2019

Population Health Report

Brisbane North PHN and Metro North Hospital and Health Service

phn BRISBANE NORTH

An Australian Government Initiative

Queensland Government

Acknowledgements

- Brisbane North PHN
- Metro North Hospital and Health Service

Abbreviations and Terminology

ABS	Australian Bureau of Statistics
AEDC	Australian Early Development Census
ASR	Age standardised rate
ATS	Australasian Triage Scale
CABH	Caboolture Hospital
CAGR	Compound Annual Growth Rate
CI	Confidence Interval
COPD	Chronic Obstructive Pulmonary Disease
DWS	District of Workforce Shortage
FTE	Full time equivalent
GP	General Practitioner
HHS	Hospital and Health Service
ICD	International Classification of Disease
IDR	Insufficient data recorded
IRSD	Index of Relative Socioeconomic Disadvantage
LGA	Local Government Area
LGBTI	Lesbian, Gay, Bisexual, Transgender and Intersex people
MBS	Medicare Benefits Schedule
PHN	Primary Health Network
OBD	Occupied Bed Day
QLD	Queensland
RBWH	Royal Brisbane and Women's Hospital
REDH	Redcliffe Hospital
SA3	Statistical Area Level Three
SRG	Service Related Group
STI	Sexually Transmitted Infections
TAFE	Technical and Further Education
TPCH	The Prince Charles Hospital

Contents

Executive Summary

Context

Brisbane North PHN (the PHN) and Metro North Hospital and Health Service (the HHS) both serve the same geographical catchment. They are also both working to achieve complementary objectives to ensure quality healthcare is available for the people living in the North Brisbane and Moreton Bay region (the region).

Brisbane North PHN

The PHN's vision is a community where good health is available for everyone. The PHN supports primary healthcare clinicians and communities in Brisbane's northern suburbs, Moreton Bay Regional Council and parts of the Somerset Regional Council. The objectives of the PHN are to work with others to:

- reorient the health system toward care in the community
- achieve a health and community care system responsive to need
- direct resources to best meet health and community care needs for the region.

Metro North Hospital and Health Service

The HHS's vision is to change the face of healthcare through compassion, commitment, innovation and connection. The purpose of the HHS is to create, connect and apply knowledge to deliver high quality health services. The HHS is the largest and most diverse Hospital and Health Service in Queensland. It governs five (state-based) hospitals. The objectives of the HHS are to:

- always put people first
- improve health equity, access, quality, safety and health outcomes
- deliver value-based health services through a culture of research, education, learning and innovation.

Purpose

The *Population Health Report* (the report) is a planning tool that outlines the broad health and service needs existing within the region, allowing for effective planning. The report measures the health of the region's population and provides an overview of the state of the health system. The report is a refresh of the 2016-17 Joint Health Needs Assessment.

The key objectives of this *Population Health Report* (the report) are to:

- assess the health needs in the region to enable effective health planning and intervention
- inform the planning and evaluation processes across both primary and secondary health sectors
- provide a sound evidence base to enable the investment of resources to best meet the health and community care needs of our community.

Methodology

The PHN and the HHS have partnered to develop this joint report.

This report builds on previous work by the PHN and the HHS in undertaking health service planning and health needs assessments in the region.

Information was sourced from:

- discussions with key stakeholders from the PHN and the HHS
- Commonwealth Department of Health
- Australian Bureau of Statistics
- Queensland Government Statistician's Office
- Public Health Information Development Unit
- Australian Institute of Health and Welfare
- Queensland Department of Health.

Other strategic documents that should be read in conjunction to this document are as follows:

- Comprehensive Health Needs Assessment (Brisbane North PHN, 2016)
- Mental Health and Suicide Prevention Needs Assessment (Brisbane North PHN, 2016)
- Methamphetamine, Alcohol and other Drugs Needs Assessment (Brisbane North PHN, 2016)
- Metro North Health Strategy 2015-2020 (Metro North Hospital and Health Service, 2014)
- Health of Queenslanders 2016. Report of the Chief Health Officer, Queensland. (Queensland Government, 2016)
- Joint Health Needs Assessment 2016-17 (Brisbane North PHN and Metro North Hospital and Health Service, 2017).

Data quality statement

- Caution should be exercised interpreting results were significance has not been determined.
- Confidence intervals of rates are calculated at a confidence level of .05
- SA3 is based on a person's usual residence
- Indigenous status refers to Aboriginal and/or Torres Strait Islander persons. Persons with an Indigenous status of "not stated" have been included within the "non-Indigenous" population
- Counts and age-standardised rates of potentially preventable hospitalisations were sourced from **Queensland Hospital Admitted Patient Data Collection (QHAPDC)**, Department of Health (customised release). Population source from Queensland government Statistician's Office: Synthetic Estimated Resident Populations by Indigenous Status
- Separation counts exclude separations flagged as newborns with unqualified days, posthumous organ procurement or boarders and admissions to public psychiatric hospitals
- Changes to the Australian Coding Standard (ACS 2104) for episodes with Z50.- Care involving use of rehabilitation procedures occurred from 1 July 2015, resulting in apparent spikes in some conditions. lysis should be undertaken with caution. See the following link for further information: https://www.health.qld.gov.au/__data/assets/pdf_file/0033/703788/techreport-19.pdf
- The directly age-standardised (ASR) rate is the rate expected to occur in a 'standard' population, if it experienced the same age-specific rates as the observed population. Rates are standardised to the 2001 Australian population using 5-year age groups, 0-4, 5-9, …65+.
- Counts of births and selected perinatal indicators were sourced from the **Perinatal Data Collection (PDC)**, Department of Health (customised release)
- Values of less than five counts have been suppressed. Data for 2017-18 are preliminary and subject to change
- Where SA2s fell outside Metro North HHS, SA2s were excluded from SA3 count. 11370 - Kilcoy SA2 is split. As a result, counts for this region include some residents outside of Metro North HHS. 21381 - Scarborough - Newport SA2 is split in 2017/2018 data. As a result, counts for this region in 2017/2018 include some residents outside of Metro North HHS
- Counts for the region (Metro North HHS) do not include split SA2s and therefore may not match the sum of counts by SA3 of usual residence
- Results from the **Queensland adult/child preventive health survey** were sourced from www.health.qld.gov.au/phsurveys (customised release). Reproduction and interpretation of these results is solely the responsibility of the authors and may not reflect the views of the Queensland Department of Health

- Official government statistics for Queensland are based on annual survey data. Pooled Queensland results are provided for comparative purposes only; official Queensland statistics must always reference the annual results (available from http://www.health.qld.gov.au/phsurveys).
- The most up-to-date Queensland results (2017-18) are available at: http://www.health.qld.gov.au/phsurveys
- Aboriginal and Torres Strait Islander demographical data derived from the 2016 Census of Population and Housing. Data is based on place of usual residence (URP)
- Due to data suppression, there may be variation between region totals and SA3 totals for health workforce data
- Health workforce data based on address of primary occupation
- Primary health care service use data based on patient address, not provider address

Changes from previous report

This report is an update to the Joint Health Needs Assessment 2016-17. While most sections of this report have simply received data updates, more substantial changes to the report include:

Demographics

- Added age distribution by sub region and hospital catchment
- Inclusion of data on migration into the region
- Inclusion of more detailed historical population growth and projections data
- Updated population projections to 2041
- Inclusion of more detailed data on culturally diverse populations

Social determinants

- Moved section on supported assistance to aged care to home and residential aged care section
- Added data on household income

Health risk and health status

- Substantial updates on all health risk factors and inclusion of SA3 level data
- Removed cancer screening rates
- Trended childhood immunisation rates over a three year period
- Inclusion of data on Aboriginal and Torres Strait mothers in the maternal health section
- Substantial updates to communicable disease reporting

Mental health and alcohol and other drug treatment

- Reordered mental health section and added substantial updates on hospital based mental health activity
- Included reporting on suicide deaths between 2012 and 2016
- Substantial updates to hospitalisations due to alcohol and other drug related conditions

Health service use

- Inclusion of five year trends on general practice use data
- Added data on the population who did not see a GP
- Added trends on 715 health assessments
- Reordered data on potentially preventable hospitalisations
- Inclusion of more detailed oral health data

Health workforce

- Health workforce data substantially reworked due to changes in reporting
- Health practitioner FTE rates recalculated and trended
- Inclusion of detailed data on medical practitioners by primary speciality
- Added data on the proportion of the health workforce with high FTE workloads

General changes

- Minor updates to existing wording and analysis
- Updates to referencing and footnotes
- Inclusion of confidence intervals where available[1]
- Addition of a data quality statement.

[1] Unless otherwise stated, all confidence intervals reported in this document are set to 95 per cent.

Table 1: Summary by sub region

Hospital catchment	Royal Brisbane and Women's Hospital		The Prince Charles Hospital		Redcliffe Hospital	Caboolture & Kilcoy Hospital	
Chapter	Brisbane Inner City	Brisbane West	Brisbane North	Pine Rivers	Redcliffe – North Lakes	Moreton Bay North	The region
Sub region	194,542 people	136,363 people	218,521 people	140,815 people	152,356 people	162,150 people	1,004,747 people
Health risk	Rates of health risk comparable or better than the region and state	Experiences the lowest rates of obesity, smoking and alcohol consumption in the region	Rates of health risk comparable or better than the region and state	Experiences the highest rates of overweight in the region	Experiences the second highest rates of obesity, smoking and alcohol consumption in the region	Experiences the highest rates of obesity, smoking and alcohol consumption for the region	**As a region health risk factors are on par or compare favourably to the state**
Health status	Prevalence of health conditions and burden of disease comparable or better than the region	Low prevalence of health conditions and burden of disease. Mortality is low in Kenmore-Brookfield-Moggill, and Sherwood Indooroopilly	Prevalence of health conditions and burden of disease comparable to the region	Low prevalence of health conditions, burden of disease Mortality is low in the Hills District but high in Strathpine	High prevalence of health conditions, burden of disease and mortality	High prevalence of health conditions, burden of disease and mortality	**Across a range of health status indicators, in general the region is comparable to the Queensland population**

Hospital catchment		Royal Brisbane & Women's Hospital		The Prince Charles Hospital		Redcliffe Hospital	Caboolture & Kilcoy Hospital	
Sub region		Brisbane Inner City	Brisbane West	Brisbane North	Pine Rivers	Redcliffe – North Lakes	Moreton Bay North	The region
Service use	Primary	Low service rates compared to the region and lowest bulk billing rates	Lowest rates of service use and among the lowest local areas for bulk billing	Service use and bulk billing comparable to the regional average	Higher rates than the region for service use and bulk billing	High service use and likelihood of bulk billing	Highest service demand and bulk billing rates in the region. Lowest GP to population ratio	**Consistent growth in GP attendances per person from 2013-14 to 2016-17** **Bulk billing rates increasing but still less than the national rates**
	Acute – Public	Relative utilisation rate was among the lowest of local areas and less than state admission rates for adults and children	Relative utilisation rate was the lowest of local areas and less than state admission rates	Relative utilisation rate for adults and children were on par to the state admission rate	Relative utilisation rate was less than state admission rate for adults and equivalent to state for children	Relative utilisation rate was the second highest in the region for adults and children and is above state rate	Highest relative utilisation rate for this region and above state rate for adults and children	**Overall relative utilisation rate compare favourably to the state**
	Acute - Private	Relative utilisation rate was greater than state rate and amongst the highest of local areas with highest rate for children	Relative utilisation rate was the highest of local areas and above state	Relative utilisation rate for adults and children were above state rate	Relative utilisation rate for adults and children were above state rate	Relative utilisation rate was the second lowest in the region for adults and children and is below state rate	Lowest relative utilisation rate for this region and below State rate for adults and children	**Overall relative utilisation rate compare above state admission rate**

Structure

This report is structured as follows:

1. Our region: Details the population characteristics including geographical catchment, demographics and social determinants
2. Health risk: Describes the health behaviours of the region including diet and exercise, smoking and alcohol consumption
3. Health status: Includes measures of functioning, physical illness, and mental wellbeing
4. Service use: Describes the healthcare services accessed and used by residents.

