduling initiatives

DHS advised that it is funding three health services to undertake a *Redesigning Hospital Care* demonstration project to improve the surgical patient journey and management of operating theatres. DHS anticipates that this project will improve the journey for surgery patients across access, efficiency and effectiveness performance measures. Theatre scheduling processes will be an important part of the project. Following this project, DHS expects that new ways of working and learnings will be spread to other health services.

Source: Department of Human Services.

Four of the five hospitals conducted higher level meetings of surgical and theatre staff to monitor theatre utilisation and review theatre access issues. One health service, however, was unable to monitor its theatre utilisation due to the implementation of a new IT system which did not collect this data. This prevented the hospital from identifying possible opportunities to make better use of theatre time, which may improve patient flow.

Theatre scheduling should also take into account the demand for various surgical specialities. Hospitals should monitor their elective surgery waiting lists and ensure theatre time is appropriately allocated to surgical specialities according to demand. Four of the five hospitals actively reviewed waiting list demand between specialities to allocate resources appropriately. One hospital, however, based theatre session allocation on historical behaviours, meaning that access to elective surgery was not necessarily provided where it is needed most.

4.4.2 Emergency admissions

Long waits in emergency departments can reduce the quality of patient health outcomes and increase the time these patients spend in hospital. Along with the impact on the patient, delayed emergency admissions can affect patient flow and add to the hospital's costs. Hospitals therefore need to have effective strategies in place to manage emergency admissions in a timely way.

Emergency department admission processes

Typically, admission of a patient from the emergency department begins with the triage process, where staff will determine the patient's urgency and likely need for admission. A medical officer will then assess the patient, start treatment and confirm their need for admission. Staff will then refer the patient to the hospital unit or ward most appropriate to meet their care needs and make a request for an inpatient bed. When a bed becomes available, staff will transfer the patient from the emergency department to the ward.

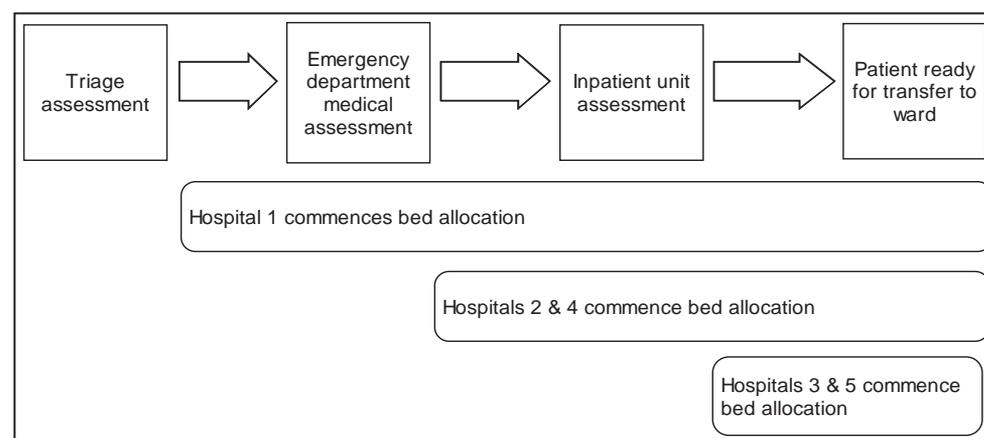
The emergency department cannot achieve good patient flow independent of the rest of the hospital. For hospitals to admit patients within clinically appropriate timeframes, wards must make beds available in a timely manner. Finding and allocating a bed to an emergency department patient who requires admission can take time. Alerting the person responsible for bed allocations, as early as possible, makes it more likely that a bed will be available at the time the patient is ready for transfer, reducing their length-of-stay in the emergency department.

As Figure 4B shows, the emergency admission process varied between the five hospitals, commencing as early as triage at one hospital, after medical assessment at two hospitals, and not until the designated medical or surgical unit had assessed them at two other hospitals. Given the time it can take to find and allocate beds, those hospitals that start the bed allocation process after inpatient assessment are likely to experience longer emergency department stays. Delays in receiving unit staff undertaking the assessment are likely to exacerbate this.

Two hospitals sought to overcome delays through the use of interim orders. Interim orders enable emergency department staff to place a patient in an inpatient unit, with care instructions. While the use of interim orders can result in emergency department staff placing the patients in an inpatient unit that is unsuitable to their care needs, they can also prevent medically stable patients waiting unnecessarily in the emergency department and improve patient flow.

In the three hospitals where interim orders were not used, it was because inpatient units did not accept emergency department care plans, reflecting poor cooperation between emergency department and inpatient medical staff.

Figure 4B
Emergency admission processes



Source: Victorian Auditor-General's Office.

Wider hospital responses to emergency admissions

Each of the five hospitals acknowledged the responsiveness of wards to 'pull' patients from the emergency department requiring admission was an area where they could improve processes and patient flow. 'Pulling' patients refers to actions of ward staff to:

- identify emergency department patients suitable for their ward
- expedite discharges to make beds available
- make beds ready for patients
- inform the emergency department and the person responsible for bed allocations that they are ready to take a new patient.

With the exception of some specialist areas such as intensive care, it was not evident that wards contacted relevant staff to inform them of available beds and to enable patients to be pulled from the emergency department. This was despite ward staff having access to information about patients waiting in emergency for admission. This resulted in the need for bed allocation and emergency department staff to 'push' patients onto wards, that is, actively contacting and informing wards of the need for a bed. Hospitals identified a range of reasons for the lack of active management of emergency department patients, including:

- increasing the speed of patient discharge and admission from wards meant additional work for ward staff
- ward staff prioritised meeting the needs of patients already on their wards and did not feel 'ownership' of patients waiting in the emergency department
- wards were often not confident of their capacity to take new admissions until late morning when ward rounds were complete
- ward staff were busy caring for patients on the ward and lacked time to monitor and respond to patients waiting in the emergency department.

Flex capacity

Demand for emergency admission varies and within this variation patterns occur, such as seasonal changes where admissions for influenza increase during winter. To manage the varying demand for emergency admissions, hospitals require some spare capacity to enable them to 'flex up' at times of high demand. Flex beds are hospital beds that are generally not staffed and unused, that can be opened at short notice, for short periods of time to cope with spikes in demand. This assists patient flow by reducing long waits in emergency departments and preventing the need to cancel elective admissions.

