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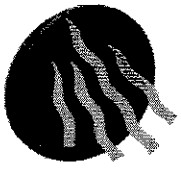
Queensland hospitals in the twenty-first century

leading the way

2003



Queensland Government

Queensland Health

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Acknowledgment

The process of measurement reported on in this document has been based on a significant body of work undertaken by the Ontario Hospital Association, in partnership with the University of Toronto, and the Department of Health Administration in Ontario, Canada. This work developed a system-wide review of the performance of hospitals in Ontario through a 'balanced scorecard' approach.

Queensland Health acknowledges the invaluable assistance this work has provided in developing a similar balanced scorecard measurement approach for Queensland public hospitals.

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Request for feedback

To help Queensland Health continue to develop the type of report that is valued by and of use to the public, we would appreciate any feedback and comments on this document.

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We also invite you to visit our website at: http://www.health.qld.gov.au
The technical papers supporting this report are also available on the website.

Foreword

Over the last decade there has been increasing interest in, and focus on the quality of health care in Australia. This interest arose out of studies that showed very real concerns about the safety and quality of health care services nationally and internationally. The increasing size and complexity of the health care system, the tyranny of distance and our diverse population bring a range of challenges. In response to these challenges and concerns, Queensland Health is undertaking a large program of activities under the Quality Improvement and Enhancement Program (QIEP) that concentrates on particular areas of safety and quality of health care in Queensland. This program is being undertaken in the context of a 20 year development framework for public sector health services in Queensland –*Smart State: Health 2020.*

Queensland's health care system ranks amongst the best in the world. It requires a range and mix of services and a balanced approach to their delivery. This document highlights the need to look at how we provide and plan for those services system-wide.

Queensland Health is committed to a process of continuously monitoring and improving its performance. An essential part of improving services is to develop a way of measuring quality and safety and applying this method across the system.

As no one indicator can adequately represent overall quality of health care services, Queensland Health has recently developed a measurement method which encompasses assessing performance across a number of areas essential to the overall quality and safety of care. In the first phase of this program a set of measures has been developed for hospital inpatient services. The method allows comparisons to be made between hospitals and over time to provide relevant and meaningful information about services. The next steps include local analysis and improvements where necessary, monitoring and feedback, and a sharing of 'lessons learnt' with others. The two phases of the program provide an ongoing process to improve the quality and safety of the State's public hospital system and engage clinicians and managers in the improvement process.

This document is a summary of Phase One and has been prepared for both the Queensland community and our valued health service providers. Improvements made locally contribute to an integrated system-wide approach to continuous quality improvement.

Taking this system-wide approach to quality improvement, it identifies key target areas for improvement and provides examples of Queensland Health programs working to get results in these key areas.

I encourage you to read this report and use the information to participate in the ongoing public debate over the quality of health services and the decisions required to improve them.

(Dr) R L Stable
Director-General
June 2003

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Executive summary

This report provides the community with a snapshot of the performance of its public hospitals statewide and the activities Queensland Health is undertaking to address any issues identified. It is the first time any Australian state has released a public report, which measures the quality of its hospital services across a range of indicators and sets target areas for continuous quality improvement.

Queensland's health system ranks amongst the world's best and provides universal access to hospital services. On the whole, this report indicates that Queensland's health system is effective and efficient. However, it flags some changes required to meet the demands and challenges of the future.

Queensland Health provides its hospital services through a networked statewide system. Information about the performance of individual hospital services is presented within the overall context of the State's public hospital system. This is because, while specific measurements are applied to improve the quality of public hospital services these indicators should be considered within a system-wide setting.

The Queensland Health network consists of **38 Health Service Districts**, which include about 200 hospitals and outpatient facilities, 70 community health centres and 21 state government residential facilities.

The range of services provided includes hospital inpatient, outpatient, emergency, community, mental health, aged care, public health, and health promotion programs.

This network responds to the demands of Queensland's vast geographical area to provide a fair and equitable balance of services close to where patients live and networked with highly specialised services. Networking mechanisms include appropriate triage, inter-hospital transfers based on patterns of referral as well as effective service and workforce planning.

While the Queensland Health network enables patients to be treated by the most appropriate and closest service, a system-wide perspective recognises that it is neither possible nor appropriate to provide every service at every facility.

Rather the system aims to ensure that whenever a patient presents at any facility within the network they are assessed at that facility and treated and/or referred and transferred to more specialised levels of service depending on the complexity of their treatment needs.

The first step to systematically making improvements to this statewide hospital system is to provide relevant and meaningful information about its services. The next step includes local analysis and improvements where necessary, monitoring and feedback, and a sharing of 'lessons learnt' with others.

Some of the system-wide changes identified in this report include the need to improve preventative measures to avoid unnecessary hospitalisations, implement new and innovative service-delivery models to meet the needs of rural and remote populations, and achieve a balance between the provision of primary health care services and hospital-based care.

The Queensland Government is pursuing these changes through the strategic directions established under Smart State: Heath 2020, and through negotiations with the Commonwealth to secure funding under the Australian Health Care Agreement (ACHA).

The focus of this report, representing step one of the measurement process is on **hospital inpatient services,** which is the largest single component of Queensland Health activity.

The sixty hospitals included in this report represent 94 percent of public hospital activity and 86 percent of the available inpatient beds.

As these hospitals offer a wide range of services, they have been classified into four different 'peer groups'. Each peer group includes hospitals that are of similar size, provide similar types and volumes of services and are in similar areas. The groups are:

- principal referral and specialised hospitals
- large hospitals
- medium hospitals
- small hospitals.

The principal referral and specialised and large hospital peer groups performed 89 percent of the activity of the hospitals in the study.

Four different aspects or quadrants of health care delivery have been measured and reported. Where possible, the data has been analysed (risk adjusted) to account for potentially confounding factors such as different levels of patient risk.

Summary of findings for each quadrant

Overall, Queensland public hospital indicator rates were as good as or better than the rates for public hospitals throughout the rest of Australia where comparisons were possible. Where there are variations to this trend, the findings identify key directions for systematic statewide improvements. These include where services are located geographically, how they are networked and the development of referral and treatment guidelines.

Clinical utilisation and outcomes

The indicator results in this quadrant are presented to show comparisons between the peer group means and the mean for the study cohort as a whole (shown as "State" in the graphs).

A number of factors can impact on patient outcomes, including timeliness of presentation to hospital, severity of condition, diagnosis, treatment, procedures performed, and age, sex and other health problems or co-morbidities (pre or co-existing conditions).

The term 'in-hospital mortality' refers to the number of patients who died in hospital following an admission for a relevant condition or procedure. In-hospital mortality rates can be affected by all or many of the factors listed above.

Findings

Generally, Queensland public hospital clinical indicator rates were as good as or better than the rates for public hospitals throughout the rest of Australia.

Areas for improvement are in the rates of in-hospital mortality for stroke, hysterectomy for women under 35 years of age and caesarean section rates. Investigation of these issues will occur in work with health service providers at the district and zonal level.

There was significant variation between the hospital peer groups for about half of the indicators examined. After the data was risk-adjusted, significant variations existed between the principal referral and specialised hospital and the medium and smaller hospital peer groups in the areas of stroke, heart attack, heart failure, maternity services, hysterectomy, asthma, pneumonia, colorectal cancer and diabetic foot.

In particular, in-hospital mortality rates for heart attack, heart failure and stroke were all lower in the principal referral and specialised hospitals.

Additionally, long stay rates for maternity services and patients undergoing hysterectomy were generally higher for smaller hospitals, while long stay rates for asthma, and to a lesser extent for pneumonia, were lower in medium and small hospitals.

Finally, complication rates for colorectal cancer surgery were lower for the large hospital group, while amputation rates due to diabetic foot were lower in medium and smaller hospitals.

There are a number of factors which may contribute to these results. One factor may be that more complex conditions are most effectively referred and treated in Queensland's large tertiary and highly specialised hospitals. However, caution should be used when interpreting the results. Indicator results are based on data for one year only. Data were not available for trend analysis for this first report.

Indicators also showed statistically significant differences in outcomes for patients who were admitted to public hospitals as either public or private patients. Variations occurred in the areas of hysterectomy, hip and knee surgery, heart failure, caesarean section and perineal tears.

While private patients had a higher long stay rate for heart failure, the long stay rates for hysterectomy, and hip and knee replacement surgery were all lower.

In addition, complications of surgery rates were lower for private patients for hip and knee replacements and hysterectomy.

The hysterectomy rate for women aged under 35 years was lower for those admitted as private patients while rates for caesarean section, induction and severe perineal tears were all higher for women admitted as private patients.

These issues will be investigated through working with the Commonwealth to leverage a greater return on the Government's investment in private health insurance and investigating opportunities for clinical quality improvement.

Patient satisfaction

The results showed most patients (89 percent) were satisfied with their hospital stay, with 59 percent being very satisfied.

Four measures that received the highest commendation from patients were cleanliness of rooms, attitudes of staff spoken to before admission, courtesy of nurses and helpfulness of staff.

Areas requiring improvement included discharge planning processes, access and admission processes, the provision of clear treatment related information and management of patient complaints.

Efficiency

These results compare peer group medians to the median for the 60 hospitals included in this study and where comparisons are possible, indicator rates for Queensland public hospitals are as good as or better than those nationally.

Occupancy rates were higher in the principal referral and specialised hospital and large hospital groups, as were energy costs and cost per weighted separation. This suggests a more complex patient cohort overall in these hospital groups.

Catering costs were lower in the principal referral and specialised hospital group. This may also suggest efficiencies derived from economies of scale in larger hospitals.

Variation between peer groups for efficiency indicators is predictable and partly due to different levels of severity of illness and therefore, resource requirements of patient conditions.

System integration and change

These results compare peer group medians to the median for the 60 hospitals included in this study. There was variation in the availability, collection and use of

electronic information to support clinical activities.

In addition, as would be anticipated, the development and use of clinical pathways is more extensive in the principal referral and specialised and large hospital groups. The smaller hospitals have less opportunity to develop clinical pathways because of the smaller numbers of patients.

Similarly, the extent of external benchmarking decreased with the decreasing size of hospitals partly because there are more opportunities to identify with similar benchmarking programs in larger hospitals.

As with efficiency indicators, variations in indicator results can be partially attributed to the differences in function and processes between small and larger hospitals. However, a number of programs are underway to improve processes and integration of care such as improved use of telehealth, discharge planning processes, use of electronic information and the use of clinical pathways across services.

Introduction

Queensland Health is a large and complex organisation that delivers a broad range of hospital and community-based health services from many different locations across the State. Measuring the quality of these services is a huge and complicated task.

The Queensland Government's commitment to continuous quality improvement will ensure the ongoing identification of areas where we can do better. This document is a testament to the Government's commitment to improve services. In fact, Queensland is 'leading the way' as the first health service in Australia to report to the public on the quality of services provided statewide.

The purpose of this report

This report will provide a snapshot for the community, health service managers and government on the performance of its public hospitals and the activities Queensland Health is undertaking to address any issues identified.

It aims to improve the accountability of health services by:

measuring the quality of services and reporting this to the public;

informing the community on aspects of health care thereby assisting and encouraging public debate and community participation in decisions regarding improvements in health care;

improving Queensland Health's responsiveness to community needs and expectations by encouraging participation and feedback; and

establishing an ongoing process that reports on performance and supports continuous improvement.

The Smart State: Health 2020 Directions Statement supports enhancements to accountability. Some of these strategic directions include:

- developing and refining systems to measure changes in population health status and wellbeing as well as health system performance
- improving the safety and quality of health care
- engaging the community on local health issues
- engaging the community on the 'big' issues
- improving integration of the health system
- a focus on quality, safety and continuous improvement in the health care system.

Safety is an important component of measuring the quality of services because all governments and health services aim to minimise the occurrence of adverse clinical events. However, as suggested in a recent statement by the Australian Safety and Quality Council Chair, Professor Bruce Barraclough:

> *"Health care is extremely complex and will always carry a degree of risk. Unexpected things can happen even when care is being provided at world's best standards.*
>
> *To make health care safer, it is essential we look at all systems in place to support its delivery and to implement better systems, as well as to have a strong focus on managing risks that are identified."*

Scope

This report represents the first stage of a process of measurement. During this stage the focus is on the largest single component of Queensland Health services – **hospital inpatient services**. Queensland Health expects to extend this focus over the next three years to cover most of its services, such as outpatient, emergency and community services.

Although no single measure or indicator can represent the overall quality of health care services, Queensland Health believes there needs to be a systematic, comprehensive performance assessment of Queensland's public health care system.

To address this, Queensland Health has developed a 'balanced scorecard' approach to measurement, which is currently being used in a number of other countries. The scorecard identifies indicators across four different perspectives or quadrants. It helps service providers and the public to assess the performance of the Queensland Health system and plan improvements.

The four quadrants are:

1. Clinical utilisation and outcomes
This measures the clinical performance of hospitals for a number of diseases, conditions and surgical procedures.

2. Patient satisfaction
This measures patients' perceptions of, and satisfaction with, their hospital experience.

3. Efficiency
This measures how hospitals manage their resources.

4. System integration and change
This measures a hospital's ability to adapt to its changing health care environment.

The quadrants are described in detail in the next chapter, 'The measurement method'.

The process of measuring performance has identified the need to improve the measurement capacity itself. Some measures for possible inclusion are currently available while others require a considerable amount of developmental work.

This report outlines how Queensland Health has approached the method of measurement together with the results of this measurement. It compares the results across the groups of hospitals as well as with national performance data, where available.

Choice of Data Indicators

The indicators examined have been chosen primarily because most have been identified as key performance indicators in national and international literature. The clinical indicators also represent areas of significance in terms of burden of disease and relevance to Queensland Health.

In addition, most indicators have had some testing of reliability and validity and are applicable to many or all of the in-scope hospitals.

A large proportion of the data for the indicators is available from existing databases and this reduces the burden of data collection at a hospital level. Many of the indicators are capable of being collected in other Australian states.

Queensland public hospital services

The Australian health care system is a mixture of services provided by both the public and private sectors. The Commonwealth Government of Australia funds the Queensland Government to provide public hospital services under the 'Australian Health Care Agreement' (AHCA).

The population of Queensland was 3,655,139 in 2001 and is growing faster than any other State in Australia at 8.5 percent[1].

To serve this increasing population, Queensland Health delivers its services through **38 Health Service Districts**.

Within these Districts there are approximately 200 hospitals and outpatient facilities, 70 community health centres and 21 state government residential facilities.

The range of services provided include:

- hospital inpatient services
- outpatient services
- emergency services
- community services
- mental health services
- aged care services
- and public health and health promotion programs

Queensland public hospitals network

Queensland Health hospitals offer an increasingly complex range of services as described below:

- the smallest, often remote facilities provide outpatient services with the ability to assess and transfer patients to a more complex level of care. They may provide basic inpatient services for patients who are not seriously ill.
- the next group of hospitals provides the services already described plus some specialist services.
- the next larger group of hospitals is capable of undertaking complex services on high-risk patients as well as basic patient services with some specialist care.
- the larger hospitals offer basic services for their local catchment areas and more specialised services for complex cases across a range of specialties for their region.
- a limited number of hospitals provides services on a state-wide or zonal basis. These services are required for a relatively small number of patients, using specialised facilities and equipment and involve a high level of clinical complexity such as surgery for coronary artery bypass.

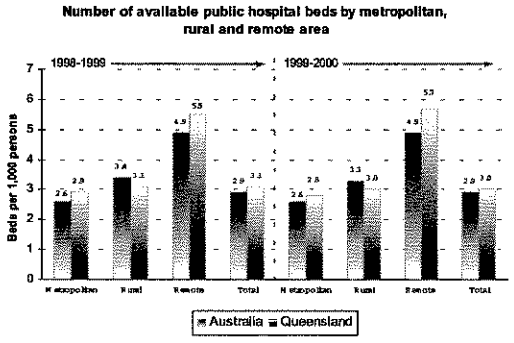
These hospitals are distributed across Queensland. The large, highly specialised hospitals are located in more densely populated metropolitan areas.

The figure over the page shows the distribution of public hospital beds across metropolitan, rural and remote areas and compares this with the national distribution.

There is not an exact geographic fit between population distribution and the distribution of hospital services. Hospitals based in central locations may also serve patients who live in rural and remote areas.

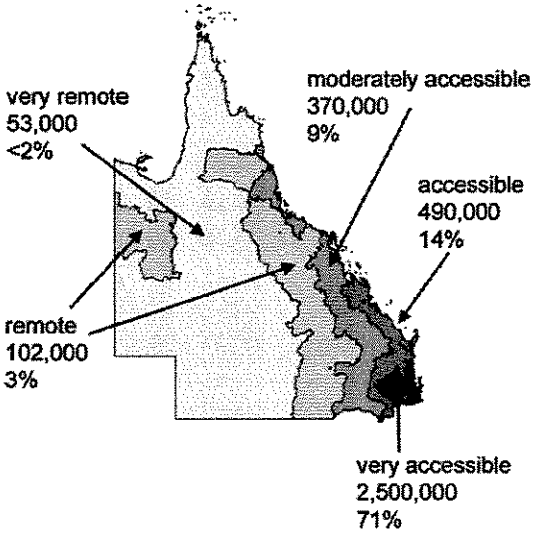
The higher rate of beds outside metropolitan areas also balances other health service differences such as the shortages of medical practitioners in rural and remote areas[2]. Many of the rural and remote hospitals have a high proportion of

nursing home type patients who, in metropolitan areas, are cared for in nursing homes or hostels.



Source: (Steering Committee for the Review of Commonwealth/State Service Provision) 2001, Report on Government Services 2001, AusInfo, Canberra

Because of Queensland's large geographical area, equitable and fair service provision requires a balance between providing services close to where patients live, and the provision of highly specialised services. Not every service can be provided at every facility. Services are therefore provided through the network of hospitals described above, where patients are referred and transferred to more specialised levels of service as required. These arrangements vary from specialty to specialty but enable patients to be treated by the most appropriate and closest service required.



