

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. In response to these 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 plan for the public sector health services in Queensland – the *Smart State: Health 2020*.

Words added

As a 'learning organisation' Queensland Health is committed to a process of continuously monitoring its performance and finding ways to improve that performance. It is acknowledged that an essential part of improving services is to develop a way of measuring quality and safety and to apply this method across the system. While Queensland Health measures its performance in many individual areas, no one indicator can adequately represent overall quality of health care services.

Paragraph added

Words removed

Queensland Health has developed a measurement method which encompasses a number of areas essential to the overall quality and safety of care. The process allows comparisons to be made between hospitals and over time. The first phase of this program has developed measurements and comparisons for hospital inpatient services.

Reworded

This report on phase one has been prepared for the public of Queensland. It provides information about Queensland Health hospital services, how they are being measured and the results of these measurements. It also describes a range of related improvement activities and programs being undertaken by Queensland Health.

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 2002

Indicators that showed statistically significant differences in outcomes for patients who were admitted to public hospitals as either 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.

Patient Satisfaction

The results showed that 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 included:

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

Efficiency

The indicator results are presented to show comparisons between the peer group medians and the median for the study

cohort as a whole (shown as 'State' in the graphs). Results showed that:

- 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 possibly because of the economies of scale to be achieved in larger hospitals.

System Integration and Change

The indicator results are presented to show comparisons between the peer group medians and the median for the study cohort as a whole (shown as 'State' in the graphs). Results showed that:

- There was more widespread availability, collection and use of electronic information to support clinical activities in the Principal Referral and Specialised and Large hospital groups. This decreases with the decreasing size of the hospitals.
- 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.
- The extent of external benchmarking was highest in the Principal Referral and Specialised hospitals and this activity decreased with the decreasing size of hospitals.



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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.

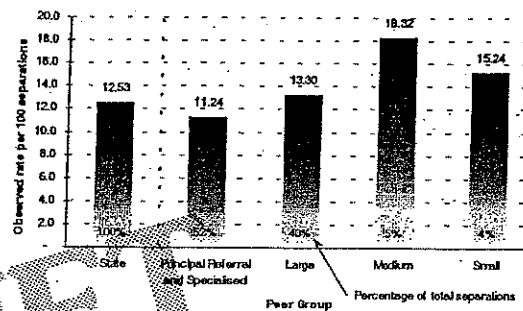
Acute Myocardial Infarction (AMI)

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.

Mean AMI in-hospital Mortality Rate



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.

- There was no statistically significant difference between the results for hospitals with a cardiologist or a general physician specialist in relation to mortality. However, hospitals with a general practitioner as the admitting physician had a 96 percent higher chance of death occurring compared to those hospitals with a cardiologist.

Removed

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

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NOTE: 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. Though thrombolysis treatment is available throughout Queensland the geographical distances patients need to travel and the delay in reaching medical help may influence the outcome of their care.

Proportionately fewer patients can access angioplasty as this service is only available in three Principal Referral and Specialised hospitals.



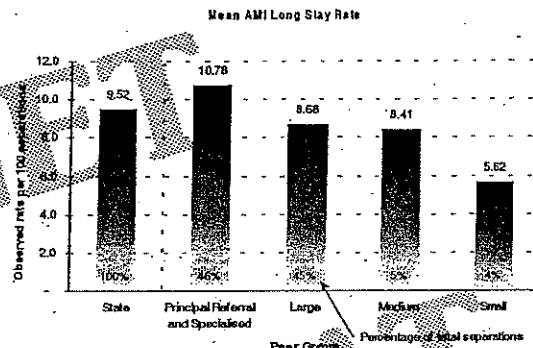
Improvement Activities

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

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.
- Patients of general physician specialists were 33 percent less likely to have a long stay compared with patients of cardiologists. Patients of general practitioners were less than half as likely to have a long stay as patients of cardiologists.
- 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.

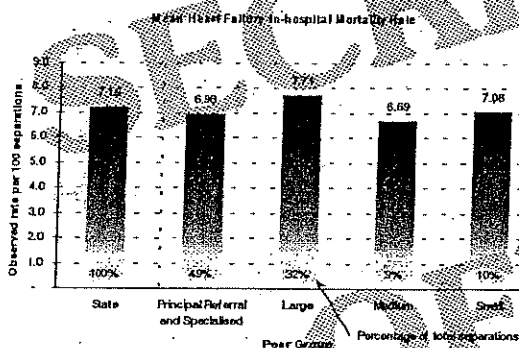
Queensland's average length of stay for AMI was 2.8 percent lower than the national average (Australia excluding Queensland).