All of the five hospitals, with the exception of the dedicated elective surgery centre at one site, operated at bed occupancy levels close to 100 per cent. The flex capacity varied across the five hospitals. One hospital had seven flex beds, another four to six and a third usually had eight but this had been reduced to three due to redevelopment works. Two of the hospitals had no flex capacity at all.

The hospitals with three or fewer flex beds all experienced patients waiting in their emergency departments for longer than 24 hours in the third quarter of 2007–08. This indicates that access to flex capacity is an important component of managing the flow of emergency admissions.

Figure 4C
Winter demand management strategy

DHS advised that the Victorian Government has invested \$6 million in a Winter Demand Strategy to assist health services meet the surge in emergency demand during the winter period. Key elements of the strategy include funding an additional 100 beds for 100 days, piloting models of care to reduce unnecessary presentations of residents from Residential Aged Care Facilities to Emergency Departments and expansion of Intensive Care Unit liaison nurse programs.

Source: Department of Human Services.

4.5 Conclusion

Effectively managing the current and forecast demand for acute admissions will assist patients to access acute care in a timely manner with less pressure on hospital resources. Each of the five hospitals had implemented a range of demand management strategies that both substituted for, and diverted patients from inpatient care. Evaluation of the strategies is required to assess their effectiveness, and to refine the strategies.

The planning each of the audited hospitals undertook to manage their acute inpatient admissions would be enhanced by regular and ongoing monitoring of the balance between elective surgery and emergency department admissions. Point-in-time monitoring of the balance was occurring, however, as demand varies throughout the year, and patterns can change over time, this is not sufficient.

All hospitals postponed elective surgery due to demand for admissions by emergency department patients. While presentations to emergency departments are unplanned, they are also highly predictable and a reduction in the number of surgery postponements and improved admission scheduling should be achievable by monitoring admissions data. There is opportunity for hospitals, with support from DHS, to improve elective surgery planning by understanding variation in emergency admission demand and planning elective admissions in response.

All five hospitals had a range of processes to manage inpatient admissions that improved patient flow, although these related primarily to elective surgery. The processes for emergency admissions were notably less effective and relied heavily on the active management of emergency department staff. Ward staff had a more passive approach that often contributed to delayed admissions and longer emergency department waits.

To improve 'pulling' behaviour, hospitals should understand the barriers and enabling factors better from the perspective of inpatient wards, set expectations for the participation of ward staff regarding waiting patients and attempt to identify and address information gaps and other barriers.

Recommendations

Public hospitals need to:

- 4.1 reduce pressure on existing resources by maximising the use of care models that substitute for inpatient beds. This will require collaboration with DHS to ensure timely and effective implementation
- 4.2 reduce bottlenecks that delay admission for emergency department patients, including promoting greater use of interim orders and the pulling of patients from the emergency department into ward beds
- 4.3 undertake more regular and comprehensive analysis and monitoring of data to inform their scheduling, and more actively manage variation in demand and capacity.

The Department of Human Services should:

- 4.4 work with hospitals to develop tools to monitor emergency admissions and to balance emergency and elective demand more effectively.
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5 Managing the inpatient stay

At a glance

Background

A hospital's ability to admit patients for acute inpatient care depends on whether they have a bed available. If a bed is unavailable then the hospital may postpone elective surgery or keep emergency department patients waiting longer than is clinically desirable for admission. Placing a patient in the right kind of bed is also important for their stay in hospital. Having available, patient-appropriate beds depends on demand and how a hospital manages its beds. The need to balance competing demand for acute inpatient care from emergency department and elective surgery patients, along with knowing the status of the hospital's beds makes bed management a complex task.

Key findings

- Not all hospitals had bed management policies and procedures to support practice and to guide decision-making. This leads to inefficient and inconsistent bed management practices.
- The use of bed managers is a positive initiative, promoting a coordinated and collaborative approach to managing beds hospital-wide.
- All hospitals used manual, paper-based systems that were cumbersome and did not support effective planning for bed utilisation. No hospital had effective electronic bed management systems that provided real-time information on the hospital's bed state.

Key recommendations

The Department of Human Services should:

- develop, in conjunction with hospitals, comprehensive bed management guidance for achieving better practice, just as it has developed guidance on elective admissions (**Recommendation 5.1**)
- introduce the preferred system to each Victorian hospital as a key tool for improving patient access and flow, giving consideration for the life-cycle costs of implementation, following the pilot and evaluation of the electronic bed management systems (**Recommendation 5.2**).

5.1 Introduction

Having available 'patient-appropriate' beds largely depends on how a hospital manages its beds. The need to balance competing demand for acute inpatient care with emergency department and elective surgery patients, along with knowing the status of the hospital's beds makes bed management a complex task. In assessing how well hospitals managed their inpatient beds, we expected that they should have:

- bed management processes that optimised patient flow
- information systems to support efficient and effective bed management.

5.2 Bed management processes

Processes to control and understand the changing status of hospital beds underpin effective bed management. They help staff to manage the competing demands for acute beds from the emergency department and elective surgery booking office and transfers from other hospitals. Processes also help staff to gather and understand information on the status of beds across the hospital and how many beds the hospital requires each day for new patients. Comprehensive bed management policies and procedures to guide effort and dedicated, trained staff to coordinate this effort are important.

5.2.1 Policies and procedures

Documented bed management policies and procedures are valuable resources to support and guide staff. They inform decision-making, promote consistent work practices and communicate expectations regarding bed management. We expected the five hospitals to have documented bed management policies to support bed management practices and guide decision-making.

Only three hospitals had documented policies and procedures available and there was considerable variation in the degree to which they provided guidance to staff. Of these, only one had a comprehensive manual of bed management policies, procedures and guidelines. This manual provided staff with assistance and included:

- allocation arrangements for emergency, elective, direct and various specialist admissions
- procedures for managing times of peak demand, including escalation arrangements
- detailed information on bed management tasks
- decision trees for various scenarios.

At two of the three other hospitals with bed management policies, one had guidance that included high-level principles for bed management, highlighting to staff the need for effective communication pathways, transparent and joint decision-making and streamlined bed management practices. The other hospital had guidance that also included more operationally-focused bed management information, such as admission procedures for emergency and elective patients and bed management meeting requirements.