Figure 1: Report structure

Our region

The geographical catchment shared by the PHN and HHS covers areas north of the Brisbane River including parts of the Brisbane City Local Government Area, Moreton Bay Local Government Area and parts of the Somerset Local Government Area (Kilcoy).

The region is home to over one million residents and is projected to increase to over 1.3 million residents by 2041. Over 20,000 people of Aboriginal or Torres Strait Islander descent live in the region, representing 1.7 per cent of the region's total population as at 2016. In the region, over one in five (20.1 per cent) residents were born overseas (221,963 people).

While there are pockets of social disadvantage across the entire region, the sub regions of Moreton Bay North and Redcliffe - North Lakes demonstrate significantly higher levels of socioeconomic disadvantage, poorer health outcomes and more limited access to health services when compared to the other sub regions.

Education, employment, income and housing influence an individual's health and the health of communities. The unemployment rate is 5.7 per cent across the region and almost one in four children (23.9 per cent) are developmentally vulnerable.

The median household income per annum in the region is nearly $90,000 however; there is significant variation across the sub regions, with Moreton Bay North having the lowest median household income per annum. Brisbane Inner City has the highest median income ($100,964), which is nearly double that of Moreton Bay North ($67,267).

One third of low income householders[2] in the PHN region experience either rental or mortgage stress, with the highest rate in the Brisbane Inner City sub region. Approximately 3744 people are homeless in the region with this number concentrated in Brisbane Inner City sub region (1188 people).

Further details of these indicators are provided in this chapter.

Sub regions

To facilitate effective planning for the PHN and the HHS, six geographic sub regions have been determined. These sub regions draw on both hospital catchment areas, and PHN planning regions based on the Statistical Areas level three (SA3) which are the Australian Statistical Geography Standard (ASGS) developed by the Australian Bureau of Statistics (ABS).

The six sub regions are[3]:

1. **Brisbane Inner City - Population: 194,542 people (Royal Brisbane and Women's Hospital catchment)**

The Brisbane Inner City sub region is located in the Brisbane City Council and bordered by Alderley in the north, Ascot in the east to Auchenflower in the west. The Brisbane Inner City sub region is serviced by the Royal Brisbane and Women's Hospital.

[2] Low income households are defined as within the lowest 40 per cent of the income distribution
[3] All sub region population are sourced from ABS 2016

Brisbane Inner City comprises of the following statistical areas (SA3):

- Brisbane Inner – North
- Brisbane Inner – West
- Brisbane Inner[4].

2. Brisbane North – Population: 218,521 people (The Prince Charles Hospital catchment)

The Brisbane North sub region is located in the Brisbane City Council stretching from Brighton in the north, Virginia in the east and Everton Park in the west. Residents of this region are serviced by The Prince Charles Hospital.

Brisbane North comprises of the following statistical areas (SA3):

- Sandgate
- Bald Hills – Everton Park
- Chermside
- Nundah.

3. Brisbane West – Population: 136,656 people (Royal Brisbane and Women's Hospital catchment)

The Brisbane West sub region is in the Brisbane City Council ranging from St Lucia to Moggill in the west, and to Upper Kedron and Ferny Grove in the north.

Residents of this region are serviced by the Royal Brisbane and Women's Hospital.

Brisbane West comprises of the following statistical areas (SA3):

- The Gap – Enoggera
- Sherwood – Indooroopilly[5]
- Kenmore – Brookfield – Moggill.

4. Pine Rivers – Population: 140,815 people (The Prince Charles Hospital catchment)

The Pine Rivers sub region is in the Moreton Bay Regional Council ranging from Dakabin in the north, Strathpine in the east and the Hills District in the west. Residents of this region are serviced by The Prince Charles Hospital.

Pine Rivers comprises of the following statistical areas (SA3):

- Strathpine
- Hills District.

5. Redcliffe – North Lakes – Population: 152,356 people (Redcliffe Hospital catchment)

The Redcliffe – North Lakes sub region is also within the Moreton Bay Regional Council. Residents of this region area serviced by the Redcliffe Hospital.

Redcliffe – North Lakes comprises the following statistical areas (SA3):

- Redcliffe
- North Lakes
- Narangba – Burpengary (38 per cent) [6].

[4] Parts of the Brisbane Inner SA3 falls outside of the region. A population based concordance split has been applied to this area where appropriate.
[5] Parts of the Sherwood – Indooroopilly SA3 fall outside of the region. A population based concordance split has been applied to this area where appropriate.
[6] Deception Bay SA2 aligned to Redcliffe – North Lakes with remained areas of Narangba – Burpengary SA3 aligned to Moreton Bay North.

6. **Moreton Bay North – Population: 162,150 people (Caboolture Hospital and Kilcoy Hospital catchment)**

The Moreton Bay North sub region is located in the Moreton Bay Regional Council and includes a small part of the Somerset local government area (LGA). It encompasses Kilcoy in the north and Bribie Island in the east. Residents of this region are serviced by the Caboolture Hospital and Kilcoy Hospital.

Moreton Bay North comprises the following statistical areas (SA3):

- Caboolture Hinterland
- Caboolture
- Bribie - Beachmere
- Narangba – Burpengary (62 per cent).

The sub regions and hospital catchments are depicted in the following maps. A map for the SA3 used in this report is located in the appendix.

Figure 2: PHN sub regions

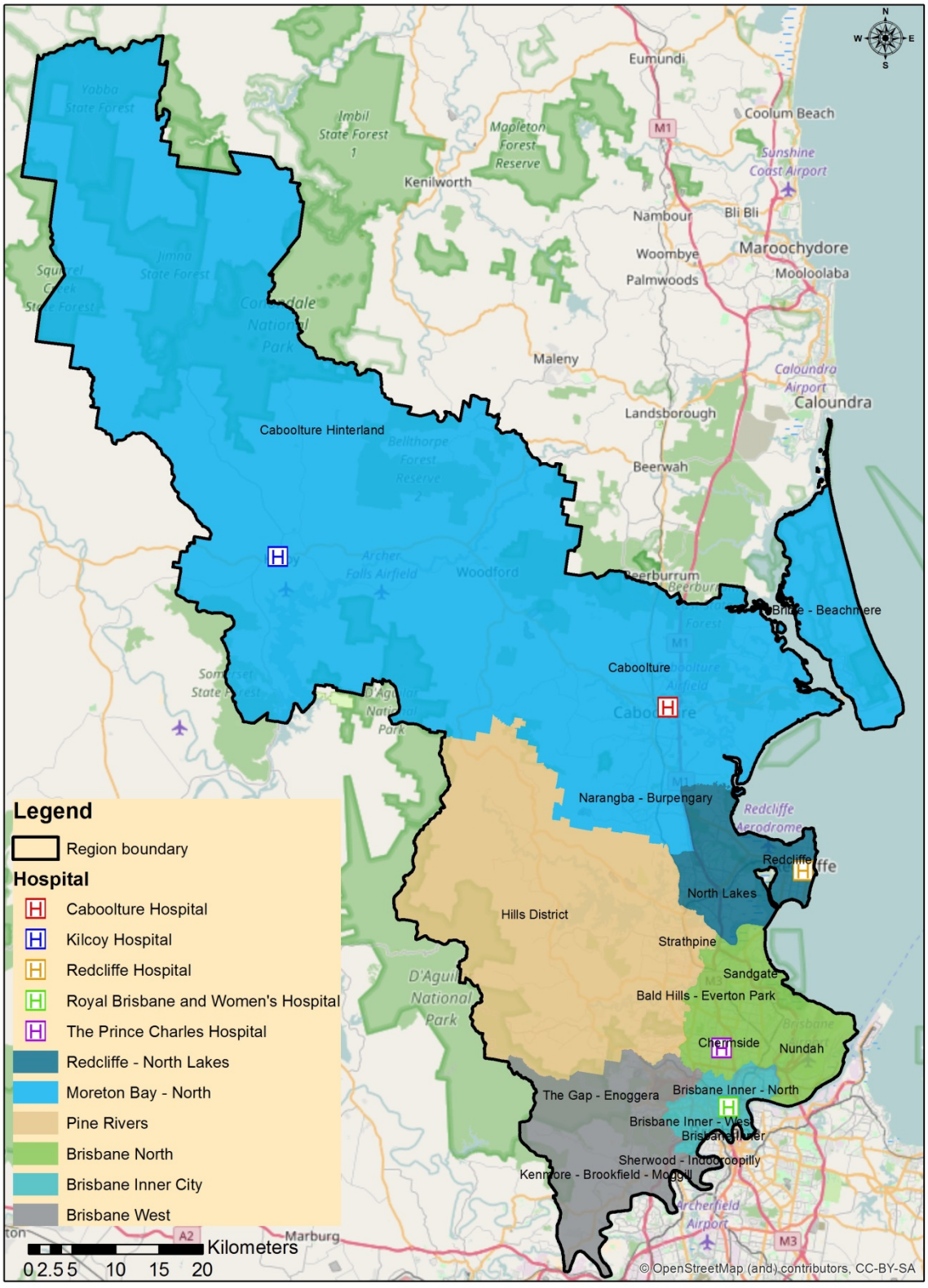
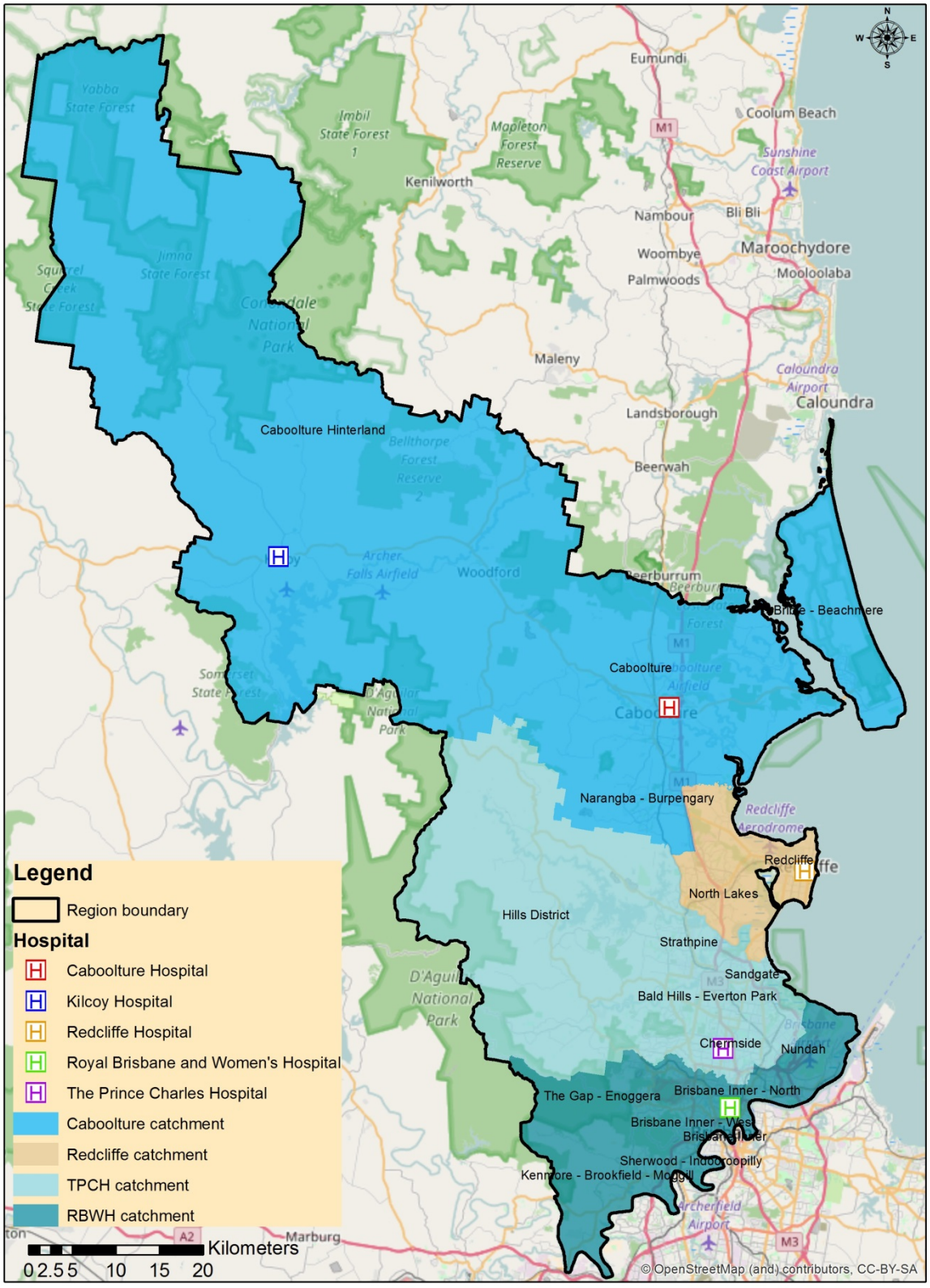