The map shows the population of Queensland in the year of 1999 rated according to access to services using information from the accessibility/ remoteness index of Australia (ARIA)[3].

Hospital services vary depending on the local and regional population, distance from the southeast corner and the ability to attract and retain staff. Other factors include the availability of support services such as pharmacy, intensive care and radiology as well as the specialty skills of the medical and nursing staff.

Access to services

Patient travel subsidy scheme: This scheme provides direct assistance to patients and in some cases their carers (escorts) to enable patients to access specialist medical services from which they are isolated. The scheme subsidises travel and accommodation costs to eligible patients and their carers.

Patient retrieval system: Queensland Health is responsible for the emergency retrieval and transfer of sick patients from rural and remote areas of Queensland to centres equipped to manage their condition. Most patients are brought to Brisbane or Townsville using medical teams drawn from the major hospitals in those cities. A small but significant number of patients are also transferred to Toowoomba, Rockhampton and Cairns. Other coastal towns such as Bundaberg and Mackay receive patients when appropriate.

Using small aeroplanes, helicopters and road transport, the retrieval service operates statewide seven days a week. It works in collaboration with the Royal Flying Doctor Service, Queensland Ambulance Service, Queensland Emergency Services and with various community helicopter operators. Patients of all categories and all ages are transported.

The service is also supported by the Queensland Health flying surgeon, flying paediatrician and flying obstetrician/gynaecologist. These staff are based in rural centres across Queensland.

Rebuilding hospitals

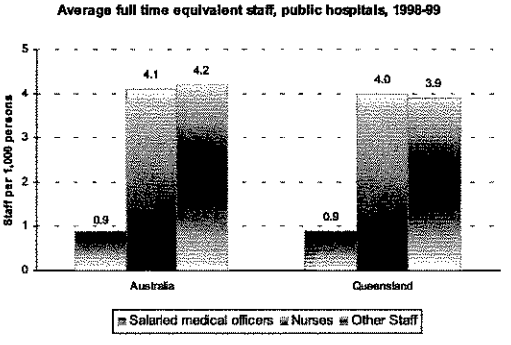
A decade-long task of the rebuilding and re-equipping of these public hospitals as well as community, primary, and multi-purpose health services is nearing completion.

This statewide building program for Queensland Health is the largest public health rebuilding program ever undertaken in Australia.

Planning activities were undertaken for each of the major hospitals in Queensland and the program has managed over 50 large projects and an additional 100 smaller projects. The capital works program also provides for infrastructure development and maintenance for mental health, aged care residential and rural services, information technology and equipment replacement.

Workforce

The workforce of Queensland Health is its major asset and resource for delivery of services. Approximately 60,000 staff in both clinical and support roles are involved in delivering these services.



Source: (Steering Committee for the Review of Commonwealth/State Service Provision) 2001, Report on Government Services 2001, AusInfo, Canberra

These 60,000 staff comprise in excess of 40,000 full time equivalent positions within Queensland Health. The figure shows a breakdown of staffing into medical, nursing and other staff. Other staff includes allied health staff, administrative and operational staff.

The measurement method

This report aims to provide the public of Queensland with a set of indicators which, though not directly measuring the quality of health care, draws attention to issues possibly related to quality and provides comparisons between hospitals. The focus is on providing clinicians and the public with the necessary information to improve services where required.

The scope of the measurement study

Sixty hospitals are included in this study. These hospitals represent **94 percent of the public hospital activity and 86 percent of the available beds** (hospitals with a budget of less than two million dollars per year in 1999 have been excluded from the study).

These 60 hospitals also cover most serious emergency cases and provide extensive day and outpatient facilities.

Some of the hospitals have specialised units attached to them such as sub-acute and non-acute patient units, palliative care, geriatric evaluation and maintenance, psychogeriatric and rehabilitation units. This report examines inpatient data only for these hospitals.

Indicator

An indicator is a measurement tool, screen or flag that is used as a guide to monitor, evaluate and improve the quality of client care, clinical services, support services and organisational functions that affect client outcomes. (Canadian Council on Health Services Accreditation 1996).

How hospitals are measured and compared

The report is based on objective, quantitative data that are consistent across the major Queensland public hospitals. The method of reporting relies on statistical rather than anecdotal evidence of the quality of care provided by public hospitals. Each quadrant contains a set of indicators developed through a two-step process of:

- identifying those indicators already in use within Queensland Health and elsewhere and
- expert review of these existing indicators for their relevance and feasibility.

...Indicators should actually measure what they are intended to (validity); they should provide the same answer if measured by different people in similar circumstances (reliability); they should be able to measure change (sensitivity); and, they should reflect changes only in the situation concerned. In reality, these criteria are difficult to achieve, and indicators, at best, are indirect or partial measures of a complex situation[4].

The hospital balanced scorecard

The hospital balanced scorecard is used as a framework for reporting this set of indicators. The scorecard links the indicators across four quadrants representing different aspects of health care measurement.

1. **Clinical utilisation and outcomes**
2. **Patient satisfaction**
3. **Efficiency**
4. **System integration and change**

Clinical utilisation and outcomes	Patient satisfaction
describes the clinical performance of hospitals and refers to such things as clinical efficiency and quality of care.	examines patients' perceptions of their hospital experience including their perceptions of overall quality of care and the outcomes of their care.
Efficiency	**System integration and change**
describes how hospitals use their resources. It refers to the cost of a hospital's services and its resource management.	describes a hospital's ability to adapt to the changing health care environment. It examines how clinical information technologies, work processes and hospital-community relationships function within the hospital system.

This balanced scorecard is similar to work undertaken in Ontario, Canada aimed at developing a comprehensive set of hospital performance results. The Ontario Hospital Association first tested their framework in the production of a 1998 scorecard report. This report has been refined and broadened with work continuing on expanding the Ontario scorecard beyond inpatient activity in the 2001 report[5].

In Australia, a national health performance framework has been adapted from the Canadian Institute for Health Information framework. It is designed to provide a structure for appraising how well the health system is performing. The framework is expected to support benchmarking for health system improvement and to provide information on national health system performance[6].
It consists of three tiers: health status and outcomes, determinants of health and health system performance. Health system performance has been grouped into nine dimensions described as:

- effective
- appropriate
- efficient
- responsive
- accessible
- safe
- continuous
- capable
- sustainable.

Each of the indicators developed for the balanced scorecard provides information across one or more of these dimensions.

Data adjustment

Where possible, the data have been analysed to account for potentially confounding factors such as different levels of patient risk in the population (risk-adjustment). The goal of these adjustments has been to provide the most meaningful benchmarking data possible. However, some variations remain across the State in patient risk factors, in care before admission and in documentation and coding practices. These cannot be accounted for at this time.

Caution should therefore be used when interpreting the results. Indicator results are based on data for one year only. Data were not available for trend analysis as this is a first report.

Peer groups

In the benchmarking process, the way in which hospitals are grouped is important so as to ensure we are comparing 'apples with apples'. A number of factors affect the outcomes of services provided by hospitals. There is a link between the number of procedures conducted by clinicians, their skill in performing these procedures and resulting outcomes for patients. Similarly, the size of a hospital and its location will affect the types of services that are provided by that hospital, the range of clinicians required and the degree of their specialisation.

By grouping hospitals that are of similar size, provide similar types and volumes of services and are in similar areas, the influence of these factors on patient outcomes is reduced. This allows for the services provided across the hospitals in a group to be compared in terms of quality and outcomes in the fairest possible manner.

Peer groupings for hospitals are provided in the following table and are represented on the following maps.

Principal referral and specialised hospitals represent 56 percent of the total public hospital activity and 49 percent of the available beds. They include:

Royal Brisbane Hospital/Royal Women's Hospital	Princess Alexandra Hospital
Royal Children's Hospital	Nambour Hospital
Mater Public Children's Hospital	Gold Coast Hospital
Mater Public Mothers' Hospital	Cairns Base Hospital
Mater Public Adult Hospital	Toowoomba Hospital
The Prince Charles Hospital	The Townsville Hospital

Large hospitals represent 28 percent of the total public hospital activity and 22 percent of the available beds. They include:

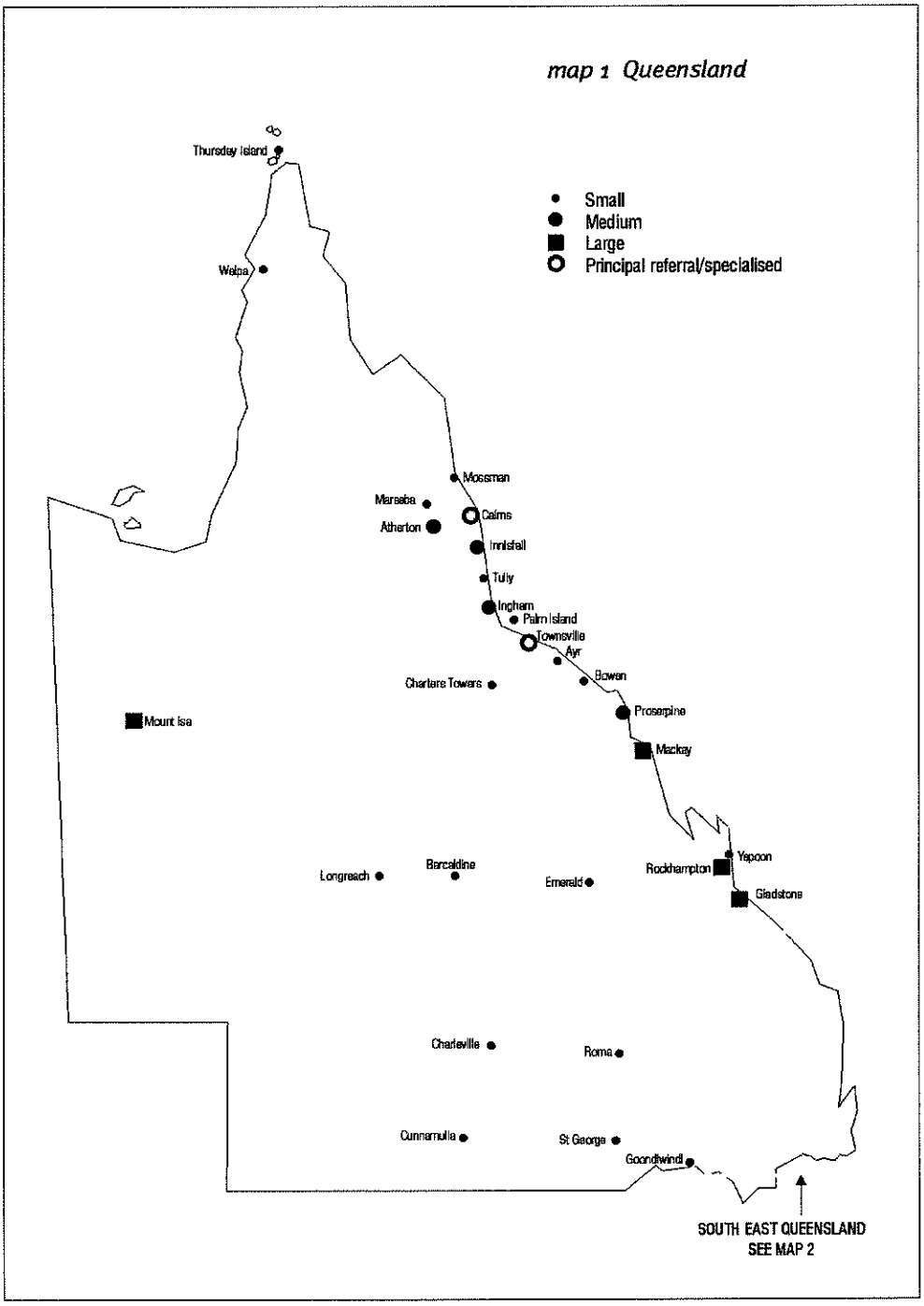
Bundaberg Hospital	Mackay Base Hospital
Caboolture Hospital	Mt Isa Hospital
Gladstone Hospital	Logan Hospital
Hervey Bay Hospital	Queen Elizabeth II Jubilee Hospital
Maryborough Hospital	Redland Hospital
Rockhampton Hospital	Ipswich Hospital
Redcliffe Hospital	

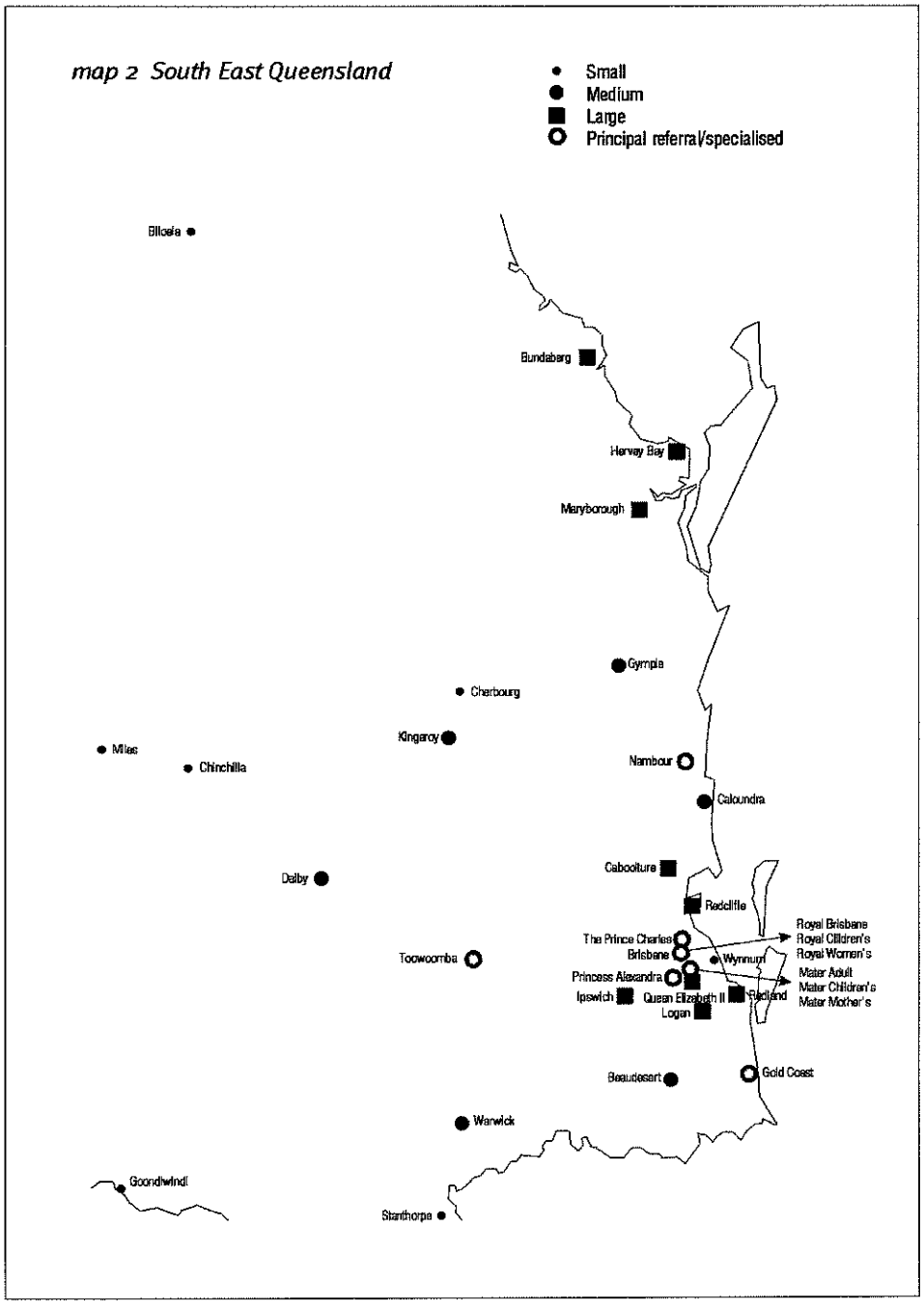
Medium hospitals represent 5 percent of the total public hospital activity and 6 percent of the available beds. They include:

Caloundra Hospital	Innisfail Hospital
Gympie Hospital	Proserpine Hospital
Kingaroy Hospital	Beaudesert Hospital
Atherton Hospital	Dalby Hospital
Ingham Hospital	Warwick Hospital

Small hospitals represent 5 percent of the total public hospital activity and 9 percent of the available beds. They include:

Ayr Hospital	Longreach Hospital
Barcaldine Hospital	Mareeba District Hospital
Biloela Hospital	Miles Hospital
Bowen Hospital	Mossman Hospital
Charleville Hospital	Roma Hospital
Charters Towers Hospital	St George Hospital
Cherbourg Hospital	Stanthorpe Hospital
Chinchilla Hospital	Thursday Island Hospital
Cunnamulla Hospital	Tully Hospital
Emerald Hospital	Weipa Hospital
Goondiwindi Hospital	Wynnum Hospital
Joyce Palmer Health Service (Palm Island)	Yeppoon Hospital
Island Medical Service	


map 1 Queensland
Small
Medium
Large
Principal referral/specialised
Thursday Island
Weipa
Mossman
Mareeba
Cairns
Atherton
Innisfail
Tully
Ingham
Palm Island
Townsville
Ayr
Bowen
Charters Towers
Proserpine
Mount Isa
Mackay
Yeppoon
Rockhampton
Gladstone
Barcaldine
Longreach
Emerald
Charleville
Roma
Cunnamulla
St George
Goondiwindi
SOUTH EAST QUEENSLAND
SEE MAP 2


map 2 South East Queensland
Small
Medium
Large
Principal referral/specialised
Biloela
Bundaberg
Hervey Bay
Maryborough
Gympie
Cherbourg
Kingaroy
Miles
Chinchilla
Nambour
Caloundra
Caboolture
Dalby
Redcliffe
Royal Brisbane
Royal Children's
Royal Women's
The Prince Charles
Brisbane
Wynnum
Toowoomba
Princess Alexandra
Mater Adult
Mater Children's
Mater Mother's
Ipswich
Queen Elizabeth II
Redland
Logan
Beaudesert
Gold Coast
Warwick
Goondiwindi
Stanthorpe

Clinical utilisation and outcomes

Indicators that represent the quality of health care have been developed within a number of clinical areas. These are representative of a large part of hospital activity and include:

1. **Cardiovascular disease**
   - acute myocardial infarction (heart attack)
   - heart failure
   - stroke
2. **Women's health**
   - hysterectomy
   - maternity (vaginal and caesarean deliveries)
3. **Orthopaedic surgery**
   - knee replacement
   - hip replacement
   - fractured neck of femur
4. **Respiratory conditions**
   - pneumonia
   - asthma
5. **General surgery**
   - colorectal carcinoma
   - diabetic foot

Clinical indicators in these areas were chosen in discussions with Queensland Health clinicians. Common indicators used across most conditions are described below.