Two of the hospitals had no documented bed management policies. While one of these kept a bed management resource manual, it was outdated, contained redundant information and was not used by bed management staff. The lack of documented policies and procedures at these hospitals limited their ability to manage beds consistently, particularly where there was more than one bed manager. This meant there was greater reliance on the accumulated knowledge of individual staff members, increasing the risk that bed management practices and patient flow would be less effective if those staff members were unavailable.

5.2.2 Bed managers

The complexities of bed management, including competing demands and collating information from a range of sources, require a coordinated and collaborative approach to maximise outcomes and efficiency. To facilitate effective bed management and optimise patient flow, the dedicated bed managers require adequate training and appropriate authority and accountability to prioritise and allocate inpatient beds.

All five hospitals reviewed had bed managers to coordinate the prioritisation and allocation of beds. Each hospital also used after-hours coordinators to manage beds for weekend, evening and night shifts. The bed manager and after-hours positions were held by nursing professionals, reflecting the need for clinical knowledge and familiarity with general ward and hospital processes.

The responsibilities of the bed managers commonly included:

- coordinating admissions
- optimising bed resources
- allocating beds on the basis of clinical need
- liaising and communicating with relevant stakeholders
- participating in relevant meetings and improvement projects.

In two hospitals, bed managers had additional roles, including:

- activating hospital early warning systems (a state of pre-bypass of ambulance services)
- attending at and coordinating emergency code responses
- coordinating nursing staff allocations
- assisting with external placement of patients to avoid acute admissions.

These additional roles were, at times, onerous, distracting the bed manager from their key responsibility of managing hospital beds and patient flow.

In all but one hospital, the bed manager worked in physical isolation from other patient flow services. Where the bed manager was co-located with elective surgery booking office, nursing allocations and patient flow staff, there was enhanced communication and a more coordinated approach to patient flow management.

Authority

Given the bed manager's responsibility for coordinating admissions and allocating beds, it is important that they have sufficient authority and management support within the hospital to do their job.

At four of the five hospitals we audited, the bed managers had sufficient authority to perform their role. The bed managers' authority was enhanced through the support of managers with responsibility for patient access or patient flow, enabling them to escalate issues impacting on their role to people with the responsibility and authority for overall patient flow within the hospital. At the other hospital, the bed manager was supported by a hospital executive with no responsibility for patient access or flow, despite there being a hospital manager with these responsibilities. The lack of alignment between the structure and responsibilities may reduce the ability of the bed manager to address patient flow issues quickly, because decisions would involve a greater number of people.

Training

All bed management staff received training, although the nature of the training varied. Orientation processes generally involved 'shadowing' existing staff over a period of a few days. Only one hospital provided an extensive period of orientation with study, training and support provided over a three-week period, while two of the audited hospitals offered ongoing training and development for their bed managers.

Where hospitals did provide training, this was generally for new staff. At some hospitals, staff in bed manager roles had held the positions for extensive periods and we found no evidence that refresher training had been provided, updating their bed management skills to reflect current practice.

5.3 Bed management information systems

Knowing the status of hospital beds (bed-state) is a constant challenge for hospitals. With patients continually arriving, moving around and leaving the hospital, the bed-state is never static. For bed managers to appropriately allocate beds, they need current information on the hospital's bed-state, predicted discharges, planned admissions and patients waiting in the emergency department for admission. This information is also necessary to predict and respond to periods of increased demand, where the hospital may require additional effort to facilitate discharges and make beds available for incoming admissions.

We expected that, given the need for accurate and current bed-state information to manage patient flow, the hospitals would have comprehensive bed management information systems.

We found that across the five hospitals, bed management systems and processes varied considerably and functioned at different levels of efficiency. The systems included bed management meetings; electronic systems; paper-based resources; physical ward 'walkarounds' and telephone and pager-based communication tools. We discuss bed management meetings and electronic systems later in this Part. Figure 5A gives a snapshot of these systems and processes and shows that:

- Paper-based bed management tools were extensively used. They were often complex, used inconsistently and difficult to complete, making the collated information difficult to interpret and reducing the accuracy of the hospital's bed-state. The paper-based tools were updated throughout the day, although this information was only available to the bed manager.
- The bed management systems and processes did not provide current bed information. To obtain the most current bed-state data, bed managers spent considerable time contacting wards and departments, either by phone, page or in person, to obtain information on patient movement and bed state. Ward visits occurred up to four times each day in some hospitals. Some hospitals reported that the reported bed-state was often different from the actual bed-state (particularly at shift handover), making planning for admissions and discharges difficult. The lack of current information was symptomatic of poor IT systems to support bed management. Bed managers also received continuous communication from wards, departments and external sources such as other hospitals, via pager and telephone, for bed requests or patient transfers.
- Most hospitals conducted bed management meetings with ward managers to obtain additional information on the hospital's bed-state. Bed managers usually visited to wards to obtain bed-state data for these meetings.