Figure 3: Hospital catchments



Population

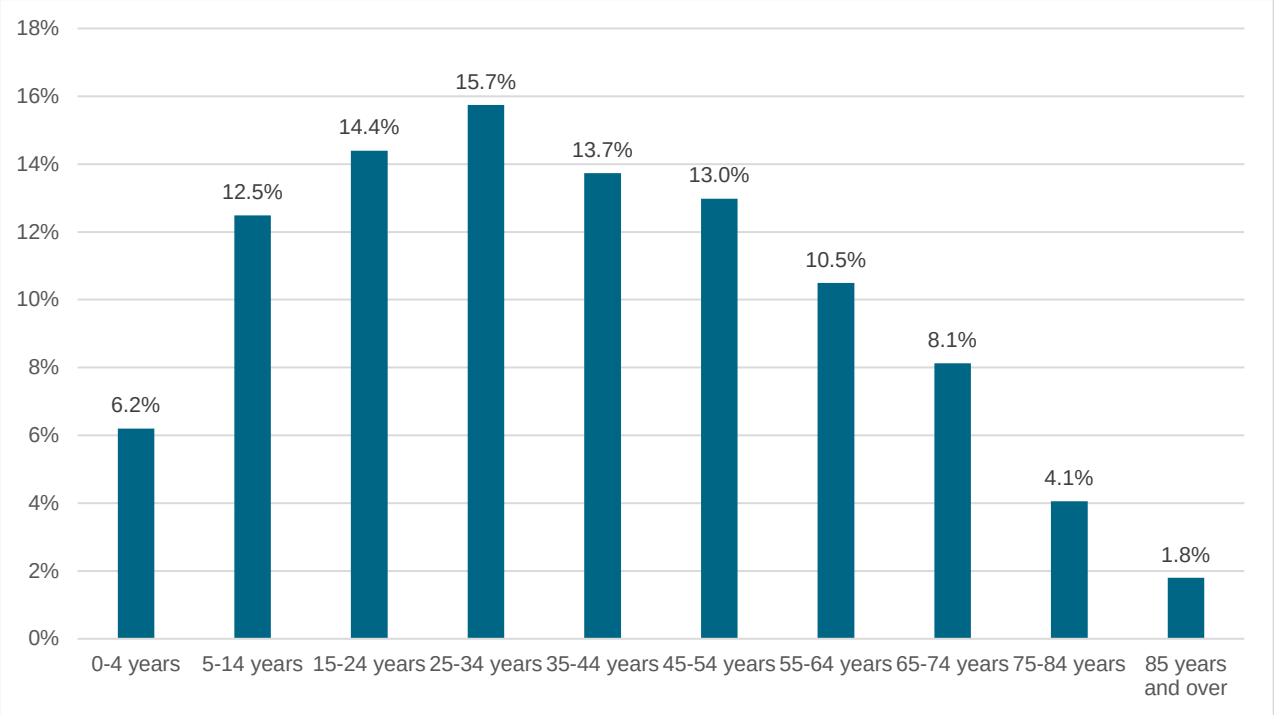
As of 30 June 2017, the estimated resident population for the region was 1,004,747 people[7]. The region is split into six main sub regions, which are used for population health planning purposes. These regions are built from 97 Statistical Areas level 2 (SA2) and 18 Statistical Areas level 3 (SA3). A full list of SA2 and SA3 regions within each sub region can be found in the appendix. Each sub region has been allocated to a hospital catchment. These regions and associated population are:

- Brisbane Inner City (Royal Brisbane and Women's Hospital) – 194,542 people
- Brisbane West (Royal Brisbane and Women's Hospital) – 136,363 people
- Brisbane North (The Prince Charles Hospital) – 218,521 people
- Pine Rivers (The Prince Charles Hospital) – 140,815 people
- Redcliffe – North Lakes (Redcliffe Hospital) – 152,356 people
- Moreton Bay North (Caboolture Hospital) – 162,150 people.

Age distribution

Of the region's population, one third (33.1 per cent) are under 25 years of age, 29.5 per cent are aged 35-44 years, 23.5 per cent are aged 45-64 years and 14 per cent are aged 65 years and over[8]. The age distribution of the region's population is highlighted in Figure 4.

Figure 4: Distribution of persons by age group, 2017



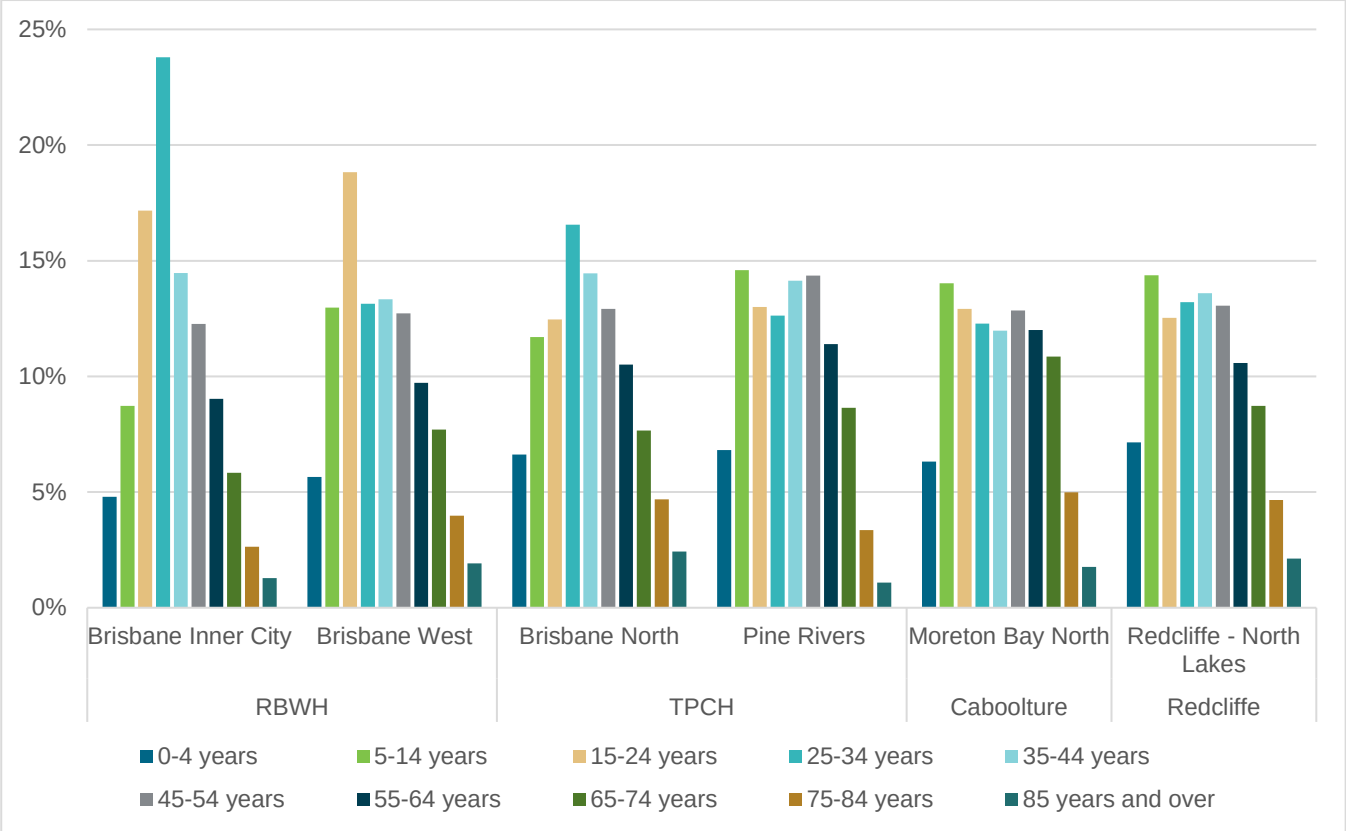
Source: (Australian Bureau of Statistics, 2018)

[7] (Australian Bureau of Statistics, 2018)

[8] (Australian Bureau of Statistics, 2018)

Within the region, the age structure of the population varies. In the Brisbane Inner City sub region, the population tends to be younger, whereas the Moreton Bay North, Pine Rivers and Redcliffe – North Lakes sub regions are home to an older population. This variation can be seen in Figure 5.

