

The growing hospital burden



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- In 2015–16 there were 2.3 million admissions of Queensland residents to public and private hospitals.
- About 1 in 5 Queenslanders was admitted to a hospital at least once in 2015–16.
- The number of admissions increased by an average of 85,000 per year over the past decade.
- About half (48%) of the increase in admissions was due to increasing rates of hospitalisation, 40% to population growth and 12% to ageing.
- Based on current trends, the average number of hospitalisations is projected to reach 3.7 million by 2026–27 (67% increase over a decade). Apart from population growth, contributing factors are:
 - increasingly higher rates of admission for middle to older age groups
 - greater growth in two leading broad cause groups—admissions for investigations, procedures, tests and for symptoms and signs
 - better access to hospital services—appears to be a contributing factor in the increase over the past decade.
- About 15% of hospitalisations were associated with preventable risk factors such as overweight and obesity, high blood pressure and smoking.
- Hospitalisations for lifestyle related conditions such as coronary heart disease, stroke, lung and other cancers, and chronic respiratory disease have decreased or remained steady in many HHSs. In contrast, there has been an increase in hospitalisations for all causes in all HHSs.
- The crude hospitalisation rate for Indigenous Queenslanders increased by 51% over a decade in contrast to a 29% increase for non-Indigenous Queenslanders.
- About 8% of hospitalisations could theoretically have been avoided with timely treatment in an ambulatory setting, that is, they were potentially preventable hospitalisations (PPHs). More than half were for young children and older people.
- Admission rates for children increased statewide by 14% over a decade, largely because of rate increase in the larger HHSs (Metro South, Metro North, Gold Coast and Sunshine Coast).

Headline hospital statistics

In 2015–16 in Queensland there were:

- 122 public hospitals (four were public psychiatric hospitals) and 109 private hospitals (53 free-standing day hospitals and 56 other private hospitals)⁷⁴
- 2,365,682 hospital admissions (includes interstate and other visitors) where 55% (1,293,125) were to public hospitals and 62% (1,455,010) were same-day admissions⁷⁵
- 5,373,469 non-admitted patient service events provided by 118 public hospitals⁷⁶
- The average length of stay was 2.7 days. Excluding same day admissions, this rises to 5.5 days.

In 2016–17, there were 1,457,083 presentations to the 27 public emergency departments in Queensland.⁷⁷

In this chapter, hospitalisation data is derived from Queensland Hospital Admitted Patient Data Collection unless otherwise noted.

In 2015–16, 1.0 million Queenslanders were admitted to hospital on at least one occasion,

1 in 5 or **22%**
of the population.

Trends in admissions and underlying pressures

The number of admissions to hospitals is increasing each year—from 1.2 million in 2002–03 to 2.3 million in 2015–16 (Queensland residents). Over the past 10 years there has been a 59% increase in the number of admissions (an increase of 85,000 more admissions each year on average). The crude rate increased by 30%, and after adjusting for age, by 23%.

Over the past 10 years, for admitted patients, there has

been a downward trend in length of stay, with decline evident in all HHSs. Decreasing length of stay impacts on the relative increase in total patient days. These measures should also be assessed when considering trends in admission rates.

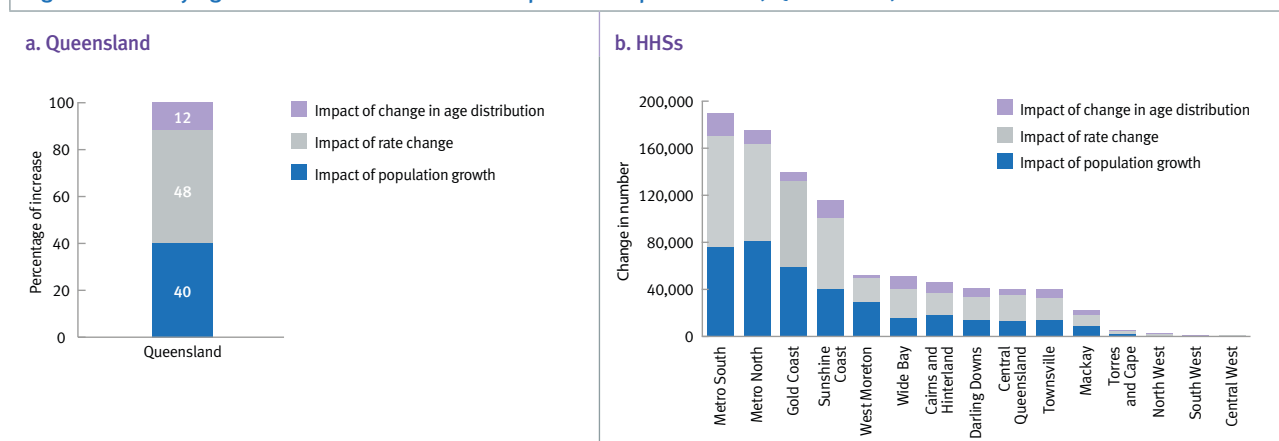
In 2015–16, there were about 2.3 million admissions of Queensland residents, representing 1.0 million unique individual patients. Considering the population of 4.8 million, this approximates to 22% or one in every five Queenslanders being admitted to a hospital (public or private, excluding public psychiatric) at least once in that year. The proportion admitted increases with age, from 11% of children aged 0–14 years, rising to 24% of 45–64 year olds, 51% of 75–84 year olds and 58% of those aged 85 years and older. In all age groups except those aged 15–29 years there has been a slow steady increase in the proportion of people being admitted to hospital each year—an overall increase of 14% over the past decade.