In-hospital mortality rate: This measures the number of patients who died in hospital following an admission for a relevant condition or procedure. Patient outcomes can be affected by many factors which include diagnosis, treatment, procedures performed, as well as age, sex and other health problems or co-morbidities.

Long stay rate: This is defined as the number of records where the patient's stay in hospital equalled or exceeded the long stay point, divided by the total number of records in the cohort (note that cases of in-hospital mortality are excluded from all calculations involving long stays). For the purposes of this project, the long stay point was chosen as the day closest to the 90th percentile of all eligible length of stays within the study cohort. For example, 90 percent of patients in the heart failure cohort stayed in hospital for less than 14 days. Therefore, the number of eligible patients with heart failure who remained in hospital for 14 days or longer divided by the total number of patients admitted for heart failure is the long stay rate for heart failure.

Complication rate: This indicator identifies the proportion of patients who exhibited a range of complications resulting from treatment in hospital. The development of complications while in hospital can be related to the health status of the patient upon admission and/or the quality of the care provided by the hospital.

The development and refinement of these indicators will continue over the next few years when it will be possible to identify trends in outcomes. Comparisons can then be made across hospital groups to assist the process of improving care as hospitals benefit from the experiences of one another.

Some factors to be aware of in the interpretation of the results include:

- findings are based on a **single** year of data, 1999-2000. These findings may therefore be found to be inconclusive due to variations over time. Analysis over a number of years will improve confidence in interpreting the results.

- it is not certain to what extent the risk-adjustment corrects for differences in the patient populations.
- in general, more complex cases are treated in the principal referral and specialised group of hospitals.
- some variation may occur as a result of data collection practices in hospitals as opposed to actual clinical differences.
- data for all indicators excludes same day patients.

Summary of indicator results

The variations listed below have been identified in the context of a statewide public health system. The variations in patient outcomes identified between hospital groups and between private and public hospitals will be the focus of ongoing improvement activities with the clinical workforce at the facility, district, zonal and statewide level. This work aims to both identify contributing factors and reduce variation. This benchmarking and quality improvement process has occurred within the context of a Queensland wide health system which provides networked services of varying size and complexity. Therefore, quality improvement activities will occur within a systems context through initiatives such as the Integrating Services and Priorities Program, as well as the further development and use of clinical pathways, integrated risk management , the revision of infection control guidelines, telehealth, discharge planning workshops, facilitating continuity of care, service integration and other important initiatives detailed in pages 37,38, and 49 to 56.

Comparisons with national figures are based on data provided to Queensland Health by the Australian Institute of Health and Welfare (AIHW). Generally, Queensland public hospital indicator rates were as good as or better than the rates for public hospitals throughout the rest of Australia, with the exceptions of in-hospital mortality for stroke, hysterectomy for women under 35 years of age and caesarean section rate.

Findings

There was significant variation between the hospital peer groups for about half of the indicators that were examined, after the data had been risk-adjusted. Some of the key findings include:

- in-hospital mortality rates for heart attack, heart failure and stroke were all lower in the principal referral and specialised hospitals;
- long stay rates for maternity services and patients undergoing hysterectomy were generally higher for smaller hospitals;
- long stay rates for asthma, and to a lesser extent for pneumonia, were lower in medium and small hospitals; and,
- complication rates for colorectal cancer surgery were lower for the large peer group of hospitals, while amputation rates due to diabetic foot were lower in smaller hospitals.

Indicators that showed statistically significant differences in outcomes for patients who were admitted to public hospitals as public or private patients included:

- long stay rates for hysterectomy, and hip and knee replacement surgery, which were all lower for private patients, while private patients had a higher long stay rate for heart failure;
- complications of surgery rates were lower for private patients for hip and knee replacements and hysterectomy;
- the hysterectomy rate for women aged under 35 years was lower for those admitted as private patients; and,
- rates for caesarean section, induction and severe perineal tears were all higher for women admitted as private patients.

The indicator results are presented to show comparisons between the peer group means and the mean for the study cohort as a whole (shown as 'State' in the graphs). The figures show the ***observed*** results for each indicator. Risk-adjusted results are then documented in the text together with comparisons of outcomes for patients admitted as public or private. Comparisons with national data are also reported, where these data were available.

Cardiovascular disease

Cardiovascular disease (circulatory disease) comprises diseases of the heart and blood vessels. A leading cause is atherosclerosis that partially or totally blocks the arteries with fatty deposits. Atherosclerosis affects various parts of the circulation.

Coronary heart disease occurs when atherosclerosis is present in the coronary arteries that supply blood to the heart itself. This can present as **angina pectoris** (chest pain), **acute myocardial infarction** (heart attack) and/or **heart failure**.

Atherosclerosis of the arteries supplying blood to the brain can cause **strokes**.

Atherosclerosis of the peripheral blood vessels such as those supplying blood to the legs can lead to leg ulcers, gangrene and amputation. This condition is made worse when diabetes is present.

Cardiovascular disease continues to be the leading cause of death and disability in Australia even though there have been major advances in its prevention and treatment.

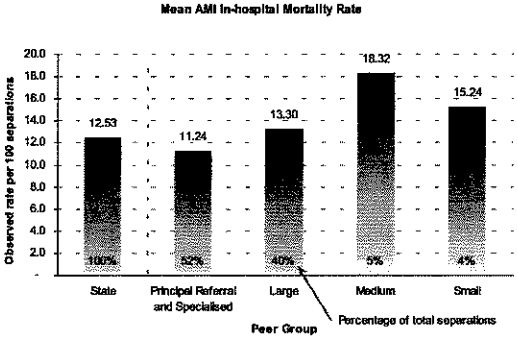
Acute myocardial infarction (AMI)

Acute myocardial infarction (AMI) or 'heart attack' is defined as the rapid onset of severe symptoms associated with necrosis or death of the myocardium (heart muscle), resulting from a lack of blood supply. The severity of the 'attack' depends largely on the size and location of the tissue damage.

♦ AMI - in-hospital mortality rate

This indicator measures the rate of patients who have died in hospital within 30 days of an admission for AMI.

Queensland's in-hospital mortality rate for AMI is approximately 15.7 percent better than the national average (Australia excluding Queensland).



Comments

The large (13.3 per 100 separations), medium (18.3 per 100 separations) and small (15.2 per 100 separations) hospital peer groups were all found to have higher observed mortality rates compared to principal referral and specialised hospitals (11.2 per 100 separations).

After risk-adjusting the data the findings were as follows:

- the differentials between the hospital peer groups were even greater than for the observed rates. For example, the likelihood of in-hospital mortality for medium hospitals was almost three times as high and for small hospitals more than two and a half times as high, compared to principal referral and specialised hospitals.
- whether a patient was admitted to the public hospital as a public or a private patient had no statistically significant impact on their outcome for in-hospital mortality.

Queensland Health's investment in specialist physician and cardiology services is being complemented by parallel investments in telehealth facilities. Use of these facilities will improve access to specialist services for those doctors and community members in regional, rural and remote areas.

For those patients who have had an AMI, thrombolysis or primary coronary

angioplasty may be indicated. Either of these processes decreases the damage to the heart by improving the blood supply to the affected area. In the absence of contraindications, it is recommended that this process of restoring blood flow be commenced as soon as possible as the 'time to lysis' or 'time to angioplasty' can predict the outcome of care. Thrombolysis treatment is available throughout Queensland. However, the outcome for this treatment is influenced by the time taken to reach medical help. Queensland's vast geographical distances will result in variations to the time taken to reach treatment. Angioplasty as a complex treatment modality is available in three principal referral and specialised hospitals within the statewide system and distance factors also influence 'time to angioplasty'.

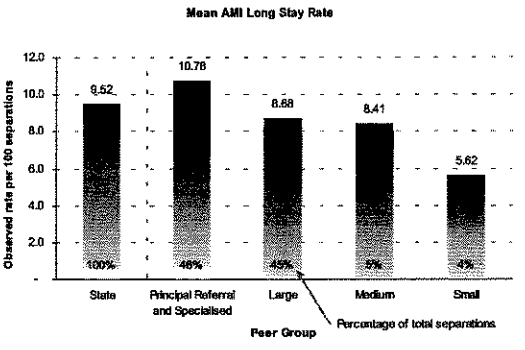
Improvement activities

Acute chest pain assessment

Following a review of services provided for patients with acute chest pain at The Prince Charles Hospital, an 'acute chest pain assessment service' has been established. It provides a structured approach to patient management. General practitioners now have a referral service to assist in the determination of a clear diagnosis and treatment plan for patients presenting with acute chest pain. This structured approach to triage and clinical assessment in the hospital setting has facilitated the rapid diagnosis and treatment of patients at high risk, and the early identification and discharge of low risk patients. Effective communication channels have been established to ensure a seamless transition for ongoing patient management by outpatient and community services. This model of care is transferable to other health care settings and the hospital has taken the lead in ensuring this service pathway becomes widely adopted.

♦ AMI - long stay rate

This indicator measures the rate of patients who remained in hospital for 12-30 days (long stay) following an admission for AMI.



Comments

Queensland's average length of stay for AMI was 2.8 percent better than the national average (Australia excluding Queensland).

The rate of long stays was highest for the peer group of principal referral and specialised hospitals (10.8 per 100 separations) and lowest for small hospitals (5.6 per 100 separations).

After risk-adjusting the data the findings were as follows:

- despite the apparent differences in the observed rates, the hospital peer groups showed no significant differences for the rate of long stays after risk-adjustment.
- whether a patient was admitted to a public hospital as a public or a private patient had no statistically significant impact on their chance of having a long stay.

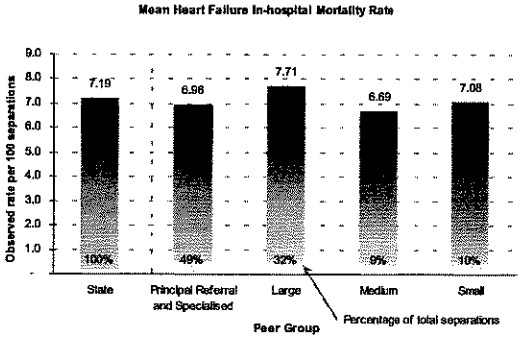
Heart failure

Heart failure is a chronic form of heart disease resulting from a damaged heart muscle. The heart is then unable to pump blood adequately to the rest of the body. It is mainly caused by the occurrence of AMI (heart attack), hypertension or damaged

heart valves and is the third largest cause of cardiovascular death in Australia. More women die from heart failure than men. However, rates for both have been steadily decreasing over the last 10 years. 90 percent of the deaths from heart failure occur in the 75 and over age group[7].

♦ Heart failure - in-hospital mortality rate

This indicator measures the rate of patients who have died in hospital within 30 days of an admission for heart failure.



Comments

Queensland's in-hospital mortality for heart failure was marginally better than the national average (Australia excluding Queensland).

The observed in-hospital mortality rates were quite similar for each of the hospital peer groups, ranging from 6.7 per 100 separations for medium hospitals to 7.7 per 100 separations for large hospitals.

After risk-adjusting the data, the findings were as follows:

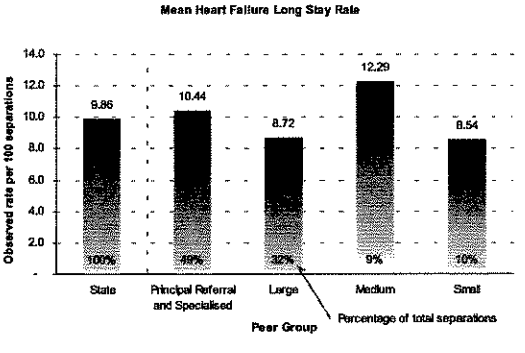
- the large and small hospital peer groups were both found to have a significantly higher likelihood of in-hospital mortality compared with principal referral and specialised hospitals (32 percent and 74 percent higher respectively).
- whether a patient was admitted to a public hospital as a public or private patient had no statistically significant impact on their outcome for mortality.

Chronic heart failure is associated with high morbidity rates and annual mortality rates of greater than 30% in patients with severe symptoms[8]. In these severe cases of heart failure, admission to an intensive care unit with continuous positive airways pressure ventilation or intubation may be necessary. This technology is available in the larger and more specialised facilities only, because of the specialists and infrastructure needed to run such services. The restricted access to investigatory services (such as cardiac ultrasound to assess heart function), specialist consultation and allied health professionals (such as clinical pharmacists) in more remote locales may be another factor accounting for comparatively higher mortality rates noted in smaller hospitals.

Queensland Health's investment in specialist physician and cardiology services is being complemented by parallel investments in telehealth facilities. Use of these facilities will improve access to specialist consultancy services for those doctors and community members in regional, rural and remote areas.

♦ Heart failure - long stay rate

This indicator measures the rate of patients who remained in hospital for 14-30 days (long stay) following an admission for heart failure.



Comments

Queensland's average length of stay for heart failure was 8.6 percent better than the national average (Australia excluding Queensland).

Small and large peer group hospitals had the lowest long stay rates (8.5 and 8.7 per 100 separations respectively), while medium hospitals had an observed long stay rate of 12.3 per 100 separations.

After risk-adjusting the data, the findings were as follows:

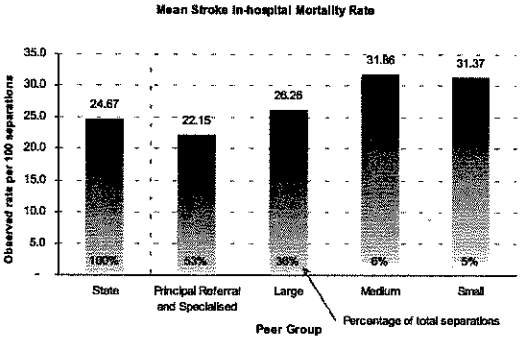
- no significant differences were found in the likelihood of long stays across any of the hospital peer groups.
- patients admitted as private patients to a public hospital were 43 percent more likely to have a long stay than patients who were admitted as public patients.

Stroke

A stroke can occur when blood supply to the brain is suddenly blocked or there is bleeding into the brain. Damage to the brain subsequently occurs and this may affect the ability to move various body parts and/or the ability to communicate.

♦ Stroke - in-hospital mortality rate

This indicator measures the rate of patients who have died in hospital after an admission for stroke.



Comments

Queensland's in-hospital mortality for stroke was higher than the national average (Australia excluding Queensland). However, Queensland patients admitted for stroke are less likely to be discharged to a nursing home as there are proportionally fewer Commonwealth-funded nursing homes places available for the Queensland population, than the rest of Australia. Queensland therefore has a higher rate of in-hospital mortality. The nursing home discharge rate plus the mortality rate is similar for Queensland and the rest of Australia.

The large (26.3 per 100 separations), medium (31.9 per 100 separations) and small (31.4 per 100 separations) hospital peer groups were all found to have higher observed mortality rates compared to principal referral and specialised hospitals (22.1 per 100 separations).

After risk-adjusting the data, the findings were as follows:

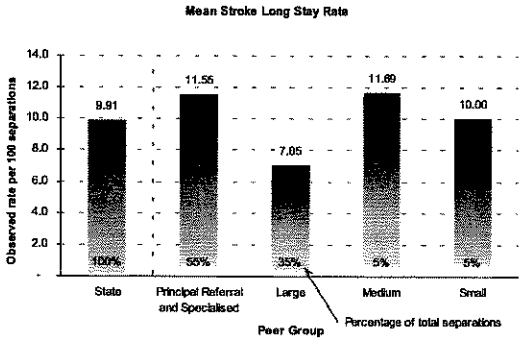
- the differentials in the likelihood of in-hospital mortality for each of the peer groups increased in comparison to principal referral and specialised hospitals. Separations at large hospitals were 32 percent more likely to result from death, while in-hospital mortality was 62 percent more likely for medium hospitals and 49 percent more likely for the small peer group hospitals.
- whether a patient was admitted to a public hospital as a public or private patient had no statistically significant impact on their outcome for in-hospital mortality.

Stroke is not a homogeneous condition. There are clear pathological sub-types with over 100 potential underlying causes. To assist in the diagnosis of type and therefore the appropriate treatment, there is clinical consensus that most patients with acute stroke should undergo Computerised Axial Tomography (CT) brain scanning as soon as possible (preferably within 48 hours). This facility is not available in smaller, rural and remote hospitals because of the specialists and infrastructure needed for this service. The absence of dedicated acute stroke units in many non-tertiary hospitals may further explain the comparatively higher rates of stroke death noted in these sites.

However, outreach programs based at the existing dedicated stroke units are being established to assist physicians in regional, rural and remote areas in the management of their patients (see improvement activities – this page).

♦ Stroke - long stay rate

This indicator measures the rate of patients who remained in hospital for 66 days or longer (long stay) following an admission for stroke.



Comments

Queensland's average length of stay for stroke was 10.5 percent better than the national average (Australia excluding Queensland).

The observed rates of long stays varied from 7.0 per 100 separations for the large hospitals peer group up to 11.6 per 100 separations for principal referral and specialised hospitals and 11.7 per 100 separations for medium hospitals.

After risk-adjusting the data, the findings were as follows:

- separations from large hospitals were found to be 40 percent less likely to result in a long stay than were separations from principal referral and specialised hospitals. However, there was no significant difference for medium or small hospitals in comparison to principal referral and specialised hospitals.
- whether a patient was admitted to a public hospital as a public or private patient had no statistically significant impact on the probability of a long stay occurring for stroke.