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.

♦ 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

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).

- There was no statistically significant difference between the results for hospitals with a cardiologist or a general physician specialist in relation to in-hospital mortality. However, hospitals with a general practitioner as the admitting physician had a 59 percent higher probability of death occurring compared to those hospitals with a cardiologist.
- 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.

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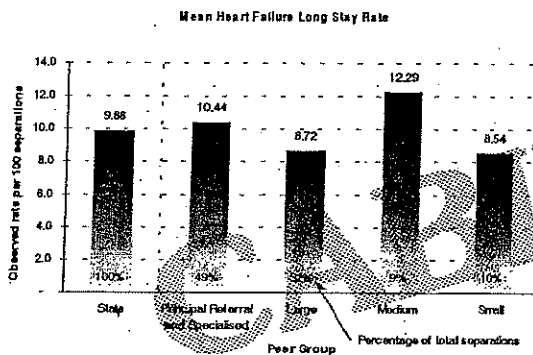
Queensland's in-hospital mortality for heart failure was marginally lower than the national average (Australia excluding Queensland).

NOTE: Chronic heart failure is associated with high morbidity rates and annual mortality rates of greater than 30% in patients with severe symptoms⁸. 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. 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 other factors accounting for comparatively higher mortality rates noted in smaller hospitals staffed by general practitioners.

Removed

♦ 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

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 by a general physician specialist were 25 percent less likely to have a long stay for heart failure than patients who were admitted by a cardiologist. However, there was no significant variation in the chances of having a long stay between patients who were admitted by a general practitioner compared to those admitted by a cardiologist.
- 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.

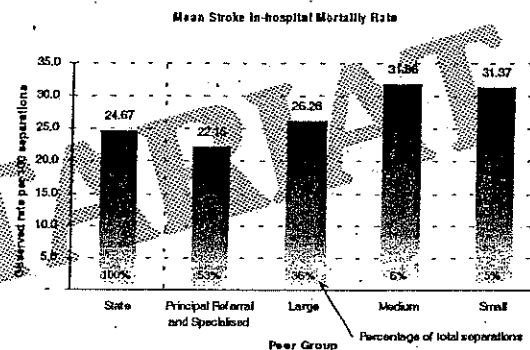
Queensland's average length of stay for heart failure was 8.6 percent lower than the national average (Australia excluding Queensland).

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

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.

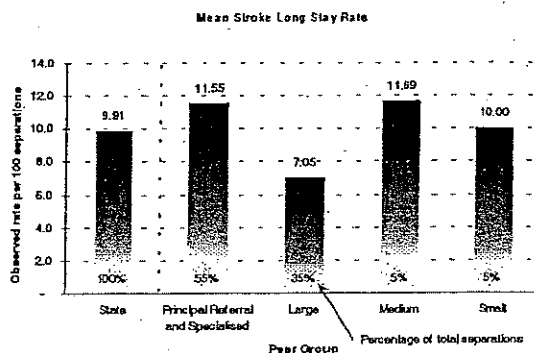
Queensland's in-hospital mortality for stroke was higher than the national average (Australia excluding Queensland).

However, Queensland patients admitted for stroke are less likely to be discharged to a nursing home than those in the rest of Australia and therefore have 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.

NOTE: 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 CT brain scanning as soon as possible (preferably within 48 hours). This facility is not available in smaller, rural and remote hospitals. 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.

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

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.

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



Improvement Activities Stroke Unit

The Royal Brisbane Hospital's Stroke Unit commenced services in 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. In collaboration with the University of Queensland's Centre for Magnetic Resonance and using the new research MRI scanner, studies of acute stroke pathophysiology using advanced MRI techniques are underway.