The dominant driver of the increase in hospital admissions in Queensland in the decade up to 2015–16 was increasing rates of admission, independent of population growth or ageing (Figure 6a). This factor, that is, more people being admitted to a hospital more often, accounted for almost half the increase (48%), with population growth accounting for 40%, and ageing 12%.

The pattern of change varied markedly across HHSs. Excluding the four very small HHSs which show relatively volatile patterns, there were some key differences (Figure 6b):

- Population growth was the key driver in West Moreton, accounting for 56% of the increase.
- Admission rate increase was the leading factor in Torres and Cape, Central Queensland, Gold Coast and Sunshine Coast, accounting for over 50% of the increase in these four HHSs.
- Ageing had a bigger impact in Wide Bay than in other HHSs (accounting for 23% of growth).

Figure 6: Underlying drivers of increase in admitted patient hospitalisations, Queensland, 2006–07 to 2015–16



Leading causes for admitted patients

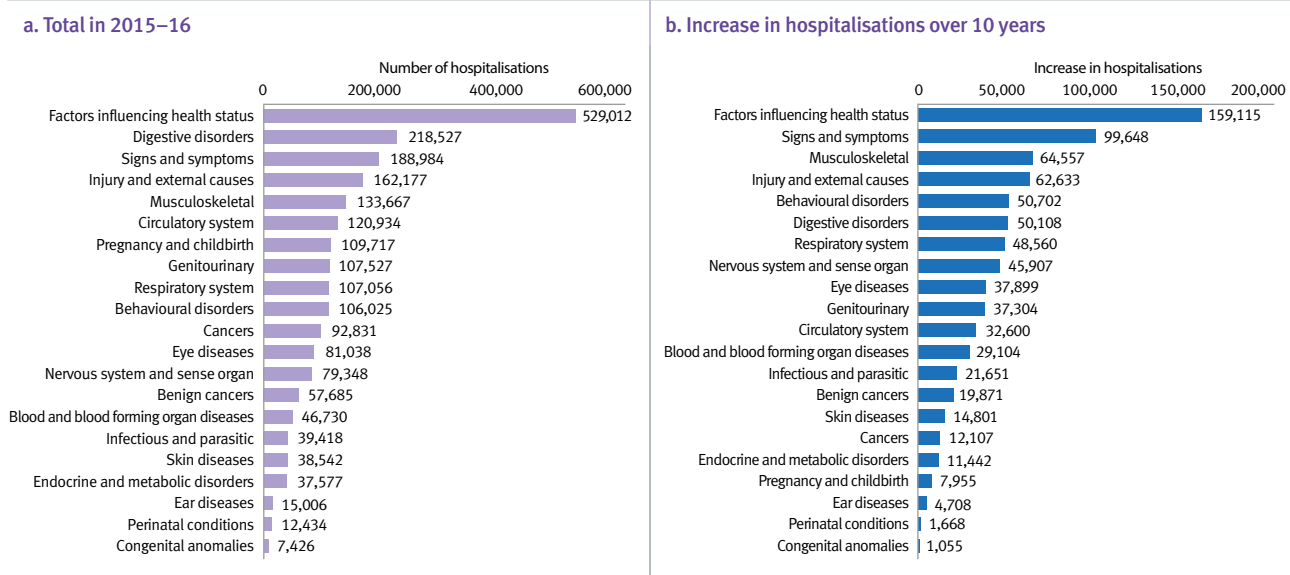
In 2015–16, based on principal diagnosis and using the ICD classification of causes⁷⁸:

- The leading broad cause of admissions was for ‘factors associated with health status’, that is, investigations, treatments and procedures which accounted for 1 in 4 or about 530,000 admissions. hospitalisations in 2015–16 (Figure 7a,c). The leading specific cause within this broad group was renal dialysis, typified by a relatively large number of hospitalisations for a small number of people.
- Digestive system diseases accounted for 219,000 admissions (1 in 10 of total), with dental conditions a leading specific cause.
- Admissions associated with ‘signs and symptoms’ such as chest pain, fainting, and other symptoms accounted for about 189,000 hospitalisations or one-twelfth of total.