Figure 5A
Summary of bed management systems and processes

Hospital 1	<p>Two bed managers are responsible for bed management: a surgical flow coordinator and bed resource manager. The surgical flow coordinator identifies surgical patients who need an acute inpatient bed and meets with the surgical ward managers to discuss and agree on patient allocation. The surgical flow coordinator records the outcomes on paper forms and then meets with the bed resource manager to negotiate and prioritise the allocation of surgical patients to available beds, and advises wards of the decision.</p> <p>A morning teleconference to discuss bed management occurs, with wards reporting expected discharges and bed-state. The bed resource manager collates this information on forms and then arranges beds for patients who need them. The bed resource manager and the surgical flow coordinator also review the expected elective admissions for the following day as part of the planning for the bed requirements. Late in the day, handover to the after-hours coordinator occurs, with the forms informing them of the hospital's bed-state.</p>
Hospital 2	<p>The patient flow coordinator conducts a physical walkaround of the wards to identify the bed-state. They also review emergency department patient information to identify patients requiring admission and liaise with the emergency department admitting officer. A morning bed management meeting occurs to collect current data on bed status and make bed allocation decisions, taking into account anticipated emergency and elective demand, available capacity and the nursing staff profile. The patient flow coordinator then collates the information from the bed management meeting on a form.</p> <p>There is a second bed management meeting in the afternoon, following the same process. The patient flow coordinator and the after-hours coordinator then review the following day's expected elective admissions as part of planning for bed requirements.</p>
Hospital 3	<p>Bed assignment officers communicate with staff from all the health service's campuses and wards to identify the health service's bed-state. The bed assignment officer collates this information on a form, with the data then entered into an electronic spreadsheet for use at the morning bed management meeting. Ward managers also update patient status on the hospital's bed management IT system.</p> <p>At the bed management meeting, which the hospital uses to identify the current and predicted bed-state, participants update the bed assignment officer on the bed-state in their ward. The bed assignment officer also brings an extract from the bed management IT system and participants compare both the form and the IT extract to identify any discrepancies.</p>
Hospital 4	<p>Ward managers complete ward rounds to identify discharges. The ward managers then communicate this information to the admissions officer, who collates this information on a form. The admissions officer then identifies emergency department and elective surgery patients requiring admission.</p> <p>Following this, the admissions officer conducts a walkaround of all wards to negotiate discharges and admissions from the emergency department and other wards. The number of walkarounds each day varies among admissions officers, but may be as high as four times. A daily medical meeting occurs that discusses discharges and strategies, along with another meeting in the afternoon to discuss admissions from the emergency department. There is no daily bed management meeting involving the ward managers.</p>
Hospital 5	<p>The patient services manager conducts morning ward rounds to identify the timing of discharges and arrange inter-ward transfers. They collate this information on a form, which is then updated throughout the day. A morning bed management meeting occurs, with input from all wards via another form. The patient services manager collates this information onto a whiteboard, with a printout used to inform updates to the original form. A second meeting with the after-hours coordinator occurs in the afternoon to identify the bed-state, based on the bed status form.</p>

Source: Victorian Auditor-General's Office.

Bed management meetings

Bed management meetings are integral to the bed management process. They are a forum for ward managers to report on their ward's bed-state, identifying:

- the number of occupied beds
- predicted and actual patient discharges
- required staffing levels.

This information gives bed manager a snap-shot of the hospital's current bed-state and its capacity to admit emergency department and elective surgery patients as well as manage transfers from theatre and intensive care units to wards.

Bed management meetings also provide an opportunity for the bed manager to relay this hospital-wide bed-state information to the ward managers, patient flow coordinators and human resources manager so that they are aware of the hospital's bed requirements each day and to drive responsive action to enable patient admissions.

In four hospitals, bed management meetings were a focal point of the bed management information system. Bed managers conducted the daily meetings, bringing together a range of staff to share information. Attendees at meetings typically included the bed manager, ward managers, human resources/nurse bank managers, patient flow or patient access managers and nurses with responsibility for key areas such as hospital-in-the-home, sub-acute services and aged care assessment.

For most hospitals, meetings occurred face-to-face and were well attended, providing participants with an understanding of the bed-state in other parts of the hospital. At one hospital, the meeting was teleconferenced and with insufficient conferencing lines, participation was limited with staff tending to drop-out of the conference after providing occupancy and discharge information for their ward.

Only two of the hospitals used their bed management meetings to establish and communicate the hospital-wide variance between expected admissions and discharges—the hospital's capacity to admit patients. Where this information was identified, it provided an opportunity to alert staff of a 'high demand day' and initiate action if the variance showed a shortage of beds to accommodate the expected admissions. One hospital demonstrated this, where calculation of available bed variance resulted in communication to all medical staff of the need to enhance the timeliness of patient discharges that morning.

These two hospitals also increased the value of their bed meetings by communicating to ward staff information about particular patients awaiting admission to their wards (e.g., a patient waiting in the emergency department required a surgical bed). Providing and discussing this information encouraged staff to take responsibility for patients destined for their ward, and promoted 'pulling' them from the emergency department, intensive care unit or other location.

Bed management systems

It is possible to overcome the limitations of paper and manual bed management systems and provide hospital staff with current information on the hospital's bed-state with electronic bed management systems. A well designed electronic system would enable hospital staff to know, in real time:

- the occupied or available status of a bed
- who is occupying the bed and their date of admission
- whether an outlying patient is in the bed, for example, a medical patient occupying a surgical bed
- the type of ward where the bed is, for example, medical or surgical, adult or paediatric
- the overall hospital bed-state.

All the audited hospitals operated one or more electronic systems to identify and record bed management information, although these systems were not always designed specifically for bed management. These included emergency department systems that listed patients awaiting admission, elective surgery booking systems that listed planned admissions and electronic waiting lists for discharges to sub-acute services. These electronic (IT) systems were generally separate with staff having to interrogate multiple systems and manually collate the data to get a picture of bed-state. The systems were not always widely available to staff across the hospital.

Only two hospitals had specific bed management IT systems that were accessible by staff throughout the hospital, and only one of these was web-based to enable hospital-wide input. The bed management IT systems of the two hospitals included most of the features outlined above and provided staff with read and write access. This enabled ward staff to update information on patient discharges and identify incoming admissions and hospital-wide bed state. However, neither system could provide real-time data on the hospital's bed-state, in part because staff did not routinely update the information. Real-time bed-state is a crucial element of bed management, enabling hospital staff to better match demand and capacity and reduce emergency department patients' length-of-stay.

DHS recognised in 2005 the significant limitations that locally developed manual bed management processes and systems had on patient flow, and started to explore options for an electronic system that would improve patient access and flow, as well as improve resource allocation and utilisation.

DHS is in the process of piloting a range of electronic bed management systems, including two systems that hospitals have developed and one proprietary system that New South Wales hospitals use. Following delays caused by legal and licence issues for the proprietary bed management system, DHS expects that the pilot of the proprietary system will start in October 2008, with an evaluation of the three bed management systems occurring after 12 months.

5.4 Conclusion

The lack of comprehensive bed management policies and procedures at four of the five hospitals contributes to less efficient and effective practices, with staff lacking support and guidance for bed management practices and decision-making. The lack of documentation at one hospital and different approaches led to unclear data on the hospital's bed-state. This can affect bed status information and the currency of that data.

The use of bed managers is a positive initiative, enabling a coordinated and collaborative approach to managing beds hospital-wide. It is important, however, that bed managers have adequate authority and appropriate management support to do their jobs. Having bed managers report to, and be supported by, patient access/patient flow managers allows bed management issues to be seen and addressed within a patient flow context.