Figure 5: Distribution of persons by age group by sub region and hospital catchment, 2017



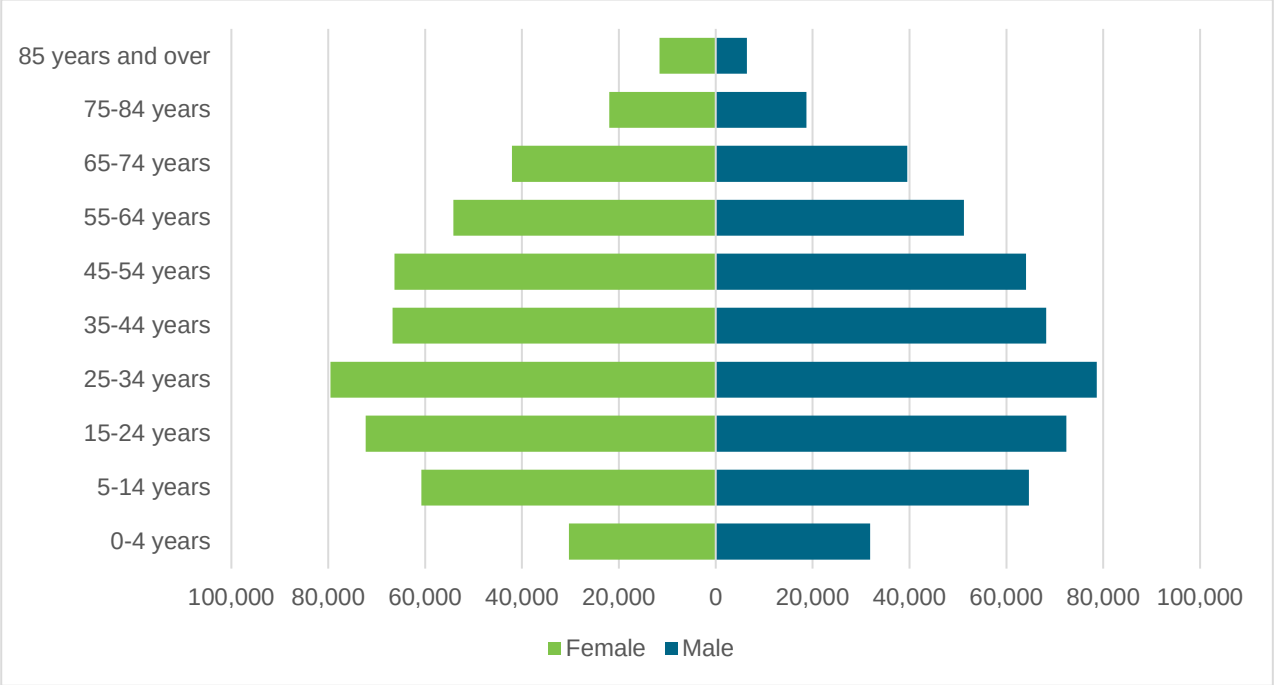
Source: (Australian Bureau of Statistics, 2018)

Age – sex distribution

In 2017, there were slightly more females than males residing in the region, with 50.6 per cent and 49.4 per cent respectively[9]. Among younger age groups, there are more males compared to females (50.8 per cent compared to 49.2 per cent respectively among people aged 0-24 years). By contrast, as the population ages, the proportion of the total population that are female increases. In 2017, 53.9 per cent of the population aged 65 years and over were female, with 46.1 per cent of the population aged 65 years and over male. This is shown in Figure 6.

[9] (Australian Bureau of Statistics, 2018)

Figure 6: Age-sex distribution of the region's population, 2017



Source: (Australian Bureau of Statistics, 2018)

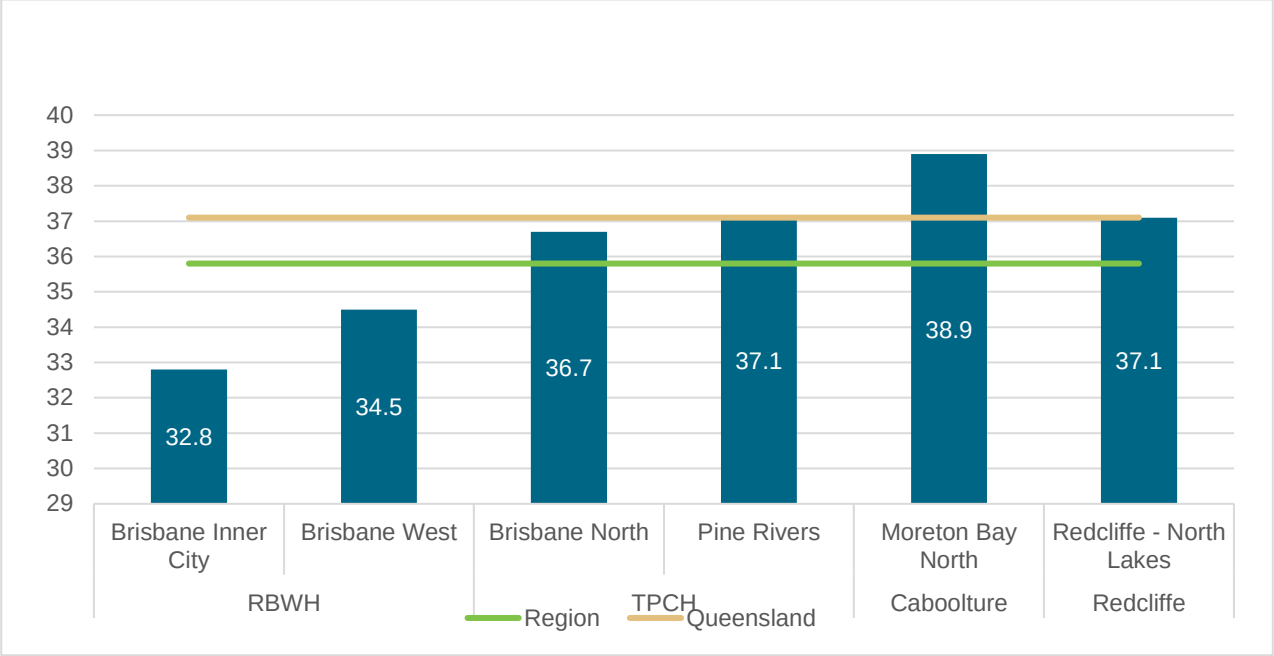
Within the region, there are more females compared to males in all sub regions except for the Brisbane Inner City sub region, which is home to a younger population. The female to male ratio is highest in the Brisbane North and Redcliffe – North Lakes sub regions.

Median age

In 2017, the median age in the region was 35.8 years of age[10]. This was lower than the Queensland median age of 37.1 years of age. Within the region, the median age in 2017 varied from 32.8 years of age in the Brisbane Inner City sub region to 38.9 years of age in the Moreton Bay North sub region. This is shown in Figure 7.

[10] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Figure 7: Median age of persons by sub region and hospital catchment, 2017



Source: **(Queensland Government Statistician's Office, Queensland Treasury, 2018)**

Within a number of sub regions, there was a large variation in the median age between SA2s. The Brisbane Inner and Brisbane Inner – West sub regions have the youngest median age in the region, particularly in areas with high student populations including the St Lucia SA2 (23.9 years) and Kelvin Grove – Herston SA2 (27.1 years). Older populations are also present within these sub regions, with the median age in the Ascot (40.3 years) and Pinjarra Hills – Pullenvale (42.8 years) SA2s higher than the Queensland median[11].

A similar pattern was present in the Redcliffe – North Lakes sub region, where the Redcliffe (48.8 years) and Margate – Woody Point (45.3 years) SA2s had a higher median age than the Murrumba Downs (31 years) and North Lakes – Mango Hill (31.6 years) SA2s. By contrast, the median age within the Moreton Bay North sub region, apart from the Caboolture South SA2, was consistently higher than the Queensland median[12].

The median age in the region has increased from 35.5 years in 2007, an increase of 0.3 years over a ten year period. This increase is lower than Queensland, where the median age increased by 0.9 years between 2007 and 2017 (from 36.2 years to 37.1 years).

Migration

As of the 2016 Census of Population and Housing (Census), 46.2 per cent of the region's population reported having a different address in the five years previous. This is slightly higher than Queensland, where 44.1 per cent of the population reported having a different address five years previous to the 2016 Census.

Within the region, the majority of the population residing in the Brisbane Inner City sub region (55.6 per cent) had a different address five years previous to the 2016 Census[13]. By contrast, 37 per cent of the population residing in the Pine Rivers sub region had a different address five years previous to the 2016 Census[14]. The sub regional comparisons can be seen in Figure 8. This variation highlights areas of population growth and areas where the population is reasonably stable within the region.

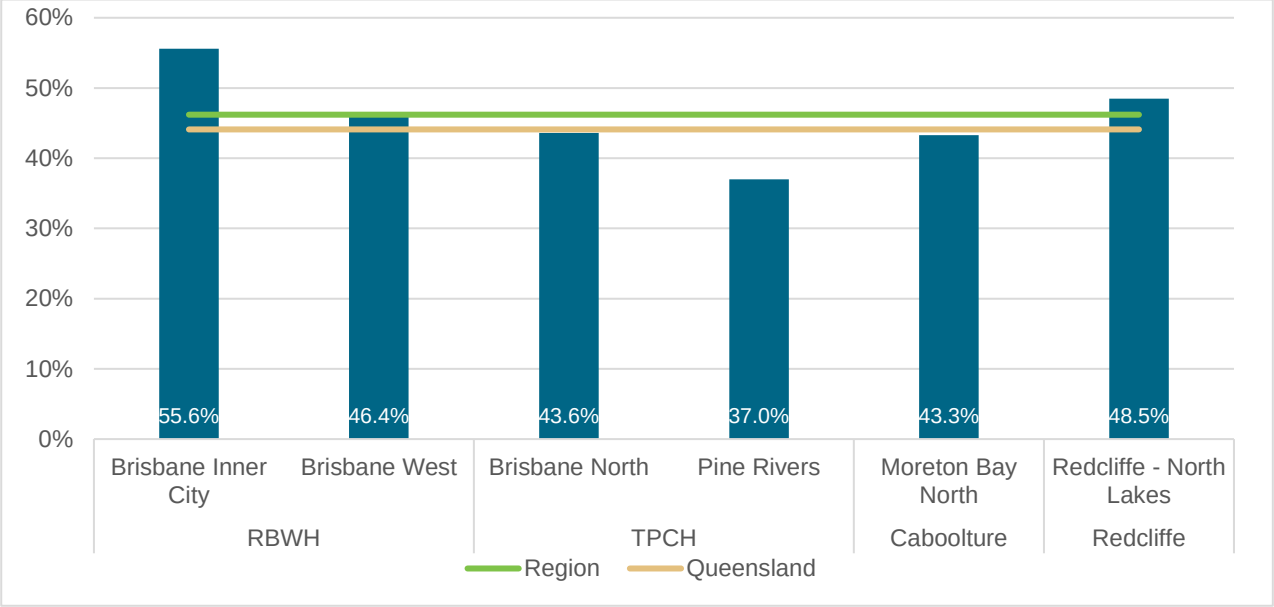
[11] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[12] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[13] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[14] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Figure 8: Percentage of the population with a different address five years previous, 2016