Improvement activities

Stroke unit

The Royal Brisbane Hospital's (RBH) stroke unit commenced services in February 2001 with a dedicated and experienced team of doctors, nurses and allied health professionals. The aim is to provide the highest standard of care to stroke patients and to be a focus for stroke-related research and educational activities. In collaboration with the University of Queensland's centre for magnetic resonance and using a new research Magnetic Resonance Imaging (MRI) scanner, studies of acute stroke pathophysiology using advanced MRI techniques are underway.

The unit assists physicians in regional, rural and remote centres to manage their patients through an outreach programme. This will be extended over the next 12 months to establish a network of regional hospitals linked to the RBH stroke unit and will use telehealth technology to allow patients outside Brisbane access to the stroke unit's expertise.

Women's health

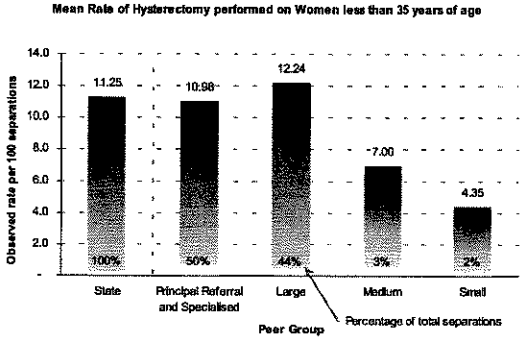
Hysterectomy

Hysterectomy is one of the most common surgical procedures performed on women apart from those related to pregnancy, such as caesarean section. It involves the removal of the uterus through an incision in the abdomen, or through the vagina.

It is one form of treatment for common gynaecological conditions such as fibroids and uterine prolapse. It can be associated with a number of complications such as excessive bleeding, infection or injury to other organs and it is recommended that it only be performed once conservative treatments have failed.

♦ Hysterectomy - under 35 years of age rate

This indicator measures the rate of patients aged less than 35 years being admitted for a hysterectomy procedure.



Comments

Queensland's rate of hysterectomy performed on women less than 35 years was 6.5 percent higher than the national average (Australia excluding Queensland).

The observed rates of hysterectomy performed on women aged less than 35 years varied from 4.3 per 100 separations for the small hospitals peer group up to 12.2 per 100 separations for large hospitals.

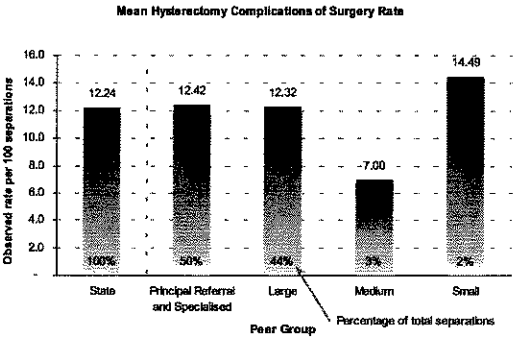
After risk-adjusting the data, the findings were as follows:

- small hospitals were found to have a likelihood of hysterectomy for women below the age of 35 years that was approximately one third of that recorded by principal referral and specialised hospitals. However, the difference was of only marginal statistical significance. The risk-adjusted results for medium and large hospitals did not differ significantly from the principal referral and specialised group of hospitals.
- patients admitted as private patients to public hospitals were 30 percent less likely to be under 35 years old when they had a procedure for hysterectomy.

Identification of this variation will enable specific clinical and quality improvement activities to be progressed across the Queensland health system.

♦ Hysterectomy - complications of surgery rate

This indicator identifies the rate of possible complications resulting from treatment in hospital for hysterectomy.



Comments

Queensland's complications of surgery rate for hysterectomy was seven percent better than the national average (Australia excluding Queensland).

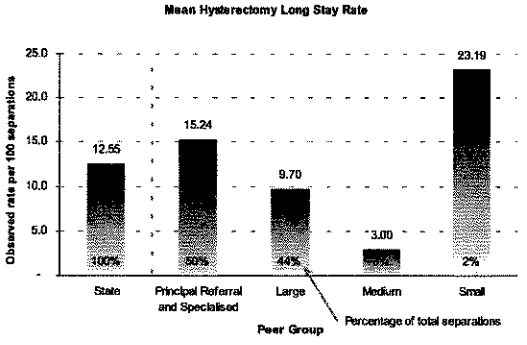
Medium hospitals had the lowest observed rate of complications (7.0 per 100 separations) while small hospitals (14.5 per 100 separations) had the highest rate.

After risk-adjusting the data, the findings were as follows:

- separations from medium hospitals were only half as likely to have complications of surgery due to hysterectomy as were those from principal referral and specialised hospitals. The risk-adjusted chance of complications of surgery at large and small hospitals did not differ significantly from the result for the principal referral and specialised hospitals group.
- compared to public patients, patients admitted as private patients to public hospitals were 56 percent less likely to have a complication of surgery due to hysterectomy.

♦ Hysterectomy - long stay rate

This indicator measures the rate of patients who remained in hospital for 6-30 days (long stay) for an admission for a hysterectomy.



Comments

Queensland's average length of stay for hysterectomy was 13 percent better than the national average (Australia excluding Queensland).

There were large variations in the observed rate of long stays for hysterectomy across the various hospital peer groups. Medium hospitals had the lowest rate of long stays at 3.0 per 100 separations, while in contrast the long stay rate at small hospitals was 23.1 per 100 separations.

After risk-adjusting the data, the findings were as follows:

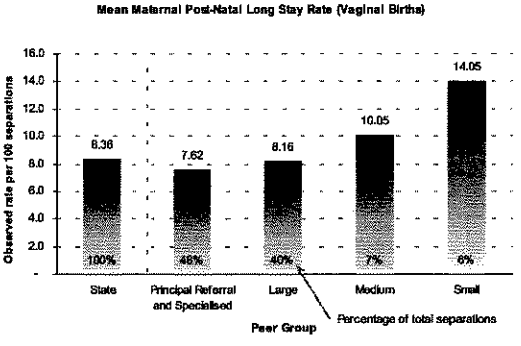
- both large and medium hospitals were found to have a significantly lower likelihood of a long stay compared with principal referral and specialised hospitals (40 percent and 86 percent lower respectively). In contrast, the likelihood of a long stay for patients at small hospitals was 74 percent higher when compared to principal referral and specialised hospitals.
- patients admitted as private patients to a public hospital were just over half (53 percent) as likely to have a long stay as were public patients.

Maternity services

Maternity services specifically relating to pregnancy, childbirth and the puerperium accounted for the third highest number of separations in public hospitals in Australia in 1999-2000 and accounted for 9 percent of total hospital separations[9].

♦ Maternal post-natal - long stay rate (vaginal birth)

This indicator measures the number of women giving birth vaginally who remained in hospital for between 5 and 30 days.



Comments

Queensland's average length of stay of vaginal birth without complicating factors was 20 percent better than the national average.

There was an apparent correlation between the size (and perhaps location) of the hospital and the observed rate of long stays. Principal referral and specialised hospitals had the lowest rate of long stays (7.6 per 100 separations), while the highest rate was recorded by the small peer group hospitals (14.0 per 100 separations).

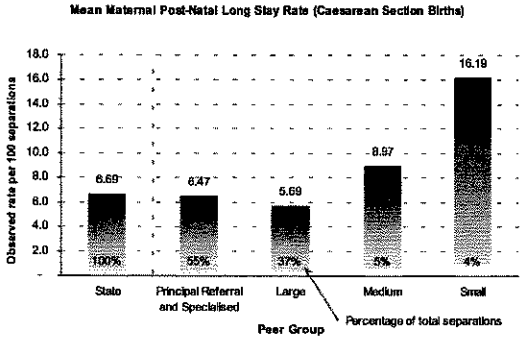
After risk-adjusting the data, the findings were as follows:

- large, medium and small hospitals were all found to have a significantly higher likelihood of maternal post-natal long stay for vaginal births compared to principal referral and specialised hospitals (20 percent, 71 percent and

170 percent (or more than 2.5 times higher respectively).

♦ Maternal post-natal - long stay rate (caesarean section)

This indicates the number of women who remained in hospital for between 7 and 30 days following a caesarean section.



Comments

Queensland's average length of stay for caesarean birth without complicating factors was 21.8 percent better than the national average.

The results follow a similar pattern to those found for vaginal births, except that the large peer group hospitals have the lowest observed rate of maternal post-natal long stays (5.7 per 100 separations). Once again, the long stay rate observed for small hospitals is much higher, at 16.2 per 100 separations.

After risk-adjusting the data, the findings were as follows:

- medium and small hospitals were both found to have a significantly higher probability of a maternal post-natal long stay for caesarean sections compared to principal referral and specialised hospitals. The likelihood for medium hospitals was nearly two and a half times as high, while for small hospitals the chances of a long stay were over five times higher. However, there was no significant difference in the likelihood of a post-natal long stay between principal referral and specialised hospitals and the large hospitals peer group.

Standard primiparae

A standard primipara is defined in this study as a woman having her first baby who is aged between 20 and 34 years, having no medical complications and having a single baby that presents head first in labour and is delivered between 37 to 41 weeks gestation. These women are considered to be low risk and intervention rates in the form of caesarean section and inductions should therefore be low in this population[10]. High rates indicate a need for investigation.

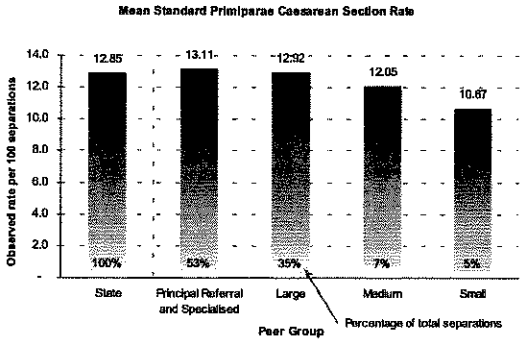
Caesarean section

The rate of caesarean section varies considerably among countries from about 5 percent to over 25 percent of all births. The optimal rate is not known, but from national data available, little improvement in outcome appears to occur when rates rise above a rate of about 7 percent[11]. Caesarean section is an operation and as such, is accompanied by varying degrees of risk. Haemorrhage, infection and mortality are more common in women who have a caesarean section than among women who deliver vaginally. Although the overall caesarean section rate cannot determine inappropriate use, examining the variation in rates across hospitals and regions may identify areas where caesarean rates can be reduced[12].

A **caesarean section** is the delivery of a baby by incision through the abdominal wall and uterus.

♦ Standard primiparae - caesarean section rate

This measures the number of women having their first baby who underwent a caesarean section.



Comments

Queensland's caesarean section rate for all births was 6.8 percent higher than the national average.

The observed rates of caesarean sections were reasonably similar, varying from 10.7 per 100 separations for the small peer group hospitals up to 13.1 per 100 separations for the principal referral and specialised hospital group.

After risk-adjusting the data, the findings were as follows:

- there was no significant difference in the likelihood of a caesarean section occurring for any of the hospital peer groups.
- patients admitted as private patients to public hospitals were over two and a half times more likely to have a caesarean section when compared to public patients.

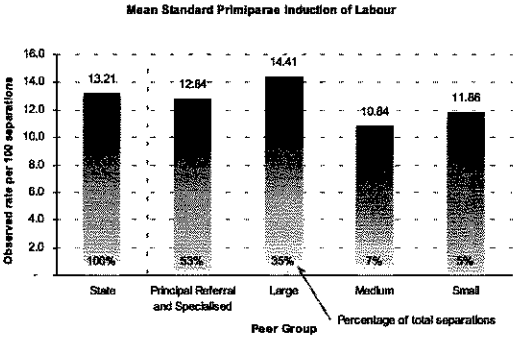
Identification of this variation will lead to further work, including a focus on integrated care and primary health care to improve patient outcomes in line with the national average.

Induction of labour

Induction before the cervix is ready for labour may lead to a 'cascade' of interventions with high rates of induction failure, protracted and exhausting labours, a high caesarean rate and other complications[13].

♦ Standard primiparae - induction rate

This measures the number of women having their first baby who underwent an induction of labour.



Comments

Queensland's induction rate for all births was 3.8 percent better than the national average.

There was no obvious pattern in the spread of the observed rates of induction of labour across the hospital peer groups. Medium hospitals had the lowest rate of inductions (10.8 per 100 separations) while large hospitals collectively had the highest rate of inductions (14.4 per 100 separations).

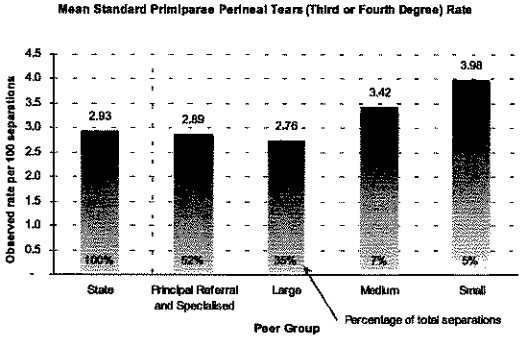
After risk-adjusting the data, the findings were as follows:

- there was no significant variation in the probability of induced births occurring for standard primiparae for any of the hospital peer groups.
- women admitted as private patients to public hospitals were more than two and a quarter times as likely to have an induction of labour as were women under public care.

♦ Standard primiparae - 3rd or 4th degree perineal tears

This indicates the number of women having their first baby who sustained a third or fourth degree perineal tear during a vaginal birth.

These are tears of the perineum extending to the anal sphincter often as a result of an episiotomy. There is no evidence to support claims that liberal use of episiotomy reduces the risk of severe perineal trauma, improves perineal healing, prevents foetal trauma or reduces the risk of urinary stress incontinence after delivery[14].



Comments

The Queensland rate for perineal tears was marginally better than the national rate. Further clinical and quality improvement activities will be undertaken in this area.

The observed rates of third or fourth degree perineal tears showed only minor variation across the hospital peer groups, ranging from 2.8 per 100 separations for the large hospitals to 4.0 per 100 separations for the small hospital group.

After risk-adjusting the data, the findings were as follows:

- there was no significant difference in the likelihood of a third or fourth degree perineal tear occurring between any of the hospital peer groups.
- women under private care in public hospitals were two and a quarter times more likely to have a third or fourth degree perineal tear than women who were public patients.

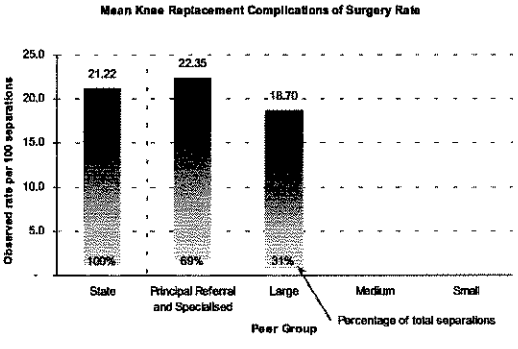
Orthopaedic conditions

Knee replacement

Knee replacement procedures are performed in an attempt to alleviate the pain and decreased mobility associated with disease of the knee joint. The majority of people receiving this type of intervention are middle-aged to elderly people with chronic arthritic conditions that can no longer be managed by other treatments. The increase in the ageing population is having a large effect on the rate of knee replacement procedures being required and undertaken.

♦ Knee replacement - complications of surgery rate

This measures the number of patients admitted for a knee replacement where a complication of the surgery resulted.



Comments

Queensland's complications of surgery rate for knee replacement was around 15 percent better than the national average (Australia excluding Queensland).

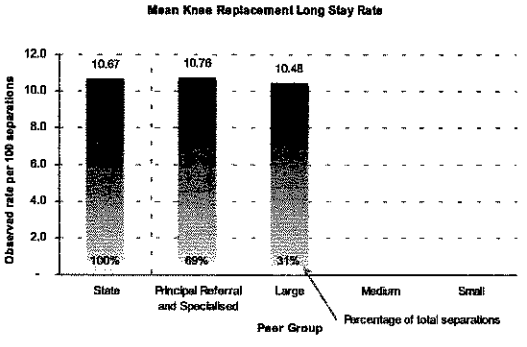
The observed rates of complications following surgery for knee replacement were 22.3 per 100 separations for principal referral and specialised hospitals and 18.7 per 100 separations for large peer group hospitals. This procedure was not conducted in the medium and small peer group hospitals.

After risk-adjusting the data, the findings were as follows:

- there was no significant difference found in the likelihood of complications of surgery between the peer groups of large hospitals and principal referral and specialised hospitals.
- patients admitted as private patients to public hospitals were less than half as likely to have a complication of surgery than were public patients.

♦ Knee replacement - long stay rate

This measures the rate of patients who remained in hospital for at least 14 days (long stay) following an admission for knee replacement surgery.



Comments

Queensland's average length of stay for knee replacement was 8.2 percent better than the national average (Australia excluding Queensland).

There was only a marginal difference in the observed rates of long stays for principal referral and specialised hospitals (10.8 per 100 separations) and large hospitals (10.5 per 100 separations). This procedure was not conducted in the medium and small peer group hospitals.

After risk-adjusting the data, the findings were as follows:

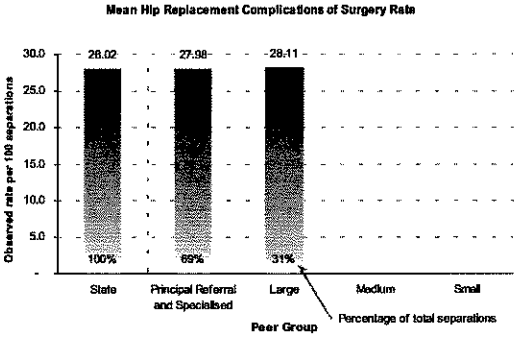
- there was very little difference in the likelihood of a long stay occurring at either principal referral and specialised hospitals or large hospitals.
- patients admitted as private patients to public hospitals were 41 percent less likely to have a long stay when compared to public patients.