The lack of effective electronic bed management systems that provide real time information on a hospital's bed-state impedes patient flow. Current manual processes are inefficient and resulted in duplicated effort. Hospitals can improve their manual bed management systems, including using bed management meetings as a forum to alert relevant hospital staff, such as ward managers, of the hospital-wide bed-state. This would assist them to take greater responsibility for 'pulling', or actively seeking, patients needing admission into their wards.

DHS also needs provide Victoria's hospitals with effective electronic bed management systems, as soon as possible.

Recommendations

The Department of Human Services should:

- 5.1 develop, in conjunction with hospitals, comprehensive bed management guidance for achieving better practice, just as it has developed guidance on elective admissions
 - 5.2 introduce the preferred system to each Victorian hospital as a key tool for improving patient access and flow, giving consideration for the life-cycle costs of implementation, following the pilot and evaluation of the electronic bed management systems.
-

6 Managing inpatient discharge

At a glance

Background

Discharge from an acute inpatient setting is an important hospital process. Hospitals need to discharge patients in a timely manner so that the optimum beds are available. Effective discharge practices can significantly improve patient access and flow.

Key findings

- While discharge policies identified the staff responsibilities for patient discharge, none clearly articulated the roles involved in the discharge process. This will impact on the effectiveness of the discharge process, given the range of hospital staff involved, and needs to be better coordinated.
- The early discharge performance was consistent across the hospitals examined and the statewide average. More effort should be directed to increasing the percentage of patients being discharged early in the morning and on weekends, when beds are in demand.

Key recommendations

Public hospitals should:

- develop comprehensive discharge policies and procedures that clearly identify staff roles and responsibilities, particularly those responsible for the coordination of discharges (**Recommendation 6.1**)
- promote the use of criteria-led discharges to reduce discharge bottlenecks caused by senior medical staff being unavailable, and reduce duplicated effort across individual hospitals (**Recommendation 6.2**)
- increase the rate of weekend discharge for those patients able to return to their homes without the need for community support (**Recommendation 6.3**).

The Department of Human Services should:

- facilitate the development of discharge criteria to enable a consistent approach and reduce duplicated effort (**Recommendation 6.4**).

6.1 Introduction

When a hospital finishes treating a patient's injury or illness, it will discharge them to a setting that is more appropriate for their ongoing care and needs. Most patients do not require ongoing care after they leave hospital and for them the appropriate setting will be their home. For those patients who need additional support, discharge may be to a rehabilitation or residential aged care service, or sub-acute facility.

Discharge from an acute inpatient setting is an important hospital process. Hospitals need to ensure that they discharge patients, in a timely manner, so that optimum beds are available for admissions. If managed well, timely discharges can significantly improve patient access and flow.

Timely discharge, where the hospital discharges patients when they are medically fit, can reduce the occurrence of patients ready for discharge continuing to occupy beds and preventing re-allocation of beds to other patients. Access block often manifests as extended stays in emergency departments or in cancelled elective surgery. Timely discharge is also important for patient care, as it minimises the risks associated with prolonged hospitalisation, such as hospital-acquired infections and reducing ability to function independently.

To assess how well hospitals discharged patients from the acute inpatient setting, we examined whether hospitals:

- planned discharge to optimise patient flow
- discharged patients in a timely manner
- provided timely access to diagnostic and other specialist and allied health services.

6.2 Discharge planning

Managing discharge is a complex process. To be effective it requires a planned and coordinated approach involving the early identification of patients with complex needs and addressing them to ensure a successful discharge from the hospital. It requires a multi-disciplinary approach, with hospital staff and the patient being involved in planning the discharge. To maximise its effectiveness, hospital staff need well defined policies and procedures to support the process and guide actions—particularly where hospitals have junior medical staff on a job rotation schedule and their training is clinically focused without emphasis on team work and elements of patient flow, such as discharge planning.

6.2.1 Discharge policies and procedures

Discharge policies and procedures underpin discharge processes. They inform staff about organisational requirements and individual roles and responsibilities and promote a consistent approach to discharge planning, enhancing the efficiency and effectiveness of patient discharge. We expected that the five hospitals reviewed would have current, documented discharge policies and procedures to support and guide patient discharge practices.

While all five hospitals had documented policies and procedures, the extent to which they provided staff with detailed effective guidance on discharge and clearly identified the roles and responsibilities varied. Four hospitals had policies that included discharge procedures, with the better policies including information on:

- discharge risk screening
- developing discharge plans
- notifying the patient's community supports
- notifying the patient's family or carers of the expected discharge date
- expected discharge time, and options if staff cannot achieve this
- discharge medications, including processes for obtaining medication information at admission
- involving the patient's general practitioner in the patient's discharge.

One hospital's discharge policies provided only high-level information, noting the importance of, and defining, discharge planning. It did not set out any procedures for staff to follow to enable consistent patient discharge. This hospital staff advised they were currently reviewing their discharge policies.

While all policies identified the staff responsible for patient discharge, generally all health professionals involved in the patient's care, none of them clearly articulated the roles involved in the discharge process. Given the range of hospital staff involved, discharge planning requires a coordinated approach. Without coordination, effort may be duplicated or not undertaken in a timely manner, slowing the discharge process.

6.2.2 Discharge planning processes

A hospital's processes can have a significant influence on the effectiveness of patient discharge. Processes, such as daily ward rounds to assess the patient's suitability for discharge, can increase patient length-of-stay and delay discharge if not performed well, or in a timely manner. Key processes to reduce delays and improve patient flow include early planning for discharge, screening for patients at risk of discharge delay and mechanisms to identify patients for discharge.

Early discharge planning

Planning for discharge should start as soon as possible. Early planning provides hospital staff with the best opportunity to address any risks to timely discharge (such as the need to arrange services to support the discharge), helps to inform the patient and their family or carer of when they are likely to be discharged and assists the hospital to better predict its admissions and discharges. For elective surgery patients, discharge planning should start when they undergo their pre-admission assessment. For unplanned admissions from the emergency department, discharge planning should start on the first day of the inpatient stay.

All five hospitals started planning their patients' discharge at either pre-admission or immediately following admission. Common elements of early discharge planning included:

- determining the likely discharge destination for the patient, for example, home, to rehabilitation or to aged care
- estimating the date of discharge within 48 hours of admission
- identifying the required actions to facilitate the discharge, for example, referral to home help services, coordination of family meetings, referral to aged care assessment services.