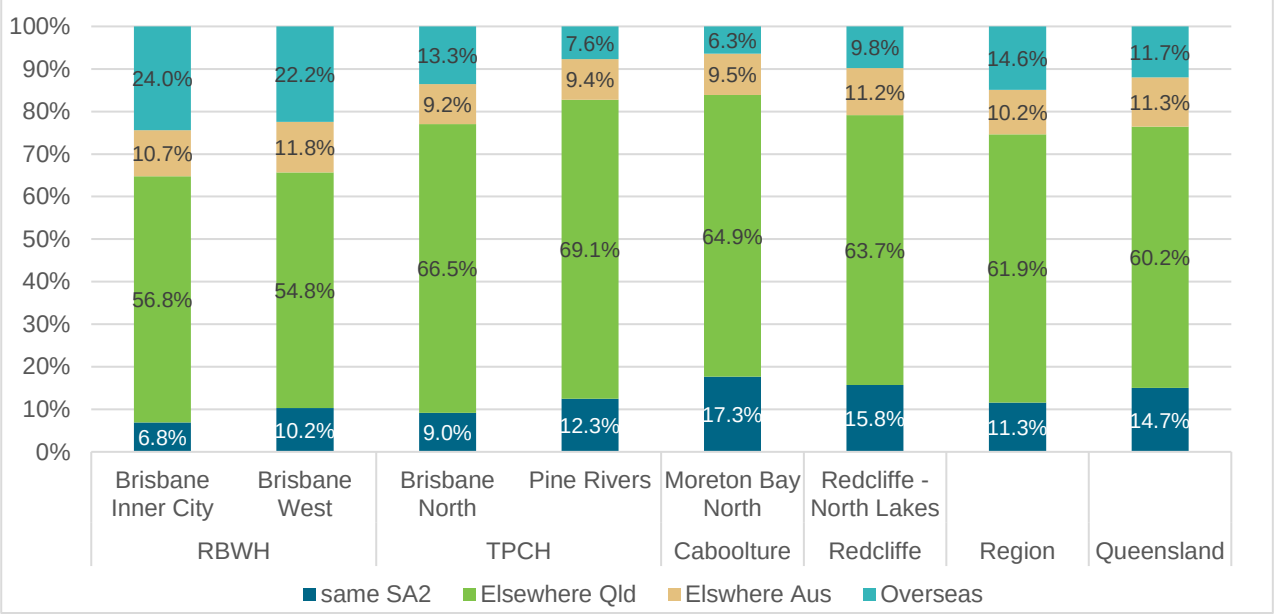


***Source:* (Queensland Government Statistician's Office, Queensland Treasury, 2018)**

Of the population in the region that had a different address five years previous to the 2016 Census, 11.3 per cent resided in the same SA2, 61.9 per cent resided elsewhere in Queensland, 10.2 per cent resided elsewhere in Australia and 14.6 per cent resided overseas[15].

Within the region, the Brisbane Inner City and Brisbane West sub regions had the highest percentage of people who had resided overseas five years previous to the 2016 Census, with 24 per cent and 22.2 per cent of the sub region's populations respectively. The Pine Rivers sub region had the highest percentage of people who had resided elsewhere in Queensland (69.1 per cent). These differences are shown in Figure 9.

Figure 9: Percentage of the population with a different address five years previous by location, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

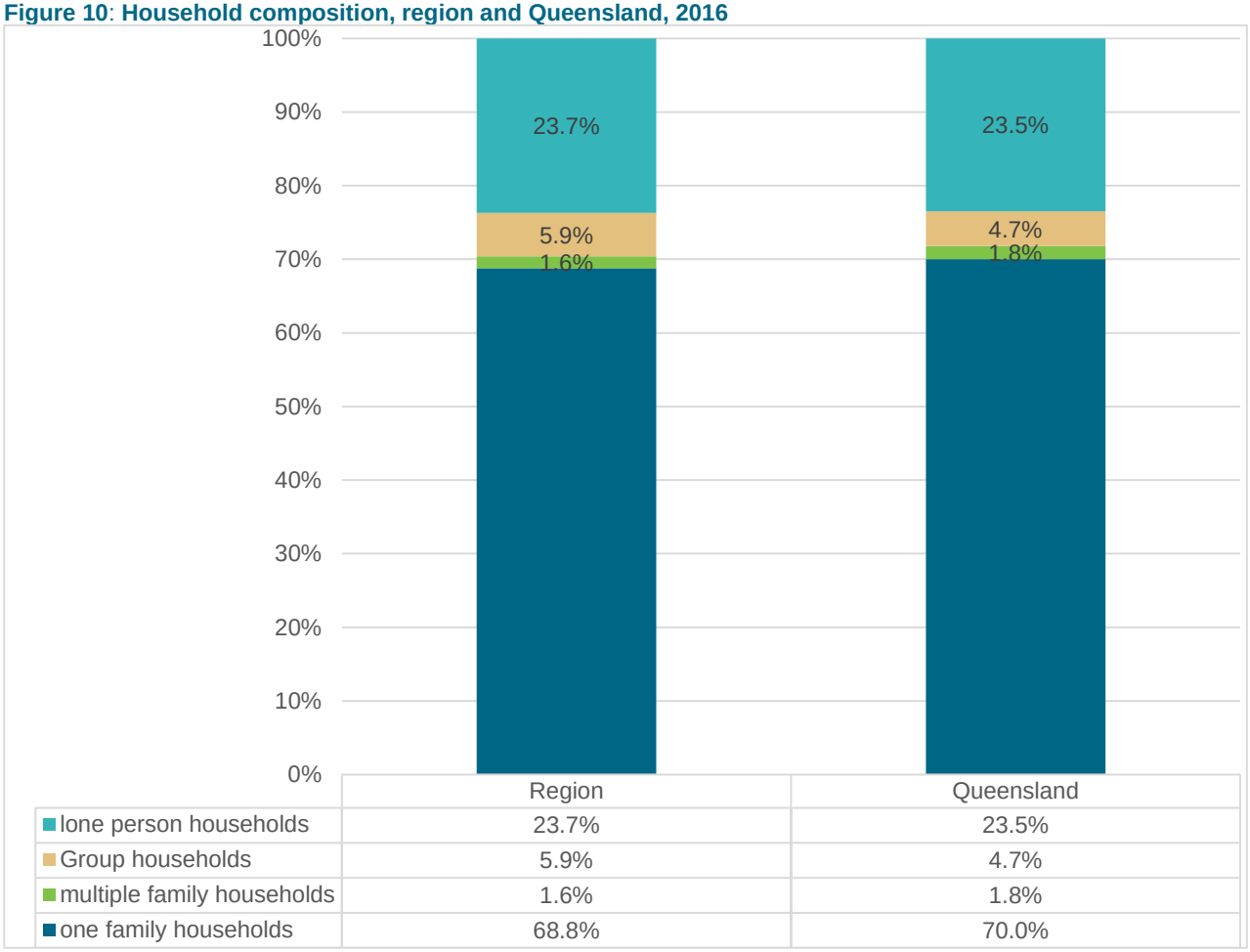
[15] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Household and family composition

The term household is defined as all of the occupants of a single dwelling[16]. There are a number of different categories used when describing the occupants of a household. These categories are one family households, multiple family households, group households and lone person households[17]. Families are defined as “two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage, registered or de-facto, adoption, step or fostering, who are usually resident in the same household”[18].

In 2016, there were 340,933 households in the region[19]. Of these households, 68.8 per cent were classified as one family households, 23.7 per cent of households were lone person households, 5.9 per cent of households were group households and 1.6 per cent of households were multiple family households[20]. Compared to Queensland, the region has a higher percentage of group households and a lower percentage of one family households. This comparison is shown in Figure 10.

Figure 10: Household composition, region and Queensland, 2016



	Region	Queensland
lone person households	23.7%	23.5%
Group households	5.9%	4.7%
multiple family households	1.6%	1.8%
one family households	68.8%	70.0%

Source: (Australian Bureau of Statistics, 2017)

Within the region, household composition varied by sub region. One family households are more common in the Pine Rivers (79.8 per cent), Moreton Bay North (73.3 per cent) and Brisbane West sub regions, whereas group (12.1 per cent) and lone person (30.6 per cent) households are more common in the Brisbane Inner

[16] **Invalid source specified.**

[17] **Invalid source specified.**

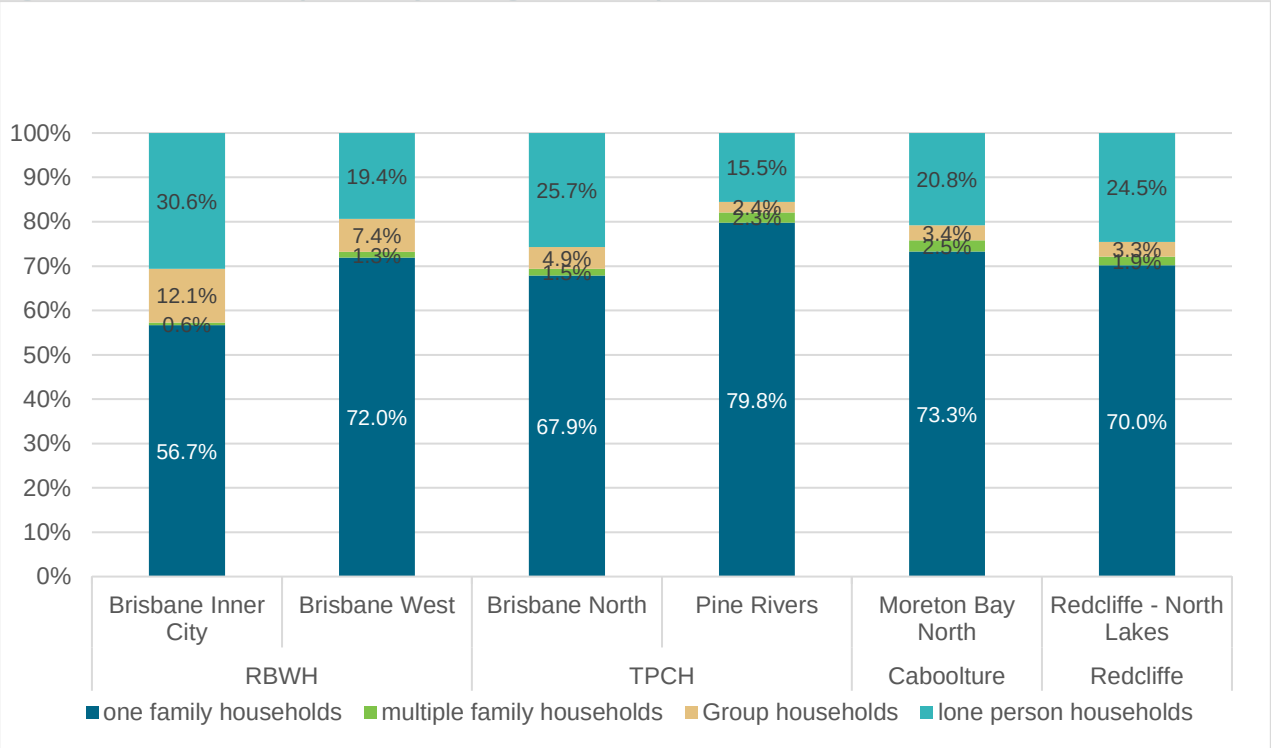
[18] **Invalid source specified.**

[19] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[20] (Australian Bureau of Statistics, 2017)

City sub region. The Pine Rivers and Moreton Bay North sub regions also have a higher proportion of multiple family households, compared to the region. These variations are shown in Figure 11.