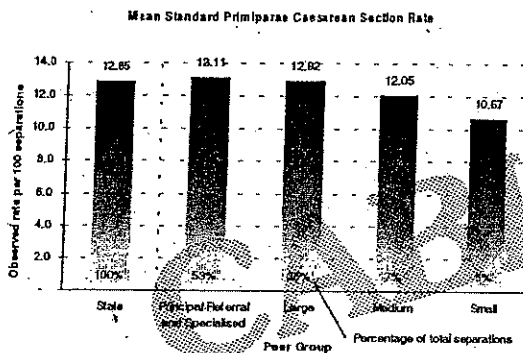
The Unit assists physicians in regional, rural and remote centres to manage their patients through an outreach programme. This will be extended over the next 12 months using telehealth technology to allow patients outside Brisbane access to the Stroke Unit's expertise.



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♦ Standard Primiparae - Caesarean Section Rate

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



Comments

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.

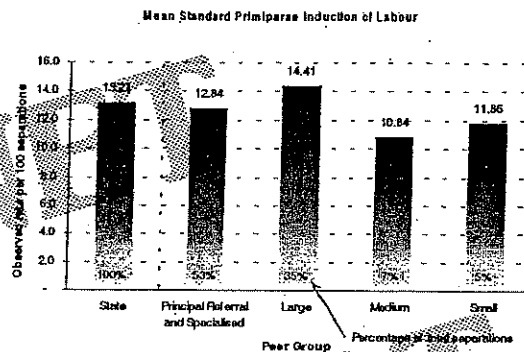
Queensland's caesarean section rate for all births was 6.8 percent higher than the national average.

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 complications¹³.

♦ Standard Primiparae - Induction Rate

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



Comments

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.

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

♦ 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.

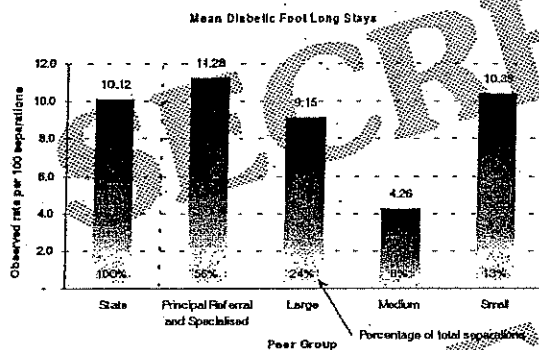
difference in the chances of an amputation being performed at Large hospitals in comparison to Principal Referral and Specialised hospitals.

- 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.

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.

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

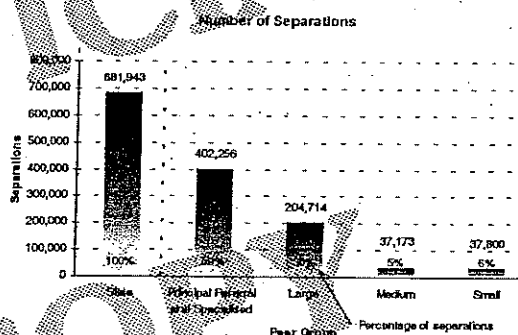
The number of separations reflects the total number of patients completing an episode of care.

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 (AHPW).

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.

words added



Comments

- Acute public hospital separations for Queensland represented 18.3 percent of the total number of separations nationally in 1999-00²². Queensland ranked third after New South Wales and Victoria for total public hospital separations.

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.

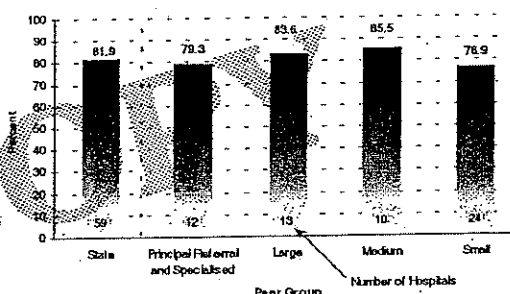
Despite the problem of excessive turnover of nursing staff, the average age of nursing staff is increasing and there is a growing risk that a large number will reach retirement age within a short period of time which will result in the bulk loss of expertise.

♦ Workforce - Retention rate of registered nursing staff

This indicator measures what percentage of registered nursing staff was retained after one year of service (excluding new graduates).

(Time period: Aug 2000–Aug 2001)

Median Retention Rate of Registered Nursing Staff



NOTE: These rates are derived from hospital level data, so represent nursing staff movements between hospitals and not necessarily nursing staff lost to Queensland Health.