Risk screening

Some admitted patients represent a 'discharge risk' for hospitals. This is where there is potential for discharge delay because the patient may require assistance for self-care, they live alone or they are responsible for the care of others.

At all of the hospitals reviewed, risk screening tools were used as part of their early discharge planning processes, enhancing the hospitals' ability to mitigate the risk of discharge delay and reducing the potential for 'blocked' beds.

Identifying patients for discharge

Timely identification of patients who are medically fit for discharge is an important part of managing patient flow. Delays can result in unnecessary use of beds, diminish the patient's quality of care and increase health care costs. We expected hospitals to have processes that enabled them to identify, in a timely manner, patients who were ready for discharge. All five hospitals had processes to identify patients for discharge, including ward rounds, discharge meetings and monitoring of long-stay patients.

Ward rounds

Ward rounds are a way for staff to review a patient's progress in getting well and are usually the time when doctors decide that a patient is medically fit for discharge. To maximise the time available to arrange a patient's discharge, ward rounds need to occur as early as possible in the day. Late decisions will likely result in patients spending unnecessary time in an acute bed through delayed discharge.

All five of the hospitals conducted ward rounds in the morning to identify patients medically fit for discharge, although at one hospital ward rounds started late in the morning, limiting the hospital's available time to arrange discharge. The effectiveness of ward rounds as a means to identify patients for discharge was significantly reduced at the two hospitals that relied on the services of Visiting Medical Officers (VMOs). Unlike full-time medical staff directly employed by the hospital, VMOs are private practitioners who work on a sessional or fee-for-service basis. These hospitals reported that they experienced delays in identifying and discharging patients because junior doctors were reluctant to make discharge decisions on ward rounds without VMO confirmation, and the VMOs were not available each day.

Discharge meetings

Each hospital conducted meetings to identify patients suitable for discharge, although the nature and frequency of these meetings varied considerably. All hospitals used daily ward meetings to identify dischargeable patients, and those that worked best involved a range of hospital staff including nursing, medical, allied health and care coordinators. Two hospitals had limited input from the medical staff, and the subsequent need to follow-up with doctors reduced the ability of hospital staff to start the discharge process.

Hospital staff discussed patient discharge at a range of forums. Some of the hospitals used patient flow and bed management meetings, although in these cases, discharge was often not the main focus but part of broader hospital access discussions.

Other hospitals used daily discharge-specific forums to focus on discharge and impediments to discharge. For example, at one hospital, in addition to the daily ward meetings, medical staff also participated in daily meetings to discuss dischargeable patients and identify barriers to discharge. This meeting was led by a senior manager and the timing of the meeting was built into the schedules of medical staff to ensure they participated, overcoming participation issues that some other hospitals experienced.

Long-stay patients

Hospitals face considerable challenges managing patients who occupy acute beds for long periods. While it is clinically appropriate for some patients to stay for an extended period, other patients may occupy acute beds even though they no longer need acute care. Commonly, these patients stay in the acute setting because appropriate sub-acute and post-acute care is unavailable, factors often outside of the control of the hospital. The complexity of these patients, the health risks associated with extended stays and the costs to the hospital and health system make early identification and management of these patients essential. Figure 6A shows examples of long-stay patients and the issues affecting timely discharge.

Figure 6A
Long-stay patients— case studies

All hospitals reviewed had patients in acute beds that no longer needed acute care. Commonly, these were patients whose complex needs, combined with service gaps, resulted in long stays. Typically, these patients were:

- aged under 65 years and with a disability, such as acquired brain injury patients
- palliative care patients
- patients with high medical or nursing needs requiring access to sub-acute or residential care beds, such as patients with permanent tracheotomies, a semi-permanent or permanent opening in the trachea to facilitate breathing
- non-weight bearing patients requiring access to interim care beds and ineligible for the transition care program.

Four long-stay cases at one hospital alone constituted a total length-of-stay of 537 days, with the maximum patient stay for one patient reaching 227 days. The following provides a summary of these cases and the issues that prevent timely discharge.

Case study one

A 48 year old patient with acquired brain injury (ABI) was originally admitted to hospital with an acute illness and was unwell for two months. The patient needed social supports to help with their care following discharge. As they did not have any, the hospital sought other care options, many of which the patient was inappropriate for because of their age, such as residential care. The patient was eventually accepted for disability housing services and ABI case management. However, these services have high demand and low capacity and in the interim the patient continues to wait in an acute inpatient setting.

Case study two

A 50 year old patient was admitted with an acute illness. During the patient's stay, their condition deteriorated, requiring them to have a tracheostomy. Having this procedure meant the patient could not return home and needed 24-hour supported care due to their complex needs. The patient did not have any family supports to provide care and 24-hour care was not available from disability services. There were also no age-appropriate residential care facilities that could cater for the patient's complex medical needs. After a length-of-stay of 140 days, the patient was discharged to a sub-acute facility where they are waiting for an appropriate residential care facility.

Case study three

A 60 year old supported residential service (SRS) patient was admitted to hospital for treatment that should have typically taken one day. During the patient's stay at hospital, the SRS evicted the patient because it felt it could not provide proper care. The hospital then became responsible for finding alternate accommodation for the patient. After a stay of 52 days in an acute inpatient setting, the hospital discharged the patient into sub-acute care where they are waiting for appropriate accommodation.

Comment

The Department of Human Services (DHS) has recognised that a gap exists for patients aged between 51 and 64 years, leading to long stays in an acute inpatient setting. These patients do not fit the age criteria for the transition care program or specific programs for patients with disabilities. DHS advised VAGO that it is piloting a Transition Care Program Plus program to target these patients. An evaluation of the pilot was due for completion in August 2008. A gap still exists, however, for those patients aged less than 51 years of age.

Source: Victorian Auditor-General's Office.

All five hospitals were able to identify long-stay patients through the use of data reports, which 'flagged' when a patient had exceeded a hospital-defined period. For most hospitals this period was 14 days, although for one it was eight days and for another it was 35 days before the hospital took action to address discharge barriers. Four of the hospitals also actively monitored long-stay patients through weekly patient meetings or ward rounds, with two of these hospitals involving executive staff in the process.

Hospitals used specific staff to coordinate the response to facilitate discharge for those patients experiencing discharge delay. Care coordinators were active in three of the hospitals reviewed, while one hospital employed a similar but more specific role dedicated to the management of discharge for patients moving to sub-acute services. Support for the work of care coordinators in facilitating discharges was strong in these hospitals and seen as crucial to improving patient flow.