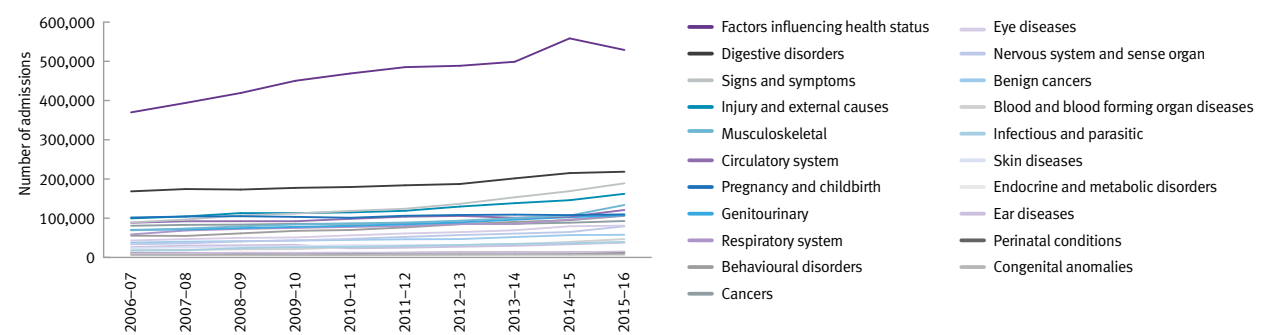
The broad causes that have increased the most over the past 10 years were (Figure 7b,c):

- admissions for ‘factors associated with health status’, that is, investigations, treatments and procedures (20% of total increase)
- symptoms and signs (12%)
- musculoskeletal conditions (8%)
- injury (8%).

Figure 7: Causes of admitted patient hospitalisations, Queensland



c. Number of hospitalisations, by year and cause, Queensland



Hospitalisations for Indigenous Queenslanders

- There were 116,000 hospitalisations for Indigenous Queenslanders in 2015–16, 5% of the Queensland total (see also page 28).
- The leading broad causes of admission for Indigenous Queenslanders in 2015–16 were tests, procedures and investigations (40% of total), injury (8%), symptoms and signs (7%), and pregnancy (7%).
- The crude hospitalisation rate for Indigenous Queenslanders increased by 51% over a decade with an annual average increase of about 5500 admissions per year. In contrast the non-Indigenous rate increased by 29%.
- For trends in childhood admissions by selected cause, see page 18.

15% of hospitalisations are associated with modifiable risk factors.

Potentially preventable hospitalisations

In 2015–16, there were about 184,000 hospitalisations that theoretically could have been avoided through preventive care and early disease management delivered in the ambulatory setting—primary healthcare, GP or community health centre—based on the Queensland Health definition of the national indicator potentially preventable hospitalisations (PPHs). The national definition of PPHs includes diabetes as the principal cause of the hospitalisation only, while the Queensland Health definition also includes diabetes as an additional cause in designated principal cause conditions. See page 117 for definition. This section uses the Queensland Health definition for consistency with other reports by Queensland Health.

Selected characteristics of PPHs in 2015–16:

- **Proportion of all hospitalisations:** PPHs accounted for 8% of total (6.8% using the national definition).
- **Leading causes:** diabetes complications accounted for 25% of PPHs, urinary tract infections 10%, cellulitis 9%, COPD 9% and dental conditions 8%.
- **Trends:** PPH rates (age-adjusted) increased by 14% over the past five years.
- **Age profile:** Almost 60% of PPHs were for young children (10% for 0–9 year olds) or older people (47% for 65 years and older).
- **Socioeconomic differences:** PPH rates in disadvantaged areas were 84% higher than advantaged areas (age-adjusted).

- **Remoteness:** PPH rates were 8–9% higher in regional areas than in major cities and 51% higher in remote and very remote areas (age-adjusted).
- **Indigenous Queenslanders:** PPH rates for Indigenous Queenslanders were 2.7 times non-Indigenous rates (age-adjusted).
- **HHSs:** eight of the 15 HHSs had higher age-adjusted PPH rates than the state average for example, Torres and Cape and North West were about double the state average. Six HHSs had slightly lower rates. However, most HHSs (12 of the 15) were within 20% of the state average.