Figure 11: Household composition by sub region and hospital catchment, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

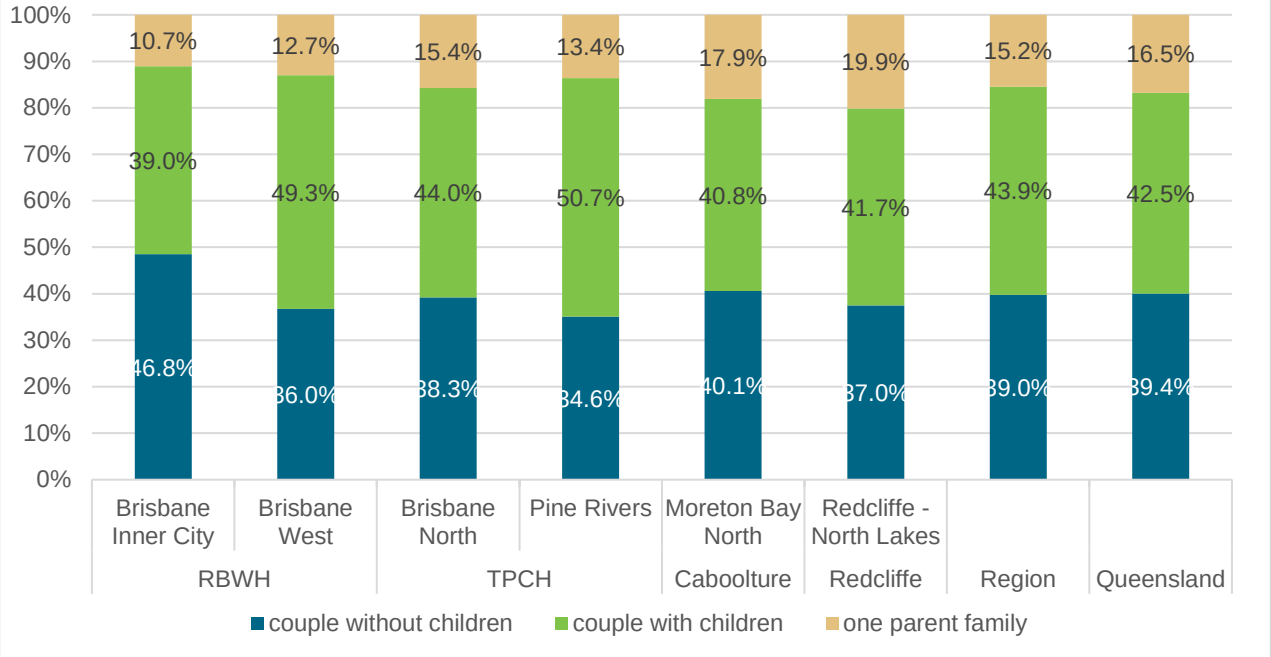
In 2016, there were 245,672 families in the region[21]. The most common type of family was the couple with children, which accounted for 43.9 per cent of all families in the region. This was followed by couple without children (39 per cent) and one parent family (15.2 per cent). Family composition in the region was similar to Queensland, where 42.5 per cent of families are couples with children, 39.4 per cent of families are couples without children and 16.5 per cent of families are one parent families[22].

Within the region, families residing in the Brisbane Inner City sub region were more likely to be couples without children, whereas families residing in every other sub region were more likely to be couples with children. The percentage of one parent families was highest in the Moreton Bay North (17.9 per cent) and Redcliffe – North Lakes sub regions (19.9 per cent). The percentage of one parent families in both sub regions was higher than the Queensland average. Family composition by sub region can be seen in Figure 12.

[21] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[22] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Figure 12: Family composition by sub region and hospital catchment, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Population projections

Population projections provide an indication of the growth and change that may occur in the population, given the presence of key assumptions about fertility, mortality and migration[23]. This section examines the population growth that has occurred in the 10-year period between 2008 and 2017, and the projected population growth in the region to 2041.

Historical population growth

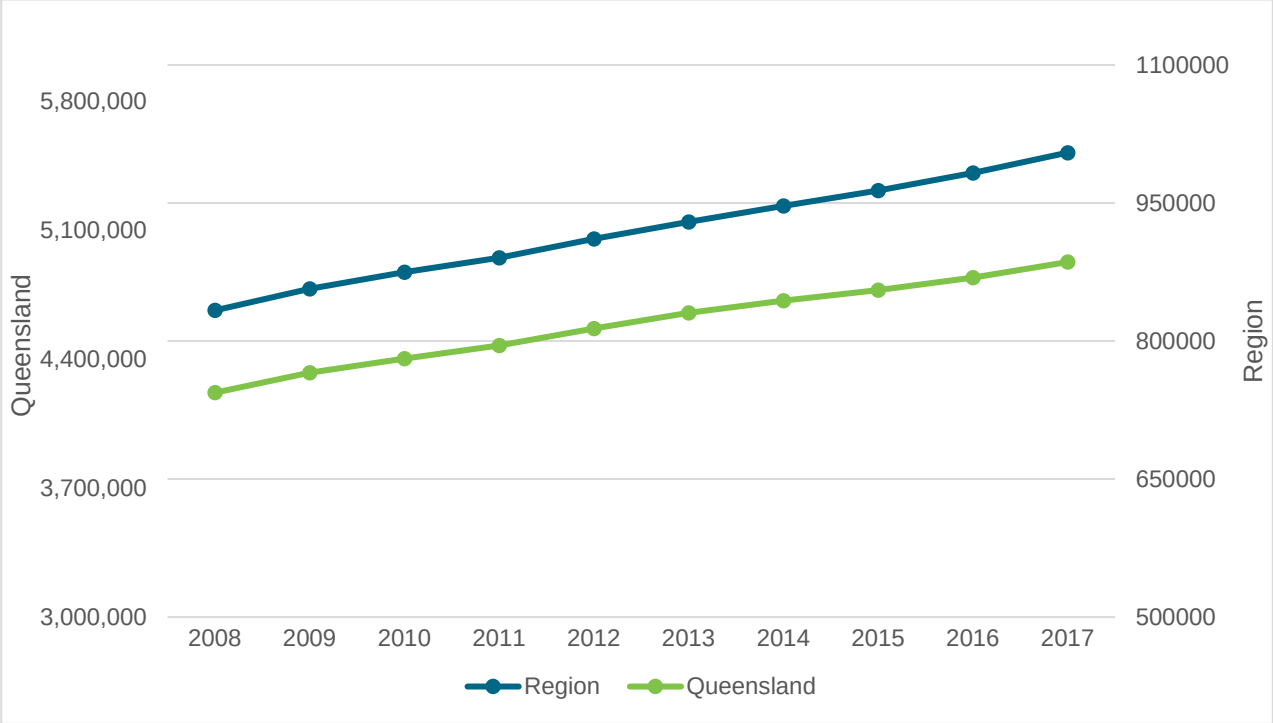
Between 2008 and 2017, the region's population increased from 833,319 people to 1,004,747 people, an increase of 20.57 per cent[24]. The rate of population growth was higher in the region than Queensland, which had a 16.82 per cent increase in the population between 2008 and 2017[25]. The historical population growth comparison of the region and Queensland is shown in Figure 13.

[23] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[24] Population derived from Estimated Resident Population counts by SA2 for each year between 2008 and 2017 (Cat No 3235).

[25] (Queensland Government Statistician's Office, 2018)

Figure 13: Population growth, 2008 to 2017, region and Queensland[26]



Sources: (Australian Bureau of Statistics, 2018), (Queensland Government Statistician's Office, 2018)

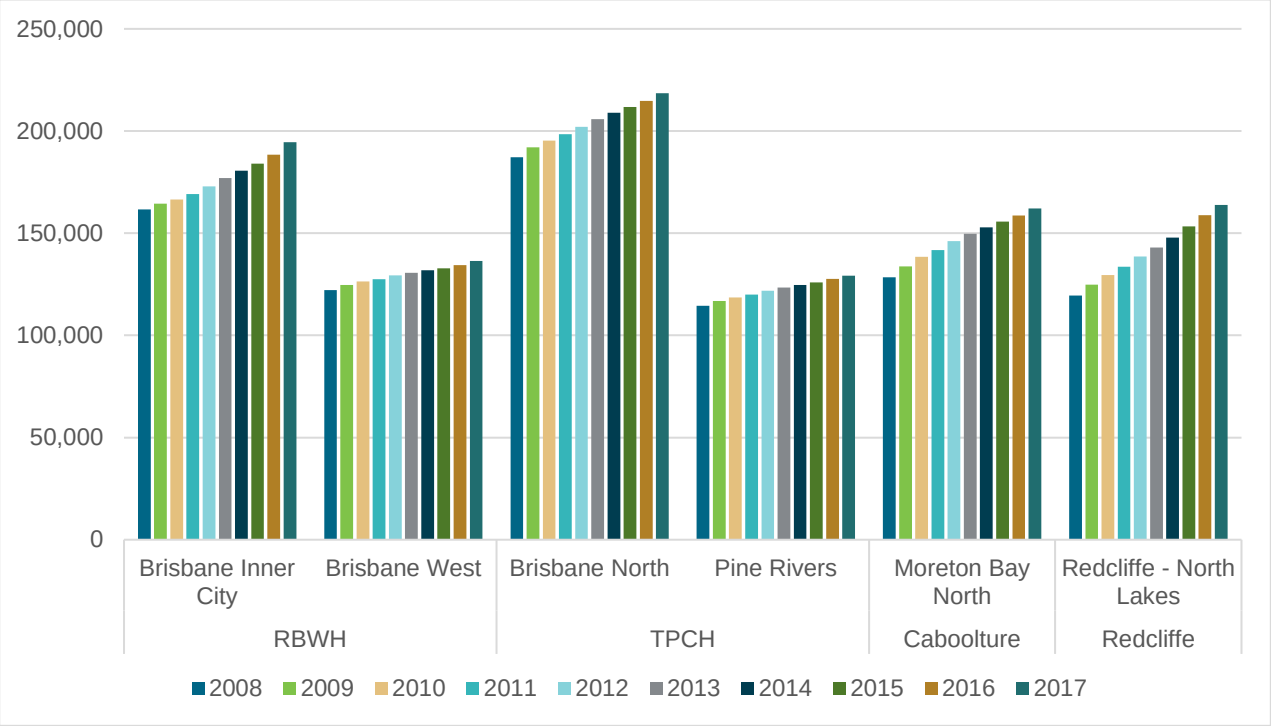
Between 2008 and 2017, the highest rate of population growth occurred in the northern parts of the region, with the population of the Redcliffe - North Lakes and Moreton Bay North sub regions growing by 37.25 per cent and 26.24 per cent respectively[27]. The lowest rates of population growth occurred in the Brisbane West and Pine Rivers sub regions, with 11.66 per cent and 12.93 per cent growth respectively[28]. Population growth by sub region can be seen in Figure 14.

[26] Region population is shown on the secondary axis.

[27] Population derived from Estimated Resident Population counts by SA2 for each year between 2008 and 2017 (Cat No 3235).

[28] Population derived from Estimated Resident Population counts by SA2 for each year between 2008 and 2017 (Cat No 3235).