6.2.3 Discharge performance

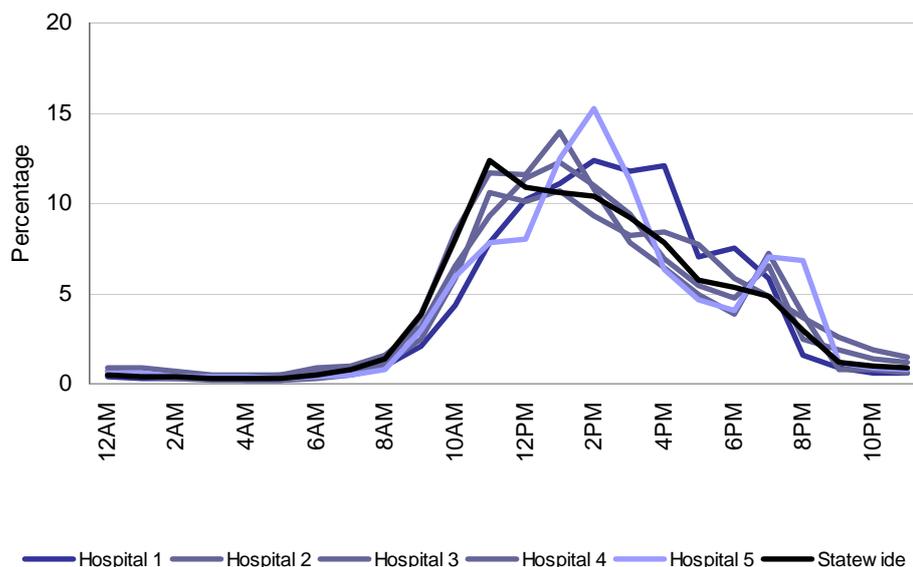
Timely discharge from an acute inpatient setting is important not only for improved patient outcomes, but also for improved patient flow through the hospital system. Movement through the system will slow if patients not requiring further treatment occupy acute beds, limiting the ability of hospitals to offer appropriate care to people with greater clinical needs.

With most planned hospital admissions, such as elective surgery, occurring early in the morning, it is important that acute beds are also available early in the day. Each of the hospitals reviewed recognised this need, with discharge planning policies identifying 10–00 a.m. as the time by which hospitals should discharge inpatients.

As Figure 6B shows, there is variation across the hospitals in the time of day most of discharges occur. In 2006–07, no hospital achieved its own target of discharging most patients by 10–00 a.m., with the percentage of patients discharged before this time ranging between 10.1 per cent and 16.1 per cent.

Across the state only 16.8 per cent of patients were discharged before 10–00 a.m. All hospitals performed better in the number of patients discharged before midday, ranging between 18.2 per cent and 27.4 per cent. However, in the hospitals examined, the vast majority of patients were discharged in the afternoon, with the percentage of patients ranging from 72.6 per cent to 81.1 per cent. The statewide average for afternoon discharges is 70.8 per cent.

Figure 6B
Discharge performance by time of day, 2006–07



Source: Victorian Auditor-General's Office, from Department of Human Services' data.

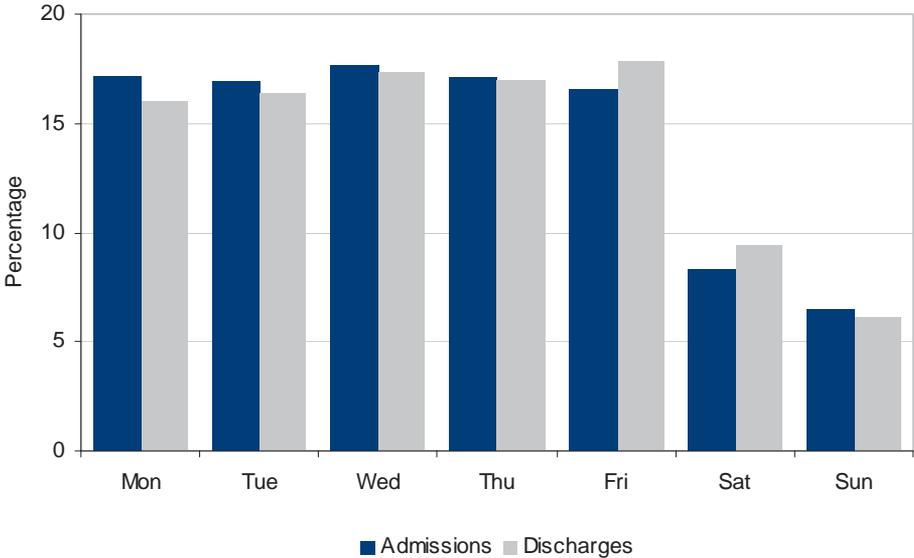
The day a hospital discharges patients also has a bearing on patient access and flow. The practice of providing the bulk of services on weekdays and reducing the level of services offered on weekends is common in hospitals nationally and internationally. As Figure 6C shows, the majority of admissions and discharges occur on weekdays, with a significant reduction on weekends.

While the reduction in admissions is explained by the practice of scheduling most elective surgery on weekdays, the reasons for the reduced discharges on weekends is less clear cut. A frequently cited reason for lower weekend discharges is that community support services are generally unavailable on weekends and therefore patients who need these services for discharge have to wait in the hospital until they can access the services on the next weekday. However, evidence from the United Kingdom's National Health Service suggests that up to 80 per cent of all discharges are 'simple' in that the patient does not require complex social service support.

One of the main reasons for the reduced weekend discharge is that hospitals significantly reduce their staffing profiles on weekends. Consequently, hospitals often do not utilise ward rounds on weekends to identify patients for discharge and staff, such as allied health, are often not available to facilitate discharge. This has implications for better aligning demand and capacity—vital for good patient flow. Figure 6C shows the impacts of this, with demand exceeding capacity on Sunday and, because of limited ward rounds and other discharge processes on weekends, Monday discharges are also delayed resulting in demand significantly exceeding capacity.

We found that strategies had been developed to increase the rate of weekend discharges, including rostering more medical and allied health staff and conducting weekend ward rounds to identify dischargeable patients. These strategies are yet to be evaluated but are expected to reduce the number of patients remaining in inpatient beds once their treatment has been completed.