Hospitalisations associated with lifestyle related risk factors

In 2015–16, the combined effect of selected risk factors resulted in about 347,000 hospitalisations, 15% of total hospitalisations in Queensland and 15% of patient days (Table 14).²⁵ Over 50% of the hospitalisations occurred in people aged 65 years and older, illustrating the impact of risk on chronic disease burden. Males experienced a greater proportion (53% of total burden).

High body mass was the largest cause of risk-attributable hospitalisations and patient days (much of this was associated with renal dialysis with its unique admission patterns), followed by high blood pressure and tobacco (Table 14).²⁵

The impact of individual risk factors on the hospital burden varied over the age course²⁵:

- In childhood (0–14 years), exposure to second-hand smoke caused the greatest number of risk-attributable hospitalisations, followed by harms associated with alcohol misuse in adults.
- For young people aged 15–29 years, alcohol was the greatest cause of hospitalisation followed by occupational exposures and hazards, and illicit drug use.
- High body mass index (BMI) caused the greatest number of risk-attributable hospitalisations in younger adults aged 30–44 years, followed by alcohol.
- In early middle age (45–64 years) the leading causes of risk-attributable hospitalisations were the chronic disease risks of high BMI, tobacco, high blood pressure, poor diet, physical inactivity and alcohol.
- Among older adults (65 years and older), high blood pressure and high BMI were the largest contributors to the risk-attributable hospital burden while chronic kidney disease with its high repeat admission characteristic was the largest individual cause for both of these risk factors.

Table 14: Hospitalisations attributed to leading risk factors*, Queensland, 2015–16²⁵

	Hospitalisations	Patient days
High body mass	100,600	256,500
High blood pressure	67,300	220,400
Tobacco	58,700	204,700
Joint diet impact	48,300	169,500
Alcohol	46,200	146,100
Physical inactivity	41,900	111,100
Sun exposure	23,800	35,200
Occupational exposures	20,200	71,500
High cholesterol	13,800	47,900
Illicit drug use	9,500	40,700
Unsafe sex	2,700	7,500
Joint effect all risks	347,400	1,013,900

* Note 1. Hospitalisations cannot be summed across risk factors due to shared effect which is only accounted for in joint factor analysis.

Note 2. Intimate partner violence and child sex abuse have not been included in this list although they are leading causes of burden due to limitations in attributing morbidity impacts to hospitalisations.

Selected highlights from the regions

More information on HHS rates and trends is available from the data visualisations online and the HHS booklet (page vii).

- **All causes:**
 - Crude admission rates were highest in Wide Bay HHS partly due to an older population
 - Admission rates increased between 2006–07 and 2015–16 in all HHSs with the greatest increase in Sunshine Coast, Gold Coast, Torres and Cape and Wide Bay HHSs (about 30% increase).
- **Lifestyle related chronic conditions:**
 - See page 116 for definition
 - Crude admission rates were highest in Wide Bay HHS
 - Admission rates for lifestyle-related chronic conditions remained stable or decreased between 2006–07 and 2015–16 in most HHSs with four exceptions: Torres and Cape (26% increase), Wide Bay (19% increase), Sunshine Coast and Cairns and Hinterland (both 10% increase).
- **Risk factor attributable hospitalisations:**
 - Age-adjusted rates were highest in Torres and Cape (double the state average in 2015–16)
 - Cairns and Hinterland was 40% higher than the state average and Wide Bay 23% higher.

- **PPHs:**

- Crude PPH rates were up to 50% higher in the four remote HHSs (Torres and Cape, North West, Central West and South West) and in Wide Bay
- For all other HHSs the crude PPH rate was within 20% of the state average. Age-adjusted rate variation is discussed on the previous page.

- **Hospitalisations for children:**

- Admission rates for children aged 0–14 years were higher than the state average in six HHSs— North West, Central West, South West, Torres and Cape, Wide Bay and Sunshine Coast
- Admission rates were lower for three HHSs—Mackay, West Moreton and Townsville
- There was a 14% increase in admission rates in Queensland between 2006–07 and 2015–16, mainly because admission rates increased in the larger HHSs of Metro South (by 19%), Metro North (22%), Sunshine Coast (41%), Gold Coast (46%) and also in Cairns and Hinterland (14%). Rates decreased in Mackay (by 23%) and Townsville (by 7%) and were steady in all other HHSs.

Where will we be in 2026?