Figure 14: Population growth by sub region and hospital catchment, 2008 to 2017

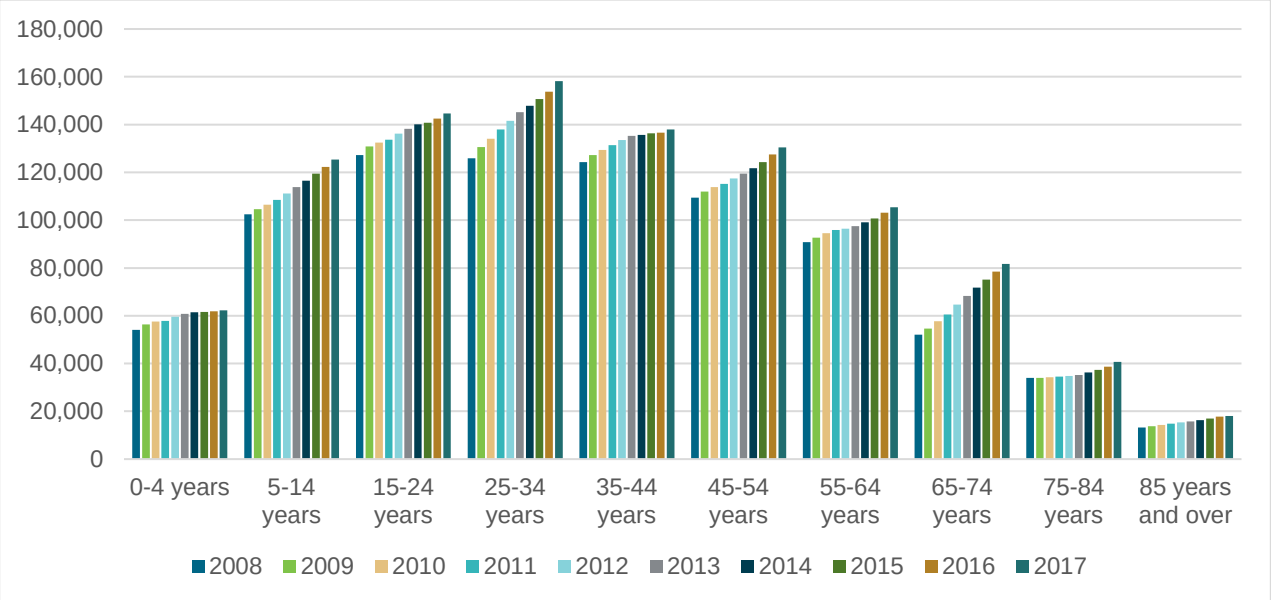


Source: (Australian Bureau of Statistics, 2018)

Between 2008 and 2017, there was strong growth in the population aged 65 years and over in the region, with an increase of 29.4 per cent. This growth was largely driven by the increase of people aged 65-74 years (36.3 per cent increase) and 85 years and over (26.8 per cent increase).

When expressed in raw numbers, population growth was highest among people aged 25-34 years (32,344 people), followed by people aged 65-74 years (29,627 people). The increase in population by age can be seen in Figure 15.

Figure 15: Population growth by age, 2008 to 2017, region

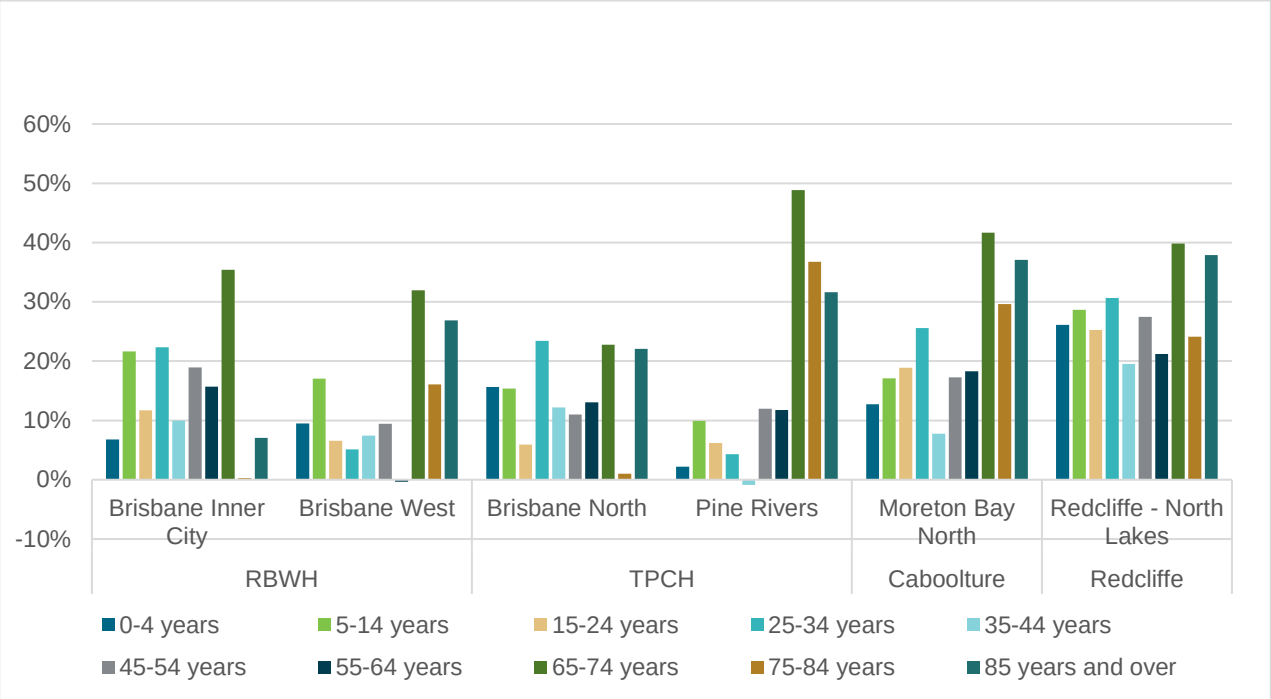


Source: (Australian Bureau of Statistics, 2018)

Within the region, population increases by age were not uniform across the region. There was a large increase in the number of people aged 65 years and over in the Pine Rivers, Moreton Bay North and Redcliffe – North Lakes sub regions. Increases in the younger population were higher in the Brisbane North, Moreton Bay North and Redcliffe – North Lakes sub regions.

High population growth across all ages in the Moreton Bay North and Redcliffe - North Lakes sub regions is consistent with ongoing community and residential development in both sub regions. These changes are highlighted in Figure 16.

Figure 16: Percentage growth of population by age, sub region and hospital catchment, 2008 to 2017



Source: (Australian Bureau of Statistics, 2018)

Projections 2016 – 2041

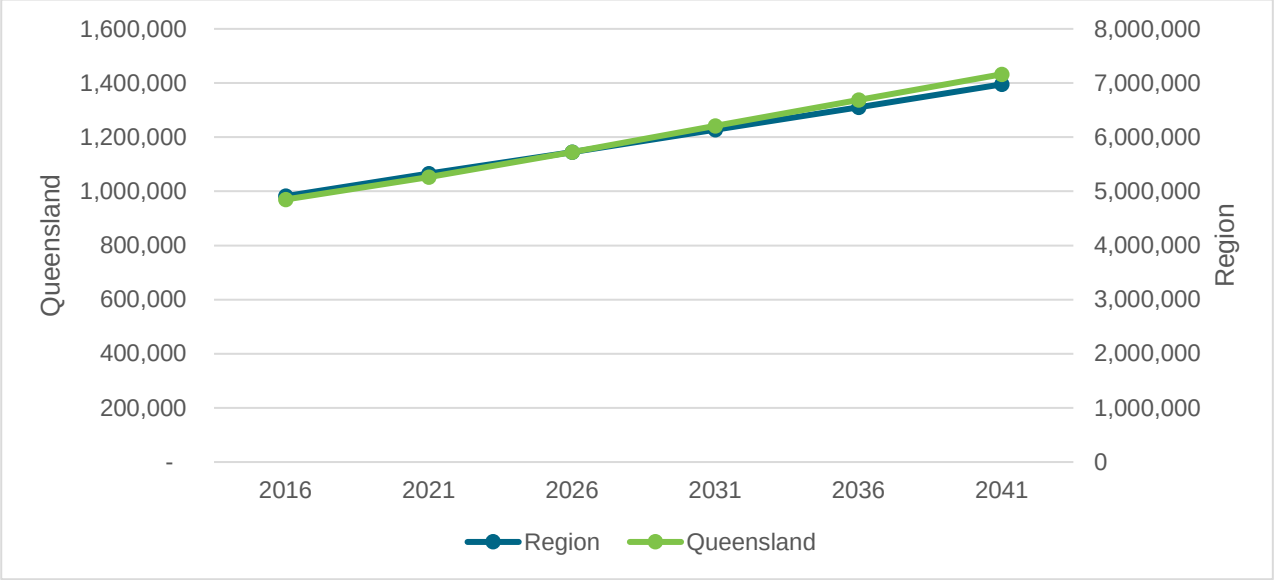
In 2041, the population of the region is projected to reach 1,395,044 people, an increase of 42.03 per cent from the 2016 estimated resident population of 982,199 people[29][30]. This is lower than the projected increase of 47.7 per cent in the Queensland population during the same time period[31], from 4,848,877 people to 7,161,661 people. The population projections for the region and Queensland are shown in Figure 17.

[29] (Queensland Government population projections, 2018 edition)

[30] Projections are medium series projections based on Statistical Area level 2.

[31] (Queensland Government population projections, 2018 edition)

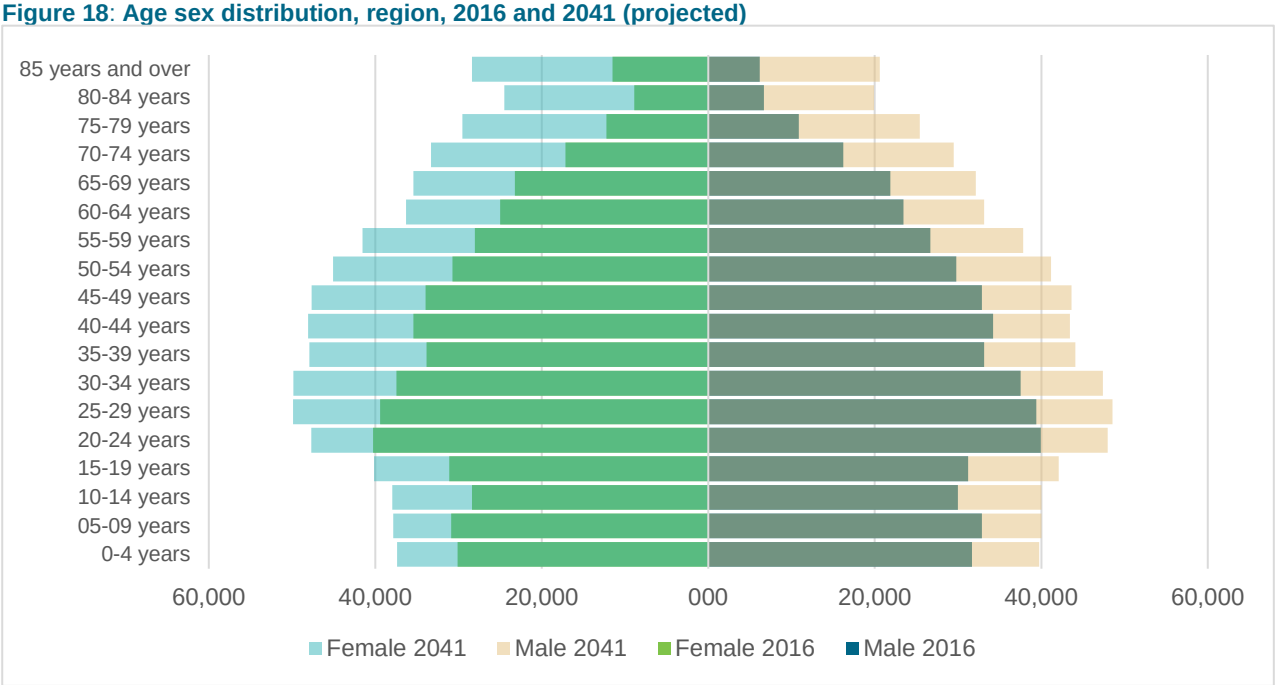
Figure 17: Population projections, 2016-2041, region and Queensland[32]



Source: (Queensland Government population projections, 2018 edition)

The region's population is projected to age considerably by 2041[33]. In 2016, 13.72 per cent of the region's population was aged 65 years and over. By 2041, it is estimated that one in five people in the region (19.98 per cent) will be aged 65 years and over[34]. By contrast, the proportion of people aged under 25 years is projected to decrease from 33.24 per cent in 2016 to 29.45 per cent in 2041. Figure 18 highlights the projected change in the structure of the population between 2016 and 2041.