Hip replacement

These procedures are primarily performed to relieve pain, stiffness and deformity caused by disease of the hip joint such as osteoarthritis. Disease of the hip joint is age-related and as people are living longer the incidence is increasing. Hip replacement procedures are very cost-effective but outcomes have been seen to vary, particularly in relation to technical success, patient satisfaction and morbidity.

♦ Hip replacement - complications of surgery rate

This measures the number of patients admitted for a hip replacement where a complication of the surgery resulted.



Comments

Queensland's complications of surgery rate for hip replacement was almost 10 percent better than the national average (Australia excluding Queensland).

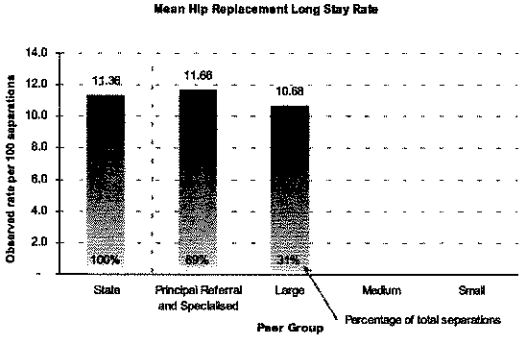
There was very little difference in the observed rates of complications of surgery for principal referral and specialised hospitals (28.0 per 100 separations) and large hospitals (28.1 per 100 separations). This procedure was not conducted in the medium and small peer group hospitals.

After risk-adjusting the data, the findings were as follows:

- there was still very little variation in the likelihood of complications of surgery between large hospitals and principal referral and specialised hospitals.
- patients who were admitted as private patients in public hospitals were 45 percent less likely to have complications of surgery than those who were admitted as public patients.

♦ Hip replacement - long stay rate

This indicator measures the rate of patients who remained in hospital for 15 days or longer (long stay) following an admission for hip replacement surgery.



Comments

Queensland's average length of stay for hip replacement was 9.5 percent better than the national average (Australia excluding Queensland).

Principal referral and specialised hospitals had a slightly higher observed rate of long stays for hip replacement surgery in comparison to the peer group of large hospitals (11.7 and 10.7 per 100 separations respectively). The medium and small hospitals do not perform this procedure.

After risk-adjusting the data, the findings were as follows:

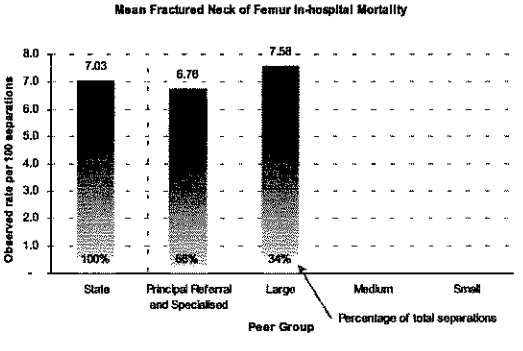
- there was no statistically significant difference in the chances of a long stay occurring for either large hospitals or principal referral and specialised hospitals.
- patients who were admitted as private patients in public hospitals were 47 percent less likely to have a long stay than those who were admitted as public patients.

Fractured neck of femur

Fractured neck of femur is a condition that commonly affects the elderly population, and requires hospital admission. As the age of our population is increasing so will the number of admissions for fractured neck of femur. This condition is more common in women, with rates of approximately four women out of every 100 women over the age of 85[15].

♦ Fractured neck of femur - in-hospital mortality rate

This indicator measures the rate of patients who have died in hospital following an admission for fractured neck of femur.



Comments

Queensland's in-hospital mortality for fractured neck of femur was marginally better than the national average (Australia excluding Queensland).

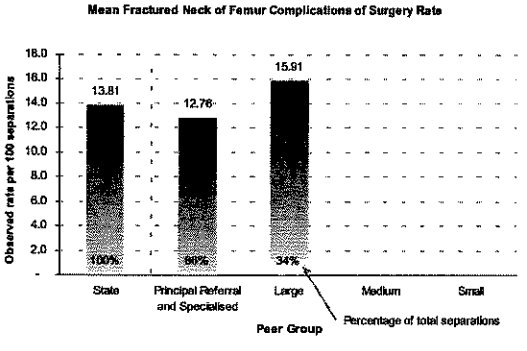
Separations from large hospitals were slightly more likely to result in in-hospital mortality compared to principal referral and specialised hospitals (7.6 and 6.8 per 100 separations respectively). This procedure was not conducted in the medium and small peer group hospitals.

After risk-adjusting the data, the findings were as follows:

- there was no statistically significant difference in the chance of in-hospital mortality occurring for either large hospitals or principal referral and specialised hospitals.
- whether a patient was admitted as a public or private patient to a public hospital had no statistically significant impact on in-hospital mortality.

♦ Fractured neck of femur - complications of surgery rate

This measures the number of patients admitted for a fractured neck of femur where a complication of surgery resulted.



Comments

Queensland's complications of surgery rate for fractured neck of femur is 32.9 percent better than the national average (Australia excluding Queensland).

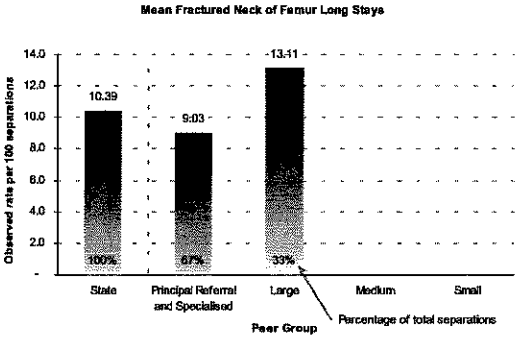
The observed rate of complications following surgery for fractured neck of femur was somewhat higher for the large hospitals peer group compared to the principal referral and specialised hospitals (15.9 and 12.8 per 100 separations respectively.) The medium and small hospitals do not perform this procedure.

After risk-adjusting the data, the findings were as follows:

- there was no statistically significant difference in the probability of complications of surgery for either large hospitals or principal referral and specialised hospitals.
- patients admitted as private patients to public hospitals were just over a third as likely as public patients to have complications of surgery, although the result is only of borderline statistical significance.

♦ Fractured neck of femur - long stay rate

This indicator measures the rate of patients who remained in hospital for 47 days or longer (long stay) following an admission for fractured neck of femur surgery.



Comments

Queensland's average length of stay for fractured neck of femur is equal to the national average (Australia excluding Queensland).

The observed rates of long stays following surgery for fractured neck of femur were 9.0 per 100 separations for principal referral and specialised hospitals and 13.1 per 100 separations for large peer group hospitals. This procedure was not conducted in the medium and small peer group hospitals.

After risk-adjusting the data, the findings were as follows:

- large hospitals were found to have a significantly higher likelihood of a long stay occurring (almost 50 percent higher) compared to principal referral and specialised hospitals.
- whether a patient was admitted as a public or private patient to a public

hospital made very little difference to their chances of having a long stay.

Improvement activities

Falls prevention

Since falls and fractures are preventable, so fractured necks of femurs can be prevented. Falls prevention strategies therefore have the potential to reduce the incidence of this condition. The *Falls Prevention Best Practice Guidelines for Public Hospitals and State Government Residential Aged Care Facilities* aim to prevent falls and fall-related injuries in people aged 60 and over, in Queensland public hospitals and state government residential aged care facilities. They have been developed and distributed within Queensland Health to standardise practices to prevent falls. These guidelines assist clinicians by:

- identifying patients at risk of falls
- providing strategies to prevent patients falling and
- providing ways to reduce the injuries caused by falls.

A learning package educates staff about falls prevention and management.

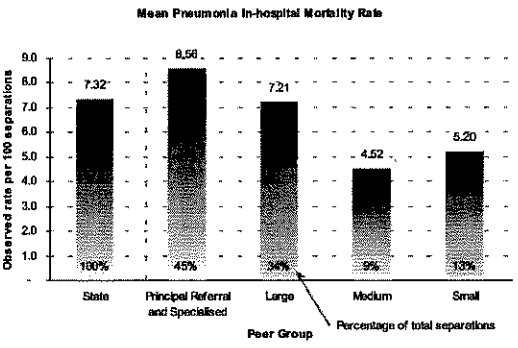
Respiratory conditions

Pneumonia

Pneumonia is a major cause of morbidity and mortality. It is a potentially preventable disease and is mainly due to bacterial infection. For the period 1999-2000 there were over 44,000 separations for influenza and pneumonia from Australian public hospitals. Over 8,000 of these were in Queensland[16]. For the purpose of this report, community-acquired pneumonia as the principal cause for admission to hospital has been examined.

♦ Pneumonia - in-hospital mortality rate

This indicator measures the rate of patients who have died in hospital within 30 days of an admission for pneumonia.



Comments

Queensland's in-hospital mortality for pneumonia is very similar to the national average (Australia excluding Queensland).

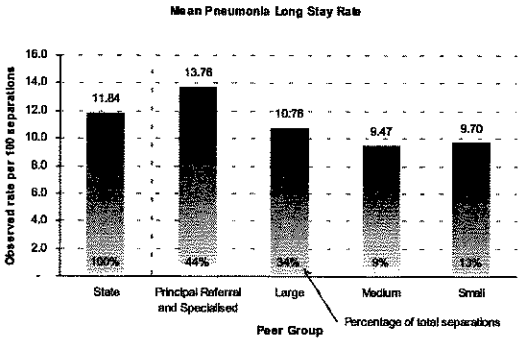
The observed rates of in-hospital mortality varied from 4.5 per 100 separations for the medium hospitals peer group up to 8.6 per 100 separations for principal referral and specialised hospitals.

After risk-adjusting the data, the findings were as follows:

- although the observed in-hospital mortality rate was highest for principal referral and specialised hospitals, the large, medium and small hospital groups showed no significant differences in their likelihood of in-hospital mortality compared with this group.
- patients admitted as private patients to public hospitals had a 46 percent higher chance of in-hospital mortality compared to public patients, although the statistical significance of this result was only marginal.

♦ Pneumonia - long stay rate

This indicator measures the rate of patients who remained in hospital between 12 and 30 days (long stay) following an admission for pneumonia.



Comments

Queensland's average length of stay for pneumonia was 7.3 percent better than the national average (Australia excluding Queensland).

A similar pattern was found as for in-hospital mortality due to pneumonia, with medium hospitals having the lowest observed rate of long stays (9.5 per 100 separations), while principal referral and specialised hospitals had the highest rate at 13.8 per 100 separations.

After risk-adjusting the data, the findings were as follows:

- medium hospitals were found to have a 30 percent lower likelihood of long stays compared to principal referral and specialised hospitals. However, neither the large or small hospital peer groups differed significantly from the principal referral and specialised hospitals in their probability of a long stay occurring for pneumonia.
- whether a patient was admitted as a public or private patient to a public hospital had no statistically significant impact on their chance of having a long stay.

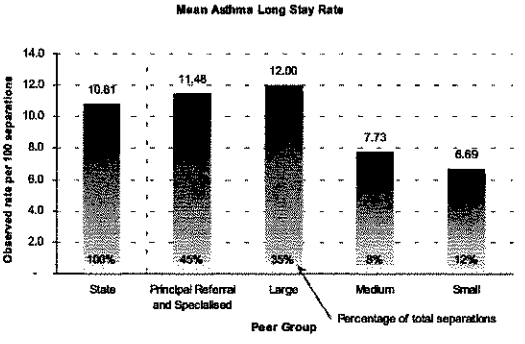
Asthma

Asthma is a chronic disease that can cause obstruction of the airways in response to various stimuli. It mainly affects young people. The symptoms range from mild to severe but are reversible if managed appropriately.

Asthma appears in the top ten causes of disease burden in Australia. The prevalence of asthma in Australia is almost four times higher than in other similar countries[17]. The cost of asthma to the community has been estimated to be around $700m per year[18].

♦ Asthma - long stay rate

This indicator measures the rate of patients who remained in hospital between 7 and-30 days (long stay) following an admission for asthma.



Comments

Queensland's average length of stay for asthma was 13.1 percent better than the national average (Australia excluding Queensland).

The observed rates of long stays for asthma were similar for principal referral and specialised hospitals and large hospitals (11.5 and 12.0 per 100 separations respectively). However, the long stay rates were considerably lower for the peer groups of medium hospitals (7.7 per 100 separations) and small hospitals (6.7 per 100 separations).

After risk-adjusting the data, the findings were as follows:

- medium and small hospitals were both found to have significantly lower likelihoods of long stays occurring (53 percent and 58 percent lower respectively) compared to principal referral and specialised hospitals. However, there was very little difference in the probability of a long stay at large hospitals in relation to principal referral and specialised hospitals.
- Whether a patient was admitted as a public or a private patient to a public hospital had a negligible impact on their chances of having a long stay.

General surgery

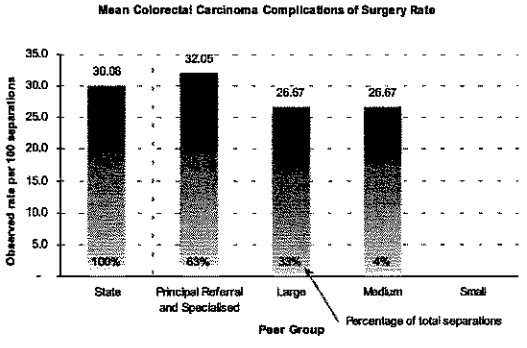
Colorectal carcinoma

Almost 85 percent of colorectal carcinoma occurs in people over the age of 55. It is newly detected in over 11,000 people per year and is the second most common cancer in both men and women[19].

Surgery is the main and most effective treatment, with many patients requiring surgery six months post diagnosis[20].

♦ Colorectal carcinoma - complications of surgery rate

This indicator measures the number of patients admitted for surgery for colorectal carcinoma where a complication of surgery resulted.



Comments

Queensland's complications of surgery rate for colorectal carcinoma was 14 percent better than the national average (Australia excluding Queensland).

Both the large and medium hospital peer groups had an observed rate of complications of surgery for colorectal cancer of 26.7 per 100 separations, which was considerably lower than the rate of 32.0 per 100 separations recorded by principal referral and specialised hospitals.

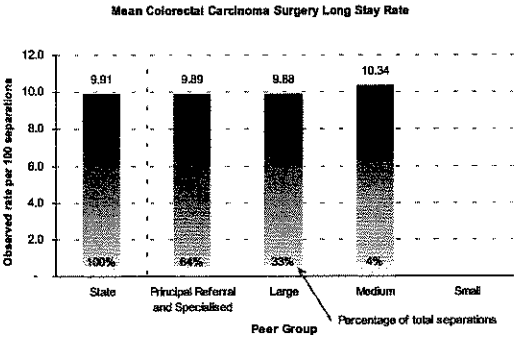
No small hospitals performed these procedures.

After risk-adjusting the data, the findings were as follows:

- large hospitals were found to have a significantly lower likelihood of complications than principal referral and specialised hospitals (29 percent lower). Although the observed rate for medium hospitals was the same as that for large hospitals, the difference in the probability of complications of surgery occurring at either medium hospitals or principal referral and specialised hospitals was not significant.
- whether a patient was admitted as a public or a private patient to a public hospital had no statistically significant impact on their outcome for complications of surgery.

♦ Colorectal carcinoma - long stay rate

This indicates the number of patients who remained in hospital for 19 days or longer (long stay) following an admission for colorectal carcinoma surgery.



Comments

Queensland's average length of stay for colorectal carcinoma was 11.4 percent better than the national average (Australia excluding Queensland).

The observed rates of long stays were similar for each of the hospital peer groups, ranging from 9.9 per 100 separations for both principal referral and specialised hospitals and large hospitals, to 10.3 long stays per 100 separations for medium hospitals.

No small hospitals performed these procedures.

After risk-adjusting the data, the findings were as follows:

- there were no significant differences between the principal referral and specialised hospitals and the other hospital peer groups.
- whether a patient was admitted as a public or a private patient to a public hospital had no statistically significant impact on their outcome for long stays.

Diabetic foot

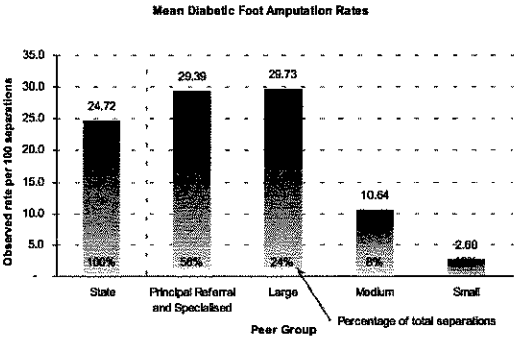
Diabetes results from increased blood glucose levels due to an inadequate production of the glucose metabolising hormone insulin, and/or resistance to its action. It is a chronic disease that is often associated with heart disease, stroke, blindness, renal disease and lower limb amputations.

In Australia, diabetes is the seventh leading cause of death. It affects approximately four percent of the population over 40 years of age[21].

The development of foot or leg ulcers in people with diabetes is associated with nerve damage, lack of blood supply or both. Serious infection originating from a diabetic ulcer is the most common reason for amputation.

♦ Diabetic foot - amputation rates

This indicator measures the number of patients who were admitted for diabetic foot, where an amputation of the foot or leg occurred.



Comments

The observed rates of amputations for diabetic foot were similar for principal referral and specialised hospitals and large hospitals (29.4 and 29.7 per 100 separations respectively). In contrast, the amputation rates were much lower for the peer groups of medium hospitals (10.6 per 100 separations) and small hospitals (2.6 per 100 separations).

After risk-adjusting the data, the findings were as follows:

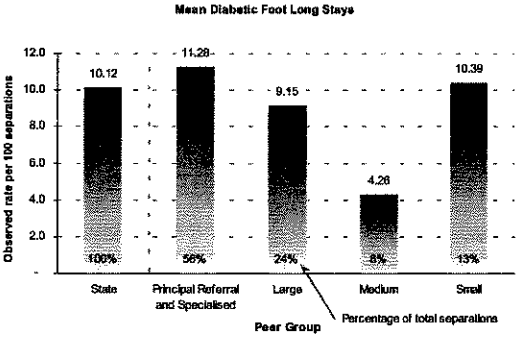
- medium and small hospitals were both found to have significantly lower likelihoods of amputation when compared against principal referral and specialised hospitals. The probability of an amputation occurring at medium hospitals was less than a third of that for principal referral and specialised hospitals, and the likelihood of an amputation at small hospitals was 95 percent lower. However, there was very little difference in the chances of an amputation being performed at large hospitals in comparison to principal referral and specialised hospitals.
- whether a patient was admitted as a public or private patient to a public hospital had no statistically significant impact on their chance of having an amputation.