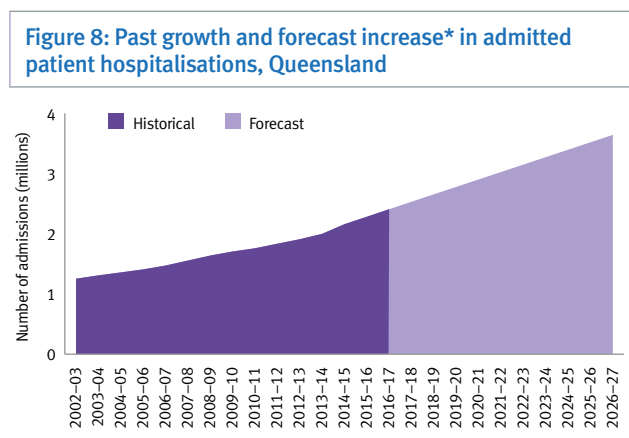
Hospital admissions have increased by an average of about 85,000 each year. Based on trends over the past decade, by 2026–27 it is likely there will be about 3.7 million admissions per year in Queensland (Figure 8).

Factors associated with higher rates and projected increase:

- **Age:** Admissions for middle-aged to older Queenslanders, particularly 65–79 year olds, are increasing more rapidly than other age groups and are projected to account for one-third of the projected increase by 2026–27 (Figure 8). Complex health needs in this older age group are likely to exacerbate this trend.⁷⁹
- **Sex:** Admissions for females are increasing at a slightly faster rate than for males and are projected to account for 55% of all admissions in 2026–27.
- **Causes:** Admissions for two broad causes, that is, investigation, treatments and procedures, and symptoms and signs, are both large causes of hospitalisation and are increasing. Similarly, hospitalisations for musculoskeletal conditions, digestive diseases, injury, and mental disorders are contributing to the increase (Figure 7c). If current trends continue, these six broad cause groups will account for 60% of the 3.7 million admissions in 2026–27.
- **Access:** Admission rates are about 20% higher in socioeconomically advantaged areas than disadvantaged areas and are increasing at a slightly faster rate suggesting that access is an important factor.

- **HHSs:** Admission rates have increased faster in Gold Coast and Sunshine Coast reflecting the driving influence of availability. Rates have also increased in Torres and Cape where much of the increase in recent years was associated with increasing admission rates for Indigenous Queenslanders aged 50 years and older. The large HHSs of Metro South and Metro North will continue to grow and account for almost 40% of admissions in the state.

By 2026, the annual number of **hospital admissions** is projected to **increase by 60%**



*Based on past trends

National comparisons

Variation in the way data on hospital services is collected may limit the comparability of regional and jurisdictional reporting over time.

Provision of services in Queensland per head of population differed from national, being:

- 13% higher for admitted services in 2015–16.⁷⁵
- 20% lower for non-admitted services in 2015–16.⁷⁶

Average length of stay in private hospitals in Queensland was similar to the national average (2.3 days compared to 2.2 days nationally in 2015–16), and for public acute hospitals shorter than the national average (2.8 days compared to 3.1 nationally).⁷⁵

Within the OECD, Australia was a middle ranking country for non-admitted services and overnight hospitalisation rates (16th highest of 33 countries) and at the shorter end for overnight length of stay (25th highest of 32 countries).⁷⁵

Data sources and methods: hospitalisations

In this chapter, hospitalisations were derived from two sources:

- Queensland Hospital Admitted Patient Data Collection.
- AIHW reports on Australian hospital statistics.

The terms ‘hospitalisation’ or ‘admission’ have been used to refer to an admitted patient episode of care, also known as a separation.

Although there are national standards for data on hospital services, variation remains: this includes variation in coding and reporting as well as variation in admission and treatment guidelines and procedures. This report does not identify all such caveats and readers are referred to national reports on hospitals.

Hospitalisations were reported by principal diagnosis, unless noted otherwise.

Hospitalisations for lifestyle-related conditions include coronary heart disease, stroke, colorectal cancer, breast cancer, lung cancer and COPD. Diabetes is not included due to variation in coding rules over the past decade.¹

For standardised rates, the reference population was Australia 2001.

This section largely uses crude rates to rank and compare HHSs — the rationale for doing so is documented.¹

Trends were based on statistical significance using Poisson regression methods.¹

For further information:

- *The health of Queenslanders 2016* (and earlier reports in the series)
- *Methods for reporting population health status 2018*¹
- AIHW publications: Australian hospital statistics⁷⁵⁻⁷⁷
- HHS booklet and statistical tables online (page vii)