Figure 6C
Admissions and discharges by day of week, 2006–07



Source: Victorian Auditor-General's Office, from Department of Human Services' data.

6.3 Access to diagnostic and other specialist services

Diagnostic services, such as radiology, pathology and pharmacy, are a key part of the discharge process. Diagnostics can inform clinicians about a patient's fitness for discharge, while pharmacy services are essential for those patients requiring medication for their ongoing care.

The provision of timely services is an essential part of managing patient flow. Given their hospital-wide role, diagnostic and specialist services are a potential bottleneck. We expected, therefore, that hospitals should have strategies in place to minimise discharge delays caused by waits for diagnostic and specialist services.

6.3.1 Radiology

Radiology services were provided on a 24 hour basis at all five hospitals, although, for some, this included an on-call service after hours. Most of the hospitals measured and monitored their performance against key performance indicators, which enabled them to identify areas of delay and assess the impact on patient flow.

One hospital did limited monitoring of its radiology department performance and was unsure what impact its practices had on patient flow.

6.3.2 Pathology

Pathology services were provided on a 24 hour basis at all health services, and all had processes to prioritise urgent requests in order to reduce delays. While some health services used manual processes to highlight urgency, such as noting it on the request slip or by phone communication, one hospital had a system to flag urgent requests on an internal database, with dedicated staff to ensure these requests were processed as a priority. All hospitals we visited collect performance data to identify delays and assess the impact that pathology services have on patient flow.

6.3.3 Pharmacy

The provision of pharmacy services varied across the hospitals we audited, and included 24-hour services and services provided during the day, with on-call services after hours. All hospitals identified pharmacy-related delays, although typically these delays were caused by incomplete, illegible or incorrect scripts.

Only two hospitals collected performance data for the pharmacy services. One hospital advised that it did not collect data because factors outside the control of the pharmacy, such as incomplete scripts, would affect the results, while another advised that it was too busy to collect data and that doing so would not lead to improvements.

One hospital demonstrated innovation through the introduction of electronic prescriptions and the pharmacist initiated e-script transcription service (PETS). Electronic prescriptions reduced problems this hospital had experienced with illegible handwriting and minimised the potential for errors through the use of software with in-built checks. The PETS initiative involved completion of the electronic prescription in preparation for medical staff to check and approve. This resulted in a range of benefits, including decreased error rates and earlier preparation of discharge prescriptions, resulting in earlier discharge from hospital.

6.3.4 Allied health services

A number of other services are involved in patient care and can also impact on the discharge process. These include occupational therapy, physiotherapy, speech pathology, social work and dietetics, commonly referred to as allied health.

Allied health services were typically offered during business hours, with some specialty units offering after-hours services such as evening and weekend physiotherapy. Performance monitoring varied across the hospitals. Allied health units were not always aware of their impact of their services on patient flow.

6.4 Conclusion

Discharge from an acute inpatient setting is one of the most important hospital processes. Hospitals need to discharge patients, in a timely manner. Effective discharge practices can significantly improve patient access and flow, as well as patient outcomes.

Discharge planning is an important part of the discharge process and if done well help assist hospitals in discharging patients in a timely way and with their ongoing care needs addressed. The lack of detailed procedures and clearly stated roles and responsibilities at most hospitals reduces the effectiveness of the discharge process, particularly given the range of people involved in discharge and the need for a coordinated approach. Hospital managers need to make all staff are aware of their particular roles and responsibilities in the discharge process so that discharge delays do not occur due to non-participation. Developing comprehensive policies and procedures that reflect better discharge practice and the hospitals expectations is an important first step.

Early discharge planning at each of the hospitals was notable, enabling staff to prepare patients for timely discharge once their treatment was complete. Ward rounds and discharge meetings provided hospital staff with regular opportunities to identify patients who were ready for discharge. Ward rounds need to occur as early as possible to maximise the time available to arrange a patient's discharge, and meet the hospitals' discharge goal of 10–00 a.m. This would reduce the likelihood that patients spend additional and unnecessary time in an acute inpatient bed.

While the issue of junior doctors' reluctance to discharge patients without first consulting with senior medical staff is common in most hospitals, it was exacerbated at the two hospitals that were reliant on VMOs. While the limited availability of VMOs may be unavoidable, this should not be allowed to create a bottleneck that delays discharge. Hospitals need to establish processes to overcome these bottlenecks, such as criteria-led discharges, where senior medical officers identify key conditions that patients must meet before the hospital can discharge them. Criteria-led discharges are increasingly being used and should be pursued at hospitals where senior medical officers are not always available.

Discharge performance was generally consistent across the hospitals reviewed and also with the statewide average. However, in line with better practice and the hospitals' own discharge policies, hospitals should direct more effort to increasing the percentage of patients being discharged early in the morning. Hospitals also need to improve the rate of weekend discharge.

The current lower rate of weekend discharges has been an issue for most of this decade with only limited improvements made. Hospitals should focus their weekend effort on 'simple' discharges. The low complexity of these patients' discharge warrants greater use of criteria-led discharges. Increasing weekend discharges may require additional staff and this may represent additional costs to the hospital. Hospitals need to properly assess the costs of increased weekend staffing against the benefits of better patient access and flow.

Recommendations

Public hospitals should:

- 6.1 develop comprehensive discharge policies and procedures that clearly identify staff roles and responsibilities, particularly those responsible for the coordination of discharges
- 6.2 promote the use of criteria-led discharges to reduce discharge bottlenecks caused by senior medical staff being unavailable, and reduce duplicated effort across individual hospitals
- 6.3 increase the rate of weekend discharge for those patients able to return to their homes without the need for community support.

The Department of Human Services should:

- 6.4 facilitate the development of discharge criteria to enable a consistent approach and reduce duplicated effort.
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Auditor-General's reports

Reports tabled during 2008–09

Report title	Date tabled
Managing Complaints Against Ticket Inspectors (2008-09:1)	July 2008
Records Management Checklist: A Tool to Improve Records Management (2008-09:2)	July 2008
Investing Smarter in Public Sector ICT: Turning Principles into Practice (2008-09:3)	July 2008
Private Practice Arrangements in Health Services (2008-09:4)	October 2008
Working with Children Check (2008-09:5)	October 2008
CASES21 (2008-09:6)	October 2008
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