The increased rate for Diabetic foot – amputation rates in the principal referral and specialised and large hospitals could be a reflection of more complicated cases being treated in these hospitals than at the medium and small facilities.

Reliable national comparative data were not available for diabetic foot amputation rates.

♦ Diabetic foot - long stay rate

This indicator measures the rate of patients who remained in hospital for 30 days or longer (long stay) following an admission for diabetic foot.



Comments

There was no obvious pattern in the spread of the observed long stay rates across the hospital peer groups. Medium hospitals had the lowest rate of long stays (4.3 per 100 separations) while principal referral and specialised hospitals had the highest rate of long stays (11.3 per 100 separations).

After risk-adjusting the data, the findings were as follows:

- there appeared to be a considerable amount of variation in the observed long stay rates between the hospital peer groups. However, because the number of separations was relatively small, these differences did not reach statistical significance.
- whether a patient was admitted as a public or a private patient to a public hospital had no statistically significant effect on their chance of having a long stay.

Reliable national comparative data were not available for diabetic foot average length of stay.

Improvement activities State highlights

Queensland Health is undertaking a number of activities and programs aimed at specifically addressing the need for improvement in clinical care and the reduction of variation in clinical practice across the State.

Some of these activities are outlined below.

The Primary Clinical Care Manual

This manual is a major clinical resource for health professionals working in rural and remote locations and is the result of a partnership between Queensland Health and the Royal Flying Doctor Service (Queensland Section). It was first published in 1998. After being reviewed the second edition was published in June 2001.

The manual provides clear and concise clinical care guidelines and health management protocols for indigenous health workers, registered nurses and medical officers working in rural and remote Queensland.

The interventions in the manual are based on the best available evidence and information on best practice from experienced health professionals working in rural and isolated practice areas and sexual health programs throughout Queensland.

The main beneficiaries will be the many rural and remote/isolated area communities and patients who will have greatly improved access to quality primary health care, delivered by nurses using evidence-based protocols in a supportive environment.

Transition programs for nurses

To assist nurses to develop the knowledge and skills necessary to practise competently and safely in a new clinical environment, Queensland Health has developed and continues to develop educational programs for a range of clinical areas. These programs comprise theoretical and practical components, include formal assessments and are being articulated into tertiary level courses. Programs will be available in the following areas:

- aged care
- emergency
- high dependency
- intensive care (adult and paediatric)
- medicine/surgery
- neonatal
- neuroscience
- oncology
- paediatric and child health
- perioperative
- renal

Clinical pathways

Evidence-based clinical pathways (see page 53) are being developed across the State, to improve the quality and efficiency of clinical care.

Cairns Base Hospital – Building on significant work already undertaken at Cairns Base Hospital in orthopaedics, clinical pathways are being implemented in general surgery and day surgery.

Ipswich Hospital – As part of a strategy to optimise the efficiency of the day surgery service, a standardised day surgery pathway is to be introduced.

Queen Elizabeth II Jubilee Hospital – As part of a reorganisation of orthopaedic surgery services, clinical pathways will be introduced for hip and knee replacement surgery as well as for a variety of procedures undertaken through day surgery such as arthroscopy.

Infection control

Queensland Health is conducting a program aimed at improving infection control within hospitals. The *Queensland Health Infection Control Guidelines 2001* have been developed and a Public Health Services infection control website has been established at:

http://www.health.qld.gov.au/infectioncontrol/research.html

Other activities under this program include:

- the introduction of a standardised electronic tracking and management information system for sterilised instrument packs;
- examination of reprocessing of high cost single-use medical devices;
- the development of a training package for reprocessing of flexible endoscopic equipment and accessories;
- improved prevention and management of pressure ulcers and care of wounds;
- exploration of models of infection control service delivery.

Collectively, 24 Queensland hospitals form the Centre for Healthcare Related Infection Surveillance and Prevention network.

Integrated risk management

In Queensland Health, risks are defined as the chance of anything happening that would have a negative impact upon our ability to provide high quality health services.

Good risk management will ensure that the management of risk is based on informed decision-making, realistic and measurable objectives and the analysis of outcomes.

Queensland Health is taking a systematic approach to the management of risk by developing an *Integrated Risk Management Framework* and education for Queensland Health staff in risk management is currently underway.

Improved use of medicines

The aim of the program is to improve the quality use of medicines, with a focus on the prevention of adverse drug events for patients. Strategies will include:

- employing pharmacists in the pre-admission clinics of hospitals to help patients to have better understanding of medicine use before coming into hospital for surgery;
- developing a discharge medication record which lists the medicines a patient is to take when they leave hospital. A copy can be sent to the local general practitioner and community pharmacy if required;
- improving medicine education for rural and isolated health professionals;
- developing methods of communication between the hospital and community;
- upgrading pharmacy computer systems currently being used in Queensland Health hospitals, with the aim of providing linked patient medicines information across all hospitals.

The project is developing improved access, appropriateness, safety and effectiveness of medication use within Queensland Health and is focused on consumer involvement to meet their needs.

Patient satisfaction

Patient-centred care is a priority for Queensland Health and measuring the effectiveness of health care delivery also involves measuring patients' satisfaction with this care. Patients' assessments of their health and quality of life, and their satisfaction with the quality of health care services are as important as many clinical and efficiency measures.

There are regular comments and reviews of health care services appearing in the media. Patients are more knowledgable about health care today and are demanding more information about services and more evidence about the quality of these services.

Individual units and wards of hospitals have regularly undertaken patient satisfaction surveys through the use of both standard and specially developed questionnaires. However, patient satisfaction had not been measured across Queensland public hospitals at a state level. As a result, Queensland Health has been unable to make comparisons across its hospitals.

In order to measure patient perceptions of the care provided by the majority of public hospitals in Queensland, Queensland Health commissioned a patient satisfaction survey in September and October 2001. There were 10,414 responses which represented a 44 percent response rate.

The questionnaire was designed to measure patient perceptions of a range of factors that contributed to their care. These include:

Access and admission

- how long did you wait for admission?
- did you receive any written information, and how clear was it?
- what were the staff attitudes before admission?
- what were the staff attitudes at admission?
- how clear was the explanation of hospital routines?
- were your needs and wants considered?
- how long did you wait for a bed after you arrived at hospital?

Complaints management

- did staff respond to your problems?
- were staff willing to listen to your problems?

Discharge and followup

- how convenient was the time of discharge?
- did you receive information about how to look after your condition?
- were post-discharge service arrangements adequate?

General patient information

- were you treated with respect?
- were staff members helpful?
- were the nurses responsive to your needs?
- were staff available for your needs?

Physical environment

- was the hospital clean?
- was the food good?
- was the environment restful?
- did you have enough privacy in your room?
- were the toilets and showers clean?

Treatment and related information

- how well did the doctors explain your treatment?
- did the staff communicate with each other?
- did you receive help to relieve pain?
- did you have the opportunity to ask questions?
- was the purpose of medicines explained to you?
- did you receive an explanation of side-effects?

The report *Patient Satisfaction in Queensland Health Acute Care Public Hospitals, State Summary Report* has been published and can be found on the Queensland Health internet website. The address is:

http://www.health.qld.gov.au/quality/publications/patient_satisfaction_report.pdf

The results of this statewide survey showed that overall, most patients (89 percent) were *satisfied* with their hospital stay, with 59 percent being *very satisfied.*

Four measures that received the highest commendation from patients were:

- cleanliness of rooms
- attitudes of staff spoken to before admission
- courtesy of nurses
- helpfulness of staff.

Areas requiring improvement include:

- discharge planning processes
- access and admission processes
- provision of clear treatment related information
- management of patient complaints.

Mental health patients showed a lower level of overall satisfaction of around 72 percent, which is consistent with the findings of the "Consumer and Carer Satisfaction Survey" of adult mental health services, reported by the Victorian Department of Human Services in June, 2000.

Other findings suggest that patients from a non-english speaking background were more dissatisfied particularly in the areas of access and admission, the general patient and treatment information that they received, and in the management of their complaints.

Patients undergoing surgery perceived their care to be significantly better than both medical and maternity patients do. However, all three groups had a significantly higher overall satisfaction rate than was found for mental health patients.

Another finding was that private patients in public hospitals were more satisfied with the treatment and information they received as well as their discharge planning.

These findings indicate that the entire hospital experience, from admission, through all aspects of the hospital stay, to discharge, impacts on a patient's perception of their hospital stay. Hence any effort to improve hospital services must be broad-based, targeting all areas of hospital services, rather than specific functional areas.

Areas of good performance

Principal referral and specialised category: Patients were more satisfied with their care at The Prince Charles and Royal Women's Hospitals.

Large hospital category: Patients were more satisfied with their care at the Caboolture, Redland, Hervey Bay and Maryborough hospitals.

Medium hospital category: Patients were more satisfied with their care at the Proserpine and Atherton hospitals.

Small hospital category: Patients were more satisfied with their care at the Biloela, Wynnum, Bowen and Charleville hospitals.

Improvement activities
State highlights

Review of patient election form and patient charter materials

Arising out of the need to ensure patients are informed of and understand their rights and responsibilities for their health care, Queensland Health undertook an extensive review of patient information materials. Following this review, a new patient election form and '*Your Choice*' pamphlet have been developed. Queensland Health has also revised the patient charter '*Making the Most of a Visit to Your Health Service*' according to language and readability guidelines. The revised patient election form will:

- continue to allow patients to choose public or private treatment;
- enable patients to consent to the release of their admission, demographic and medical details to specific funding agencies.

The aim is to provide materials that are of value to, and accessible by patients and staff. An education package has been developed and is available to all Queensland Health staff who use the materials.

Doctor-Patient communication workshops

Training is being provided to clinicians in the use of effective communication techniques that achieve positive clinician-patient interactions and greater patient cooperation. It is recognised that clear communication, healthy clinician-patient relationships and the involvement of patients as partners in care are important ethical and human rights issues and improve patient satisfaction.

Informed consent

This activity aims to provide enough details for the patient to give a valid consent to treatment:

- through information at the appropriate level to allow for understanding
- through effective processes which are practical enough to be used

so that the patient has improved access to the information.

The program will provide medical staff with a variety of methods to assist them in the consenting process with their patients.

The consent forms developed will provide a structured interview process, which will be of particular benefit to the medical staff who are involved in the consent process, particularly at the pre-admission stage.

Guidelines to assist clinicians prepare written information for patients

Clinicians need to provide valid, understandable and easily accessible information to give patients a voice in all their health care decisions.

Patients receive a large variety of health and clinical information presented in a range of quality, language styles and currency. Queensland Health staff expressed the need for guidelines that would assist them in developing written consumer information. The staff of the Gold Coast Health Services District have established a set of guidelines and tools to assist health professionals prepare evidence-based patient information. These guidelines address the need to consider language, format and content in patient information to ensure relevance, appropriateness and a better understanding of the information.
These tools will provide the foundation for an electronic package to assist clinicians throughout Queensland Health.

Discharge planning workshops

Discharge planning has been identified as a need by public hospitals over a number of years. The need for improvements in this area was also identified through the state-wide satisfaction survey as documented earlier.

Major areas of concern for patients in regard to discharge planning have been the post-discharge arrangements made by the hospital eg. outpatient appointments and the lack of written information about how to look after their condition on their return home.

In response to these needs, discharge planning workshops are being delivered to public hospitals across the State. The emphasis of these workshops is that hospital and community staff work together to identify ways they can improve discharge planning. As a result of these workshops, the types of initiatives that hospitals have committed to undertake include the following:

- to improve communication processes between the hospital and community services;
- commence planning for the patient's discharge needs early in the admission and involve relevant staff;
- improve patient education and the need for written materials and guidelines in regard to their condition and treatment, availability, eligibility and access to community services;
- encourage active participation of the patient, their family and general practitioner in the discharge planning process;
- provide better information and education to all health care staff about discharge planning and patient referral processes;
- explore better ways to ensure that general practitioners receive timely discharge information from the hospital; and
- standardise practice in relation to discharge processes.

Efficiency

To deliver good quality health services, Queensland Health needs to manage its financial and human resources efficiently. This becomes increasingly difficult in a changing environment where the demands for health care are growing in the face of continuing constraints on the capacity of governments to fund health care services.

Just as it is important to measure the results of clinical care using clinical indicators documented in a previous chapter, the ability to measure the technical efficiency of hospitals is essential for the efficient management of resources. Efficient use of resources is critical to a hospital's ability to provide the right amount of quality services.

Measures of technical efficiency are, therefore, an important component of a report on hospital performance. If an individual hospital's utilisation is consistently higher than comparable hospitals, capacity to increase service delivery is lower.

Indicators reported in this quadrant can be classified into two broad categories:

- **activity of the service:** number of separations; length of stay and bed occupancy.
- **cost of the service:** cost of catering; energy costs and cost per weighted separation.

The data used for this quadrant are from administrative, workforce and financial databases routinely used by Queensland Health.

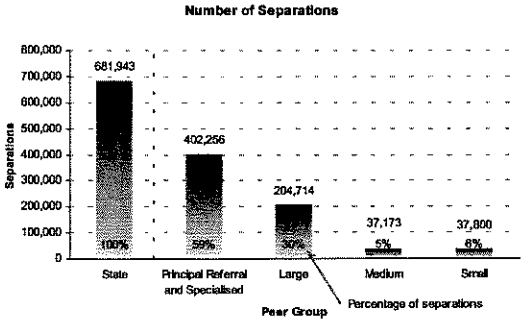
Measures of activity

♦ Number of separations

The number of separations reflects the total number of patients completing an episode of care.

Episode of care
An episode of care is a phase of treatment for an admitted patient. It may correspond to a patient's entire hospital stay, or the hospital stay may be divided into separate episodes of care of different types, such as acute care, palliative care and rehabilitation care (AIHW).

This measure does not eliminate differences due to the varying severity of illness of patients at each hospital. Hence, caution is required in making comparisons across hospital peer groups. It is not an indicator of performance but more a descriptor of volume of activity.



Comments

- acute public hospital separations for Queensland represented 18.3 percent of the total number of separations nationally in 1999-00[22]. Queensland ranked third after New South Wales and Victoria for total public hospital separations.

♦ Length of stay

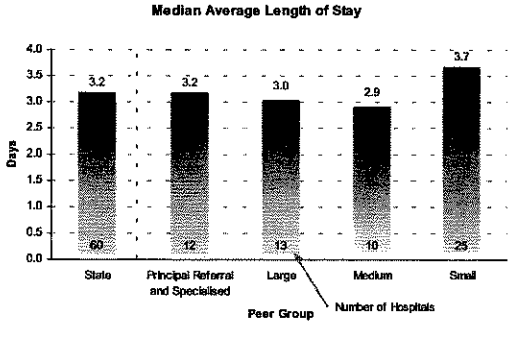
Length of stay
Length of stay is the period of time that a patient stayed in hospital. The average length of stay for all acute inpatient separations from hospital over a given period of time is calculated as

$$\frac{\text{Total occupied bed days}}{\text{Separations}}$$

The effective use of hospital beds can decrease the overall cost of providing health care. By ensuring that the best available treatment is delivered, the length of stay for each patient can be minimised.

This is achieved by reducing the complications of care such as infections which lead to longer stays in hospital and result in poorer health outcomes.

This indicator provides a measure of the efficient use of beds, where more efficient use (possibly indicated by a shorter length of stay) may enable increased access and use of beds.



Comments

- the graph shows that the state-wide length of stay across the 60 hospitals is 3.2 days.
- the small hospital group had the highest average length of stay while the medium hospital group had the lowest length of stay.

The state-wide length of stay is considerably shorter than the national average length of stay of 3.9 days for public acute hospitals. There was no change nationally from the previous year. Most of the reductions in average length of stay overall are a result of increasing proportions of patients undergoing day surgery, rather than reductions in length of stay for inpatient stays[23].

♦ Occupancy rates (bed day efficiency)

This measures the degree to which hospital beds are filled across hospitals.

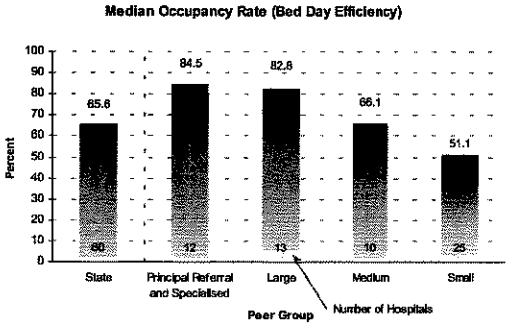
It provides an indication of where there may be higher or lower levels of occupancy, and thereby identifies where there might be 'under or over-servicing' or inappropriate discharges. At occupancy rates above 85 percent, risks of a bed crisis become discernible. At a rate above 90 percent the hospital system may be subject to regular bed crises[24].

Occupied bed day
Every day the patient is admitted is an occupied bed day.

On the other hand, depressed occupancy rates may cause excess hospital capacity which in turn may affect the financial viability of the hospital system[25].

Beds available
This is the number of beds (occupied or not) that are set up and can be staffed and occupied by admitted patients at relatively short notice. It does not include surgical tables, recovery trolleys, delivery beds or cots for neonates.

Occupancy rates may be maintained at an optimal level by varying the combination of patient numbers and bed numbers. Queensland Health is continually reviewing its policies and strategies for bed management to optimise the bed occupancy across the State and meet the needs of the public.



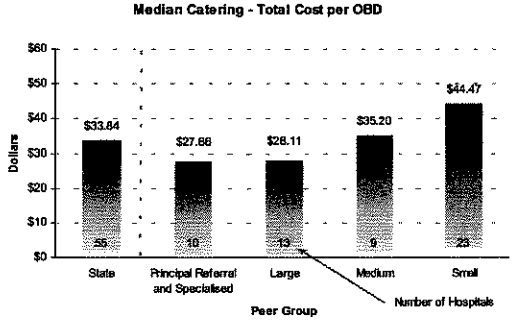
Comments

- this shows that the state-wide median occupancy rate across the 60 hospitals is 65.6 percent. The principal referral and specialised hospital group had the highest rate while the small hospital group had the lowest rate. This median is based on the middle point for all the hospitals and therefore is weighted more towards the rates for the small hospitals.
- the state mean occupancy rate for the 60 hospitals is higher than the median at 79.1 percent. This figure takes into account the greater proportion of activity which occurs in the principal referral and specialised and large hospital groups which represent approximately 83 percent of the available hospital beds.

Measures of cost

♦ Catering labour and non-labour costs

This provides a measure of the total cost of catering per occupied bed day, which may identify areas for improvement.



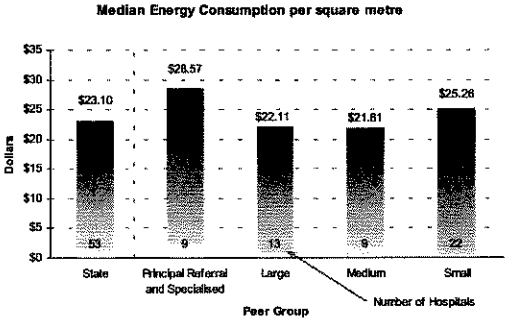
Comments

- this shows that, for the 55 hospitals for which data were available, the state-wide median catering cost per patient was $33.84.
- the principal referral and specialised hospital group had the lowest cost of $27.66 while the small hospital group had the highest cost of $44.47. This may be due to higher overhead costs relative to lower activity levels.
- the state mean for catering costs is lower than the median at $30.49. This takes into account the greater proportion of activity which occurs in the principal referral and specialised and large hospital groups (88% of occupied bed days) and the efficiencies in volume which those groups can achieve.

No national comparative data were available for this indicator.

♦ Energy expended per square metre

This provides a measure of energy efficiency and may identify areas of inefficient use.



Comments

- this shows that, for the 53 hospitals for which data were available, the state-wide median energy cost per square metre was $23.10.
- the principal referral and specialised hospital group had the highest cost of

$28.57 while the medium hospital group had the lowest cost of $21.81.

- the state mean for energy consumption costs is higher than the median at $26.63. This takes into account the greater proportion of activity which occurs in the principal referral and specialised hospital group and greater energy use in these large and technically complex hospitals.

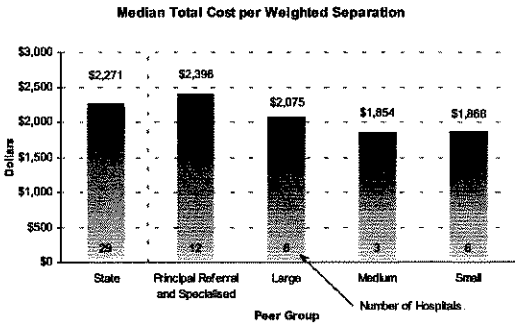
No national comparative data were available for this indicator.

♦ Total cost per weighted separation

This is the average total treatment cost of each weighted separation. It includes overhead costs as well as labour and consumables used in direct patient care.

It provides an estimate of the average cost associated with acute admitted patients. Variations in costs between hospitals may indicate that efficiency gains in the more expensive hospitals may be possible.

Weighted separation
This is a way of describing services by the amount of resource they use – the higher the weight the higher the level of resources used on average.



Comments

- this shows that for the 28 hospitals for which data were available, the state-wide median cost per weighted separation was $2,271.
- the principal referral and specialised hospital group had the highest cost of $2,396 while the medium hospital group had the lowest cost of $1,854.
- the statewide mean cost per weighted separation is higher than the median at $2,348. This figure takes into account the greater proportion of activity which occurs in the principal referral and specialised hospital group and the higher cost per weighted separation generated by this group compared with the other peer groups.

Queensland's total cost per weighted separation is approximately 91 percent of the national cost per weighted separation[26].

System integration and change

Health care services are constantly challenged by change brought on by:

- a rapid growth in technology and an increasing reliance on new techniques for diagnosis and treatment;
- increasing complexity of health care;
- a rapidly ageing population;
- better informed health care consumers with higher expectations of health services;
- the possibility of shortages of appropriately trained and skilled professionals in areas such as nursing and some medical specialties.

Health technology

Health technology covers a broad range of medical diagnostic and treatment technologies used in the delivery of health care eg. cardiac catheters used in the treatment of heart disease or bone densitometry imaging used in assessing bone mineral density.

Health care services need to position themselves appropriately to meet these challenges by ensuring that there are systems to allow and support change and that the current and future workforce has the necessary skills to manage change.

Many of these challenges have been documented in the *Smart State: Health 2020* documents that are available on the Queensland Health internet site:
http://www.health.qld.gov.au/Health2020/2020_directions.pdf

This quadrant report is the first attempt to examine how Queensland Health is managing system integration and change at a state-wide level. Indicators have been developed to measure a hospital's ability to:

- ensure the continuity of care of its patients;
- provide a health service based on skills and knowledge of its staff;
- provide strong infrastructure such as workforce, facilities and equipment so that the hospital can be innovative and flexible and respond to the changing community needs;
- provide uninterrupted, coordinated care across programs, practitioners and organisations, over time.

Indicators

To develop the indicators, two broad questions were asked.

1. How well placed are public hospitals to develop and implement new practices that meet future health care changes, demands and challenges? Indicators of this include:
   - **accreditation rates**
   - **workforce management**
   - **use of information**
   - **telehealth usage**
   - **benchmarking**
2. To what extent do major public hospitals integrate their services with other acute and community-based services? Indicators of this include:
   - **clinical pathways**
   - **facilitating continuity of care**

A survey instrument was forwarded to District Managers for completion in November 2001.

The response rate was 100 percent. (Indicators for this quadrant were applicable to 59 hospitals.) The results of this survey are detailed below.

Accreditation

Accreditation is a formal process undertaken by Queensland Health where an authorising body assesses a health care facility regarding its compliance with a set of standards.

Queensland Health requires all public health facilities to develop management systems for both clinical and non-clinical services that comply with endorsed quality system standards[27]. The two main quality system standards recommended by Queensland Health for hospital accreditation are:

- Evaluation and Quality Improvement Program (EQuIP) with Australian Council on Health Care Standards (ACHS) and
- Australian Health and Community Services Standards (AHCSS) with the Quality Improvement Council (QIC).

This indicator identifies the number of hospitals accredited by an organisation recommended by Queensland Health at 30 March 2002.

Number of facilities	59
Number of hospitals with full accreditation status on 30 March 2002	43
Accreditation with ACHS	34
Accreditation with QIC	9

11 small hospitals and 4 medium hospitals were partially accredited.

Workforce management

Strong links have been identified between the quality of services and a skilled workforce. The shortage of appropriately trained and skilled staff is an issue that has both a current and far reaching impact on the delivery of quality health services. There is a growing recognition of the importance of recruitment, retention and staff development due to the scarcity of health professionals. Two issues have been identified as high priority workforce management issues for Queensland Health.

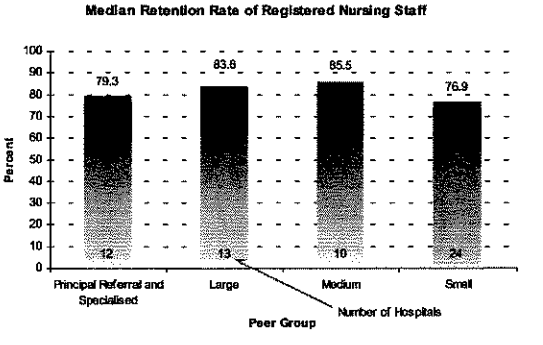
These are:

- turnover of staff
- age of staff.

These issues are of particular importance to the nursing workforce as it is the largest professional component in Queensland Health. The shortage of and difficulty in retaining nursing staff has been noted nationally and internationally. It is important for Queensland Health to retain skilled and experienced staff, rather than continually replace them with new graduates.

♦ Workforce - retention rate of registered nursing staff

This indicator measures what percentage of registered nursing staff was retained after one year at the hospital where they were working in the time period (excluding new graduates).
(Time period: Aug 2000–Aug 2001)



Note: These rates are derived from hospital level data and include both staff movements between hospitals as well as nursing staff lost to Queensland Health.

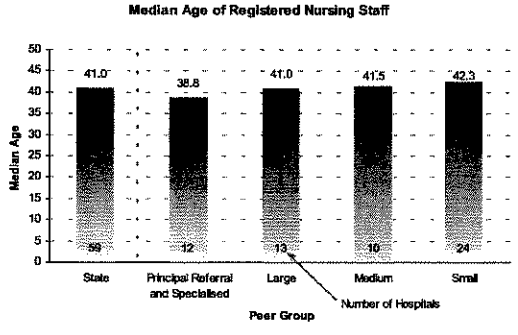
Comments

- the median retention rate for registered nursing staff after one year of service is similar for large and medium hospitals.

- two small hospitals (Chinchilla and Stanthorpe) and one medium hospital (Warwick) retained more than 90 percent of their registered nursing staff following one year of service compared to a principal referral & specialised hospital (Royal Children's Hospital) and a large hospital (Mackay Base) where the highest retention rate were 84 percent and 88.1 percent respectively.

♦ Workforce - median age of registered nursing staff

This indicator shows the median age of registered nursing staff (following one year of service) at August 2001.



Comments

- principal referral and specialised hospitals have the lowest median age of registered nursing staff and differ from the State median age by more than two years.
- large, medium and small hospitals have similar median ages of registered nursing staff.
- one principal referral and specialised and 3 small hospitals have a median age for registered nursing staff below 35.
- one small hospital had the highest median age of registered nursing staff of 51 years.

Improvement activities

Nursing website

Queensland Health has developed a nursing website: www.thinknursing.com. This website:

- promotes and markets nursing to encourage school students to consider nursing as a future career;
- provides an information resource for qualified nurses about options for future career development and progression;
- hosts an internet recruitment campaign to increase national and international exposure of vacant Queensland Health nursing positions with the aim of producing a larger pool of qualified candidates to fill nursing vacancies across the State.

Use of information

Effective communication and care planning between acute care facilities, primary care providers and community health workers will reduce duplication and fragmentation of services. Effective communication also improves working relationships across services and organisations[28]. To assist this, there is a need for supportive infrastructure and systems.

Electronic technology can:

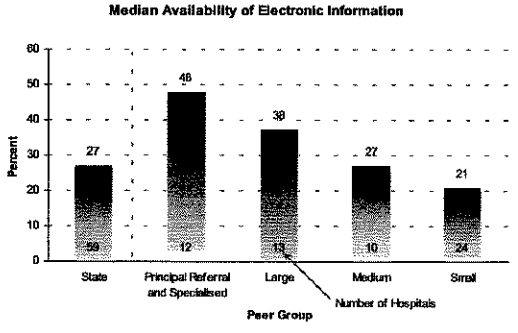
- assist timely communication
- improve the quality of patient records
- reduce the time it takes to receive diagnostic reports
- reduce the number of medication errors
- assist timely patient follow-up.

♦ Availability of electronic information

This indicator measures the availability of electronic information in the following areas:

- *patient registration and admission systems*
- *medical images (eg. x-rays, CT scans)*
- *reports of diagnostic imaging results*
- *diagnostic laboratory results*
- *transcribed reports*
- *pharmacy/drug profiles*
- *clinical pathways*
- *progress reports.*

Points were aggregated and reported as a percentage against the total possible score for this indicator.



Comments

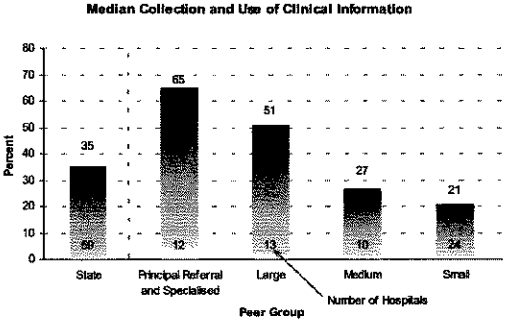
- the median for principal referral and specialised hospitals of 48 percent is higher than the median for large, medium and small hospitals and is considerably higher than the State median of 27 percent.
- one principal referral & specialised (The Townsville Hospital) and one large hospital (Logan Hospital) scored considerably higher than the other hospitals across the State for the availability of electronic information.
- the graph shows a wide spread of measures for this indicator across the peer groups. This availability depends upon the ability of staff to access and use electronic information and this ability is higher in the more complex environment of the principal referral and specialised hospital group. However, there is some scope to expand the access to, and skills in the use of electronic information systems in smaller hospitals.

♦ Collection and use of clinical information

This indicator measures the extent to which information is collected and used in the following areas:

- *unplanned return to operating theatre*
- *hospital acquired infection*
- *adverse drug reaction*
- *unplanned injury of organ during surgery*
- *unplanned transfer to intensive care unit*
- *unplanned readmission*
- *in hospital mortality*
- *hospital acquired injury*
- *functional status of rehabilitation and elderly patients*
- *complication rate*
- *proportion of day patients*
- *time between admission and surgery*
- *unplanned presentation to emergency department within 48 hours.*

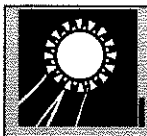
Points were aggregated and reported as a percentage against the total possible score for this indicator.



Comments

- principal referral and specialised hospitals scored significantly higher with two hospitals scoring above 80 percent (Royal Brisbane Hospital and Cairns Base Hospital).

- the highest score for large hospitals was Ipswich at 70 percent. The highest scoring medium hospital was Proserpine and Tully scored highest for small hospitals.
- the graph shows a wide spread of measures for this indicator across the peer groups. The collection and use of electronic information supports the more complex activities and environment of the principal referral and specialised hospital group.



Improvement activities

Clinical information system

Queensland Health has embarked on a Clinical Information System (CIS) Project. The vision for this project is to provide a patient-centric electronic health record across the continuum of care. Due to the size and scale of such a project, the implementation of the CIS will be incremental in nature. The first phase of the project will focus on the implementation of the following across Queensland Health acute hospitals:

- electronic results reporting (radiology and pathology)
- electronic ordering of radiology pathology and medications
- drug administration
- discharge summaries
- rules based decision support
- patient problem lists.

Subsequent phases will introduce more advanced clinical information systems such as clinical notes, care pathways and complex decision support and extend the implementation to non-acute facilities.

Telehealth usage

Telehealth makes health care available to a much wider section of the population and has a particular benefit for remote communities by reducing the effects of professional isolation[29]. It also allows for links with centres of excellence so that good clinical practice can be shared. It can provide access to standard clinical guidelines, evidence-based practice, case conferencing and remote clinical supervision[30].

Telehealth is the use of technology (eg. Videoconferencing) that enables clinical care to be provided to a patient who is geographically separated from the treating clinician. It can be used by all types of health care practitioners.

Queensland's health system is highly decentralised with large population centres outside the south-east corner of the State. To address this challenge, there are 240 Queensland Health sites that have access to telehealth facilities.

Current usage rates for videoconferencing are approximately 2,000 per month. Using this technology, 200-300 patients per month currently receive health services within their own community, without the need to travel. Telehealth services include direct consultation with health care providers and the provision of second opinion and support services, to assist local health service providers with complex cases.

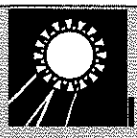
The telehealth network is also used extensively for staff educational activities across the State.

♦ Telehealth usage

To measure the extent to which telehealth is used by public hospitals in this study, each hospital was asked if they provided or received telehealth in a range of clinical areas. One point was awarded for each telehealth clinical application provided or received. These points were aggregated and expressed as a percentage of the total possible score.

It was found that Telehealth usage is low across the State.

- three hospitals scored beween 40 and 50 percent in telehealth usage. Of these hospitals, 2 were medium and 1 was a large hospital. The remaining hospitals scored below 20 percent.
- eleven hospitals reported no telehealth usage at all.



Improvement activities

Telehealth

A Queensland Health project is working to establish a system, which makes the use of telehealth easier so that it is a feasible and practical means for delivering health services.

The program is also developing training modules for clinicians to improve their skills in its use. A range of technical and clinical training modules has been developed and trialed and these are being integrated into the mainstream training which is currently being offered by the statewide telehealth services.

Clinical pathways

Clinical pathways are standard, evidence-based multi-disciplinary management plans, which identify an appropriate sequence of treatment, timeframes, milestones and expected outcomes for a particular patient group.

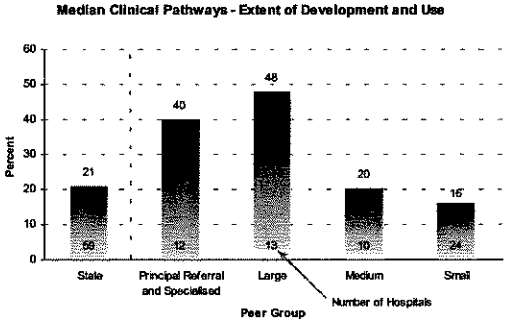
'Multi-disciplinary' refers to the involvement of all the different professions contributing to a patient's care, working together with the patient in the planning and delivery of that care.

Internationally, clinical pathways have been used successfully to improve quality of care by increasing team communication and patient satisfaction. Efficiency gains have also been achieved by decreasing lengths of stay.

♦ Clinical Pathways – extent of development and use.

This indicator measures the extent of clinical pathway development and use in the areas of:

- *total hip replacement*
- *total knee replacement*
- *fractured neck of femur*
- *colorectal carcinoma*
- *caesarean section*
- *small for gestational age babies*
- *perinatal mortality*
- *hysterectomy*
- *asthma*
- *pneumonia*
- *chronic obstructive pulmonary disease*
- *stroke*
- *heart failure*
- *heart attack*



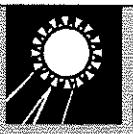
Comments

- overall, principal referral and specialised and large hospitals scored higher in clinical pathway development and use than medium and small hospitals.
- two small hospitals show outstanding achievements in the use of clinical pathways though they were not necessarily developed locally. These are the St George and Yeppoon hospitals.
- the graph shows a wide spread of measures for this indicator across the

peer groups. Clinical pathways are developed for clinical activities involving high volumes of patients with particular conditions. The principal referral and specialised hospital group therefore shows a higher score for their development and use than smaller hospitals. These smaller hospitals do not generally have the levels of activity to be able to develop clinical pathways though they can use pathways for patients along a continuum of care.

Use of clinical pathways in particular areas (medical, surgical, and obstetrics and gynaecology)

- across the State, clinical pathways were shown to be developed and used at similar levels in selected medical and obstetric and gynaecological areas.
- both principal referral and specialised and large hospitals show a higher level of development and use of clinical pathways in selected surgical areas as compared to the other areas. However, pathways were least developed in some surgical areas for medium and small hospitals.
- medium hospitals scored highest in selected medical areas compared to the other areas and small hospitals scored highest in selected obstetric and gynaecological areas.



Improvement activities

Clinical pathways

Clinical pathways have been in use in a variety of forms for many years. They involve the use of clinical evidence, the coordination of care and continuously monitoring and responding to changing needs of patients and new treatment methods.

Queensland Health is conducting a program to ensure a consistent and coordinated approach to the development, implementation and evaluation of clinical pathways. This aims at minimising any duplication of effort in pathway development and reducing unnecessary variation in clinical practice.

The program has developed pathways for total hip replacement, total knee replacement and appendectomy, as well as a pathway for a number of day surgery procedures.

Managing organisational change

The development of new ways of delivering health care involves significant changes to work practices. Queensland Health has developed a series of guides to assist the management of the change processes. The guides provide a step by step process to ensure all the key elements of change, including evaluation of the impact of change, are addressed. The guides include:

- *managing organisational change*
- *tools and processes for implementing organisational change*
- *supporting employees through organisational change*
- *changing models of care framework.*

They are available on the Queensland Health internet web site at: http://www.health.qld.gov.au

Benchmarking

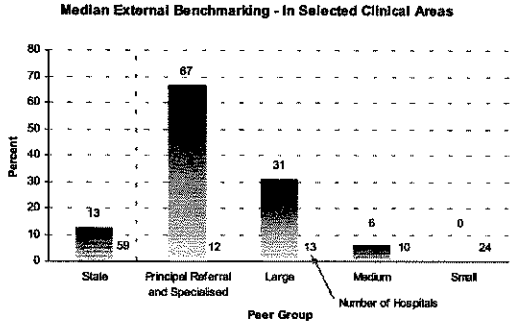
Benchmarking provides a 'yardstick' of performance and can be a powerful diagnostic tool for identifying where improvements are possible[31]. It is a process which enables the hospital to examine its care over time, and/or to compare its care with peers (comparable organisations) or with 'best practice'.

The formation of hospital benchmarking roundtables and consortia is also an indication of commitment from hospitals towards benchmarking. These forums provide an opportunity to look at results across hospitals, discuss what factors may account for any differences and take any steps necessary to improve care.

♦ External benchmarking in selected areas

This indicator measures the extent to which the hospital engages in external benchmarking activities in selected clinical areas.

The score represents the number of clinical areas where there was benchmarking activity from 17 selected areas. This score is then expressed as a percentage of the total possible score.



Comments

- all principal referral and specialised hospitals participated in some external benchmarking activities and half achieved a score of more than 66 percent.
- half the large hospitals achieved a score of more than 30 percent.
- two large, five medium and nineteen small hospitals do not show any activity in external benchmarking activities.
- the Royal Brisbane, Gold Coast, Caboolture and Proserpine hospitals all achieved the maximum possible score.
- the graph shows a wide spread of measures for this indicator across the peer groups. Benchmarking is well established for clinical activities involving high volumes of patients with particular conditions. The principal referral and specialised hospital group therefore shows a higher score for external benchmarking than the smaller hospitals. These small hospitals do not have the levels of activity needed for benchmarking in the selected conditions.

Facilitating continuity of care

Continuity of care

This refers to the provision of continuous health care of patients across the 'boundaries' between community and hospital care, between public and private care and across different service providers.

Continuity of care is expected to improve health outcomes because relevant clinical information is shared among all practitioners caring for the patient. It is shared across and between institutions and across and between care settings.

Continuity of care is linked with improved health outcomes and shows improved preventative care as well as early identification of patient's psychosocial problems. Other benefits include fewer emergency hospitalisations, fewer hospitalisations in general; shorter lengths of stay and better patient understanding of and satisfaction with their care[32].

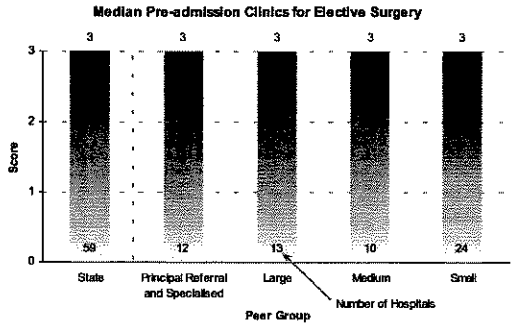
Continuity of care requires a range of processes, some of which include:

- admission processes for elective surgery
- provision of discharge summaries to general practitioners
- use of electronic discharge summaries
- shared care for maternity care
- referrals to cardiac rehabilitation.

♦ Admission process - use of pre-admission clinic for elective surgery

This indicator measures how well hospitals use pre-admission clinics for elective surgery.

The total possible score was 5 representing the availability of pre-admission clinics, the identification of patients requiring referral and how often appropriate patients were referred.



Comments

- the median for all peer groups was the same across the State. Most hospitals use a pre-admission clinic and processes for elective surgery. Only one hospital each in principal referral and specialised, medium and small peer groups did not have a preadmission clinic for elective surgery as compared to large hospitals, where all had a preadmission clinic for elective surgery.

Variation in performance was minimal. This indicator was not applicable to five small hospitals which did not provide elective surgery.

♦ Provision of discharge summaries to general practitioners

This indicator measures how committed hospitals are to the provision of discharge summaries to local general practitioners. Diabetes related conditions were used as an example.

The scores measured the presence of and compliance with policies regarding the provision of discharge summaries to general practitioners.

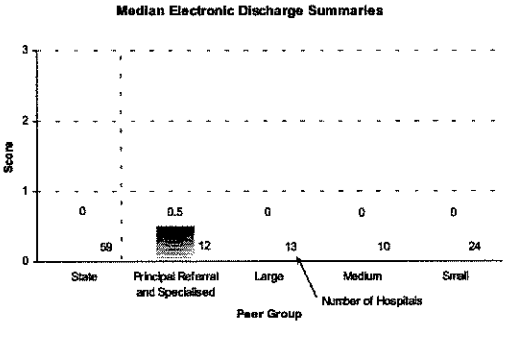
Across the State, more than half the hospitals provided discharge summaries for diabetes related conditions. Of those that did not, six were large hospitals and eight were small hospitals.

This indicator was not applicable to three small hospitals.

♦ Provision of electronic discharge summaries to general practitioners.

This indicator measures how often hospitals provided electronic discharge summaries to local general practitioners within 24 hours. This indicator was not restricted to diabetes related conditions.

The scores range from three representing 'nearly all the time' to zero representing 'not provided'.



Comments

- three principal referral and specialised hospitals provide electronic discharge summaries to local general practitioners within 24 hours of

discharge. All other hospitals' scores were notably low indicating very limited implementation of electronic provision.

♦ Shared ante and post natal care

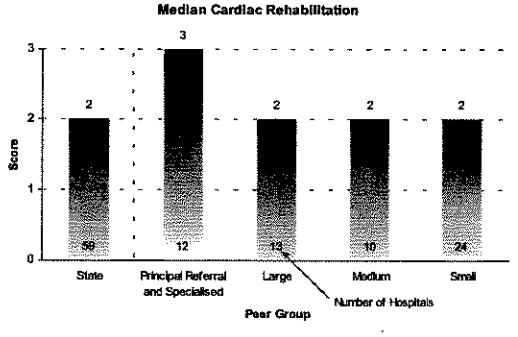
This indicator measures to what extent hospitals are committed to sharing antenatal and postnatal care with local general practitioners.

It was found that all principal referral and specialised hospitals have a formal shared care arrangement in maternity care with their local general practitioners. Three large, one medium and seven small hospitals do not have such arrangements.

This indicator is not applicable to hospitals which do not provide maternity services.

♦ Cardiac rehabilitation

This indicator measures how often hospitals refer eligible patients to comprehensive cardiac rehabilitation.



Comments

- the majority of hospitals with access to cardiac rehabilitation services referred most of their patients to these services.

Improvement activities
State highlights

Service integration workshops
'Bringing Partners together'

Integration of services means all types and levels of service working together to provide good health care. It involves good communication with patients and each other and good admission and discharge processes that ensure care is planned and delivered in a coordinated way. This approach identifies the patient as the centre of the process.

This philosophy recognises that improving the health status of Queenslanders should be a partnership between Queensland Health, other health providers and the Queensland community.

Queensland Health and the Mater University of Queensland Centre for General Practice & Primary Health Care are conducting integration workshops 'Bringing Partners Together'. These bring together Queensland Health staff, non-government health providers and general practitioners to work towards improving their continuity of care. Through these workshops, Queensland Health is seeking practical ways to improve the process of service integration and overcome barriers that currently exist that prevent services working together.

Glossary of terms

Comorbidity	Diseases(s) that coexist(s) in a patient in addition to the principal condition that is the subject of treatment.
Complication	An adverse patient event related to medical intervention, especially an event that is an expected consequence of or that sometimes occurs in relation to the patient's disease and its treatment.
Diagnosis	The process of categorising a patient or deciding the nature of the disease based on the patient's characteristics, symptoms, signs and signals.
Efficiency	The production of maximum output for any given set of inputs. Alternatively, using the minimum inputs for the required service.
Mean (Average)	A measure of central tendency which is commonly referred to as the average. It is calculated by the sum of the observations divided by the number of observations.
Median	A measure of central tendency. The simplest division of a set of measurements is in two parts – the lower and the upper half. The point on the scale that divides the group in this way is called the 'median'.
Morbidity	Any departure, subjective or objective, from a state of physiological or psychological well-being.
Mortality	Loss of life or number of deaths from a particular cause.
Observed rate	The rate at which the event that is being measured actually occurs during the study period.
Private patient	An eligible person who elects to be treated as a private patient and elects to be responsible for paying fees.
Public Patient	An eligible person who receives or elects to receive public hospital services free of charge.
Risk Adjustment	A statistical procedure that 'adjusts' for the association between one or more risk factors and a performance measure.

Bibliography

[1] Australian Bureau of Statistics, 2001 Census of Population and Housing, [Online] Available at: http://www.abs.gov.au/Ausstats/ABS%40.nsf/e8ae5488b598839cca25682000131612/c34d5460181b7ea3ca256bda007553c7!OpenDocument

[2]Strong, K., Trickett, P., Titulaer, I., Bhatia, K. 1998, *Health in rural and remote Australia.* Australian Institute of Health and Welfare (AIHW), Canberra [Online] Available at: http://www.aihw.gov.au/publications/health/hrra/index.html

[3] Commonwealth Department of Health and Aged Care 2001, *Measuring Remoteness: Accessibility/Remoteness Index of Australia (ARIA),* Revised Edition, Occasional Papers: New Series, Number 14, [Online] Available at: http://www.health.gov.au/pubs/hfsocc/ocpanew14a.htm

[4] Health Canada 2000, *Quest for Quality in Canadian Health Care: Continuous Quality Improvement Part 5 Indicators.*

[5] Canadian Institute for Health Information 2001, *Hospital Report 2001:Acute Care.*[Online] Available at: http://secure.cihi.ca/hreports/toc.shtml

[6] National Health Performance Committee (NHPC) 2001, *National Health Performance Framework Report*, Queensland Health, Brisbane.

[7]Australian Institute of Health and Welfare (AIHW), 2001, Cardiovascular Disease, [Online] Available at: http://www.aihw.gov.au/publications/cvd/hsvd01/hsvd01-c03.pdf

[8] Lip GYH, Gibbs CR. Anticoagulation for heart failure in sinus rhythm (Cochrane Review). In: *The Cochrane Library,* Issue 2, 2002. Oxford: Update Software

[9] Steering Committee for the Review of Commonwealth/State Service Provision 2002, *Report on government Services 2002, AusInfo, Canberra.*, p194.

[10] Steering Committee for the Review of Commonwealth/State Service Provision 2002, *Report on government Services 2002, AusInfo, Canberra.*, p 234.

[11] Enkins, M., Keirse, M., Renfrew, M., and Neilson, J. 1995, *A Guide to Effective Care in Pregnancy and Childbirth,* Oxford University Press, Oxford, p318.

[12] Agency for Healthcare Research and Quality, 2001, *Definitions of Quality Indicators, Version 1.3,* (Healthcare Cost & Utilization Project (HCUP), US Department of Health and Human Services, Archive: Nov 2001, p13. [Online] Available at: http://www.ahcpr.gov/downloads/pub/hcupqi/chap4txt.pdf

[13] Enkins, M., Keirse, M., Renfrew, M., and Neilson, J. 1995, *A Guide to Effective Care in Pregnancy and Childbirth,* Oxford University Press, Oxford, p 297, 301, 182.

[14] Enkins, M., Keirse, M., Renfrew, M., and Neilson, J. 1995, A Guide to Effective Care in Pregnancy and Childbirth, Oxford University Press, Oxford, p231, 234.

[15] NSW Health Department 1996, *Report From the Northern Sydney Area Fractured Neck of Femur Health Outcomes Project: Prevention, Treatment and Rehabilitation of Fractured Neck of Femur - Summary, December 1996.*

[16] Australian Institute of Health and Welfare (AIHW) 2001. *Australian hospital statistics 1999–00.* AIHW cat. no. HSE 14. Canberra: AIHW (Health Services Series no. 17), p115, 119.

[17] Mathers, C., Vos, T., Stevenson, C. 1999, *The burden of disease and injury in Australia.* Australian Institute of Health and Welfare (AIHW) cat. no. PHE 17. Canberra, [Online] Available at: http://www.aihw.gov.au/publications/health/bdia/index.html.

[18] Queensland Health 2000, *Health Outcomes Plan - Asthma 2001 - 2006,* http://www.health.qld.gov.au/hop/asthma_hop2001.pdf.

[19] deLooper, M. and Bhatia, K. 2001, *Australian Health Trends 2001,* Australian Institute of Health and Welfare (AIHW) p51, [Online] Available at: http://www.aihw.gov.au/publications/phe/aht01/index.html.

[20] Scottish Intercollegiate Guidelines Network 1997, *Colorectal Cancer: A National Clinical Guideline Recommended for Use in Scotland,* Publication No. 16, [Online] Available at: http://www.sign.ac.uk/pdf/sign16.pdf.

[21] deLooper, M. and Bhatia, K. 2001, *Australian Health Trends 2001,* Australian Institute of Health and Welfare (AIHW) p66, [Online] Available at: http://www.aihw.gov.au/publications/phe/aht01/index.html.

[22] Australian Institute of Health and Welfare (AIHW) 2001, *Australian Hospital Statistics 1999-2000,* p48, [Online] Available at: http://www.aihw.gov.au/publications/hse/ahs99-00/index.html.

[23] Australian Institute of Health and Welfare (AIHW) 2001, *Australian Hospital Statistics 1999-2000,* p44, [Online] Available at: http://www.aihw.gov.au/publications/hse/ahs99-00/index.html.

[24] Bagust, A., Place, M., Posnett, J.W. 1999, 'Dynamics of bed use in accommodating emergency admissions: stochastic simulation model', *British Medical Journal,* 319, pp155-158.

[25] Hilsenrath, P. E., Chien, R.C., Rohrer, J.E. 1991, 'Implementing Essential Access Community Hospital's (EACHs) on a Statewide Basis: A Preliminary Analysis', *The Journal of Rural Health,* 7(5), pp618-629.

[26] Commonwealth Department of Health and Aged Care, National Hospital Cost Data Collection, *Cost Report: Round 4 (1999-2000),* p33. [Online] Available at: http://www.health.gov.au/casemix/costing/fc_r4.htm.

[27] Queensland Health 2000, *Strategic Plan for Quality: Quality Improvement and Enhancement Program 1999 - 2004,*[Online] Available at: http://www.health.qld.gov.au/quality/home.htm.

[28] Ovretveit, J. 1998, *Integrated Care - Development Issues from an International Perspective,* Healthcare Review, Vol 2 No5, [Online] Available at: http://www.enigma.co.nz/hcro/website/index.cfm?fuseaction=articledisplay&FeatureID=29.

[29] Hornsby, D., Blignault, I. and Kennedy, C. 2000, *Telehealth in Profile - Volume 2: Key Issues and Recommendations from Telehealth Evaluations in Queensland Health.* Queensland Telehealth Network, [Online] Available at: http://www.nqrhtu.org.au/qtn.htm.

[30] Victorian Department of Human Services (Patient Management Task Force) 2001, *A Ten-Point Plan for the Future - Paper No.8,* [Online] Available at: http://www.dhs.vic.gov.au/ahs/archive/patman/patman1.htm#papers.

[31] Accounts Commission for Scotland 1999, *Measuring Up To The Best: A Manager's Guide to Benchmarking,* [Online] Available at: http://www.audit-Scotland.gov.uk/publications/pdf/98msu_02.pdf.

[32] Freeman, G., Shepperd, S., Robinson, I., Ehrich, K., Richards, S., Pitman, P. and Sand, H. 2001, *Continuity of Care – a scoping exercise,* National Co-ordinating Centre for NHS Service Delivery and Organisation R&D Programme (NCCSDO), [Online] Available at: http://www.sdo.lshtm.ac.uk/pdf/coc_scopingexercise_report.pdf