Figure 18: Age sex distribution, region, 2016 and 2041 (projected)



Source: (Queensland Government population projections, 2018 edition)

[32] Queensland projection is shown on the secondary axis.

[33] (Queensland Government population projections, 2018 edition)

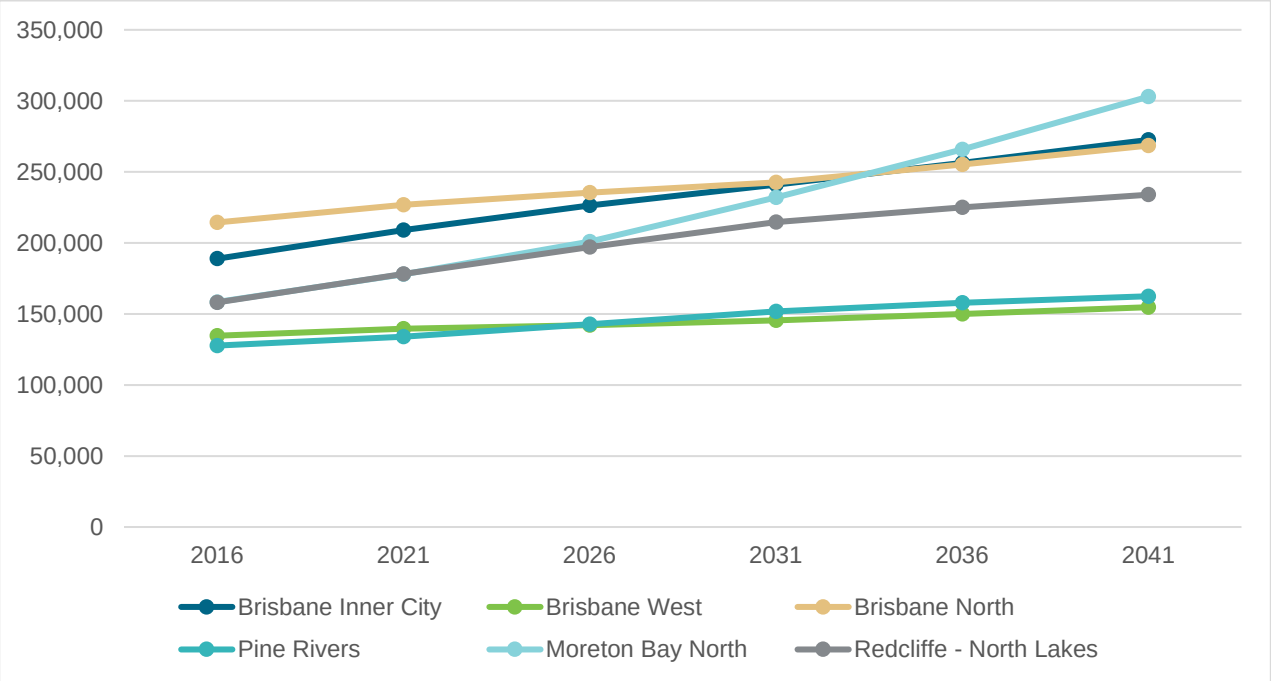
[34] (Queensland Government population projections, 2018 edition)

Within the region, projected population growth between 2016 and 2041 varies from 14.9 per cent in the Brisbane West sub region to 91.2 per cent in the Moreton Bay North sub region[35]. By 2041, the Moreton Bay North sub region is expected to be the most populous sub region in the region, with 302,926 people.

Population growth is expected to occur largely in the northern parts of the region, with almost two in five people residing in the region projected to be living in either the Moreton Bay North or Redcliffe – North Lakes sub regions as of 2041 (38.48 per cent), compared to one in three people as of 2016 (32.22 per cent).

The projected population growth rate by sub region are shown in Figure 19.

Figure 19: **Population projections by sub region, 2016 to 2041**



Source: **(Queensland Government population projections, 2018 edition)**

Analysis by hospital catchment highlights trends similar to sub regions. While The Prince Charles Hospital (TPCH) and Royal Brisbane and Women's Hospital (RBWH) catchments are projected to still be the most populous hospital catchments by 2041, they have the lowest projected rate of population growth of all hospital catchments (25 per cent and 33.6 per cent between 2016 and 2041 respectively)[36]. By contrast, the population in the Caboolture Hospital catchment is projected to increase by 91.2 per cent between 2016 and 2041[37]. The population in the Redcliffe Hospital catchment is projected to increase by 45.9 per cent between 2016 and 2041.

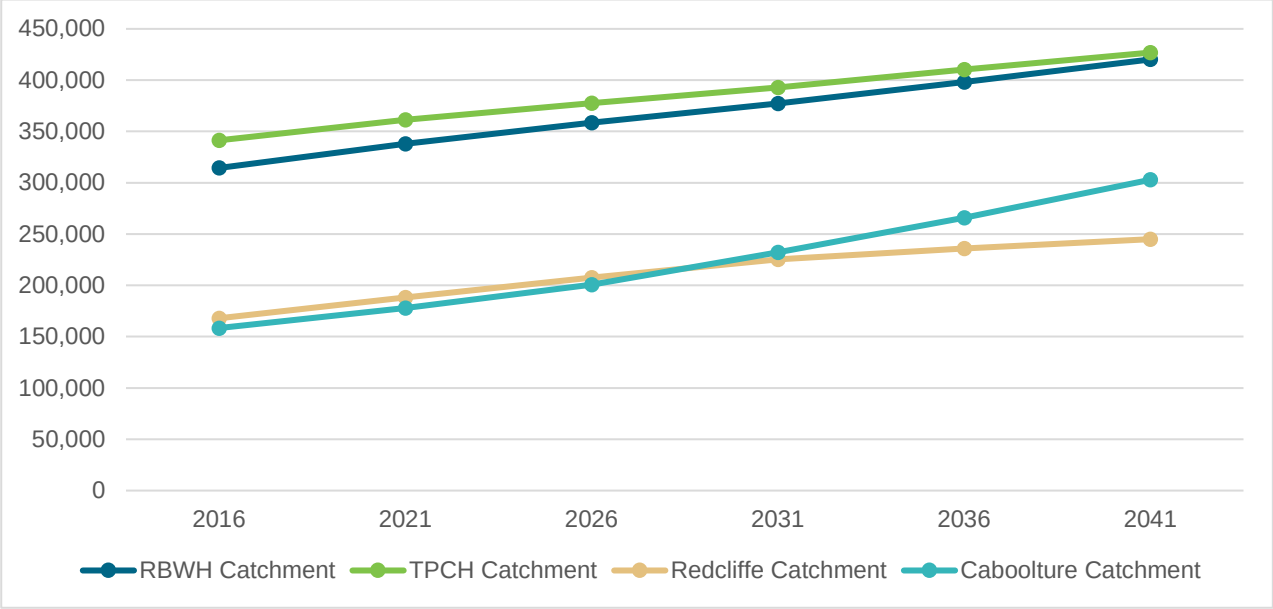
The projected population growth by hospital catchment are shown in Figure 20.

[35] (Queensland Government population projections, 2018 edition)

[36] (Queensland Government population projections, 2018 edition)

[37] (Queensland Government population projections, 2018 edition)

Figure 20: Population projections by hospital catchment, 2016 to 2041

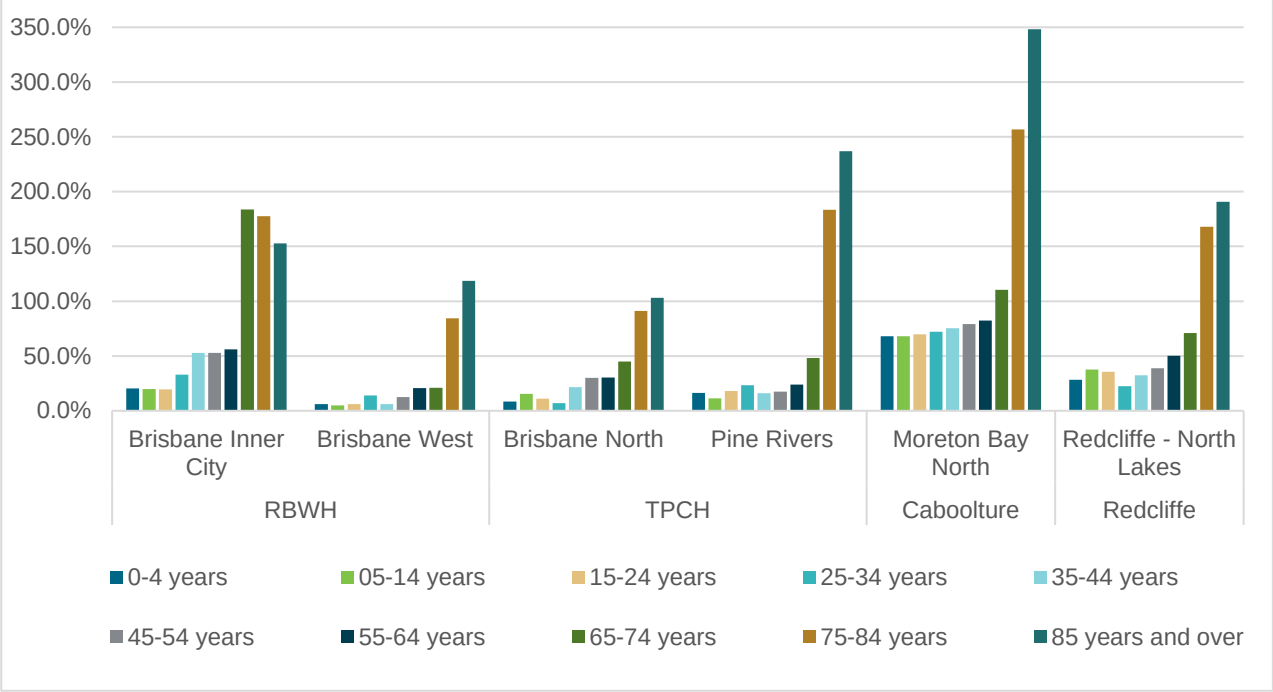


Source: **(Queensland Government population projections, 2018 edition)**

Within the sub regions, the projected population growth rates by age vary. There are likely to be significant increases in the population aged 65 years and over across all sub regions, and this is inline with population growth rates captured between 2008 and 2017, indicated in figure x.

Between 2016 and 2041, the Moreton Bay North sub region is projected to experience the highest population growth across all age groups, except for the cohort aged 65-74 years. The Brisbane Inner City sub region is projected to have the highest percentage growth of people aged 65 years and over. The Brisbane Inner City sub region is also projected to have a strong increase in the population aged 35-64[38]. The population percentage growth rates are highlighted in Figure 21.

Figure 21: Projected population growth by age and sub region, 2016 to 2041



Source: (Queensland Government population projections, 2018 edition)

[38] (Queensland Government population projections, 2018 edition)

Projections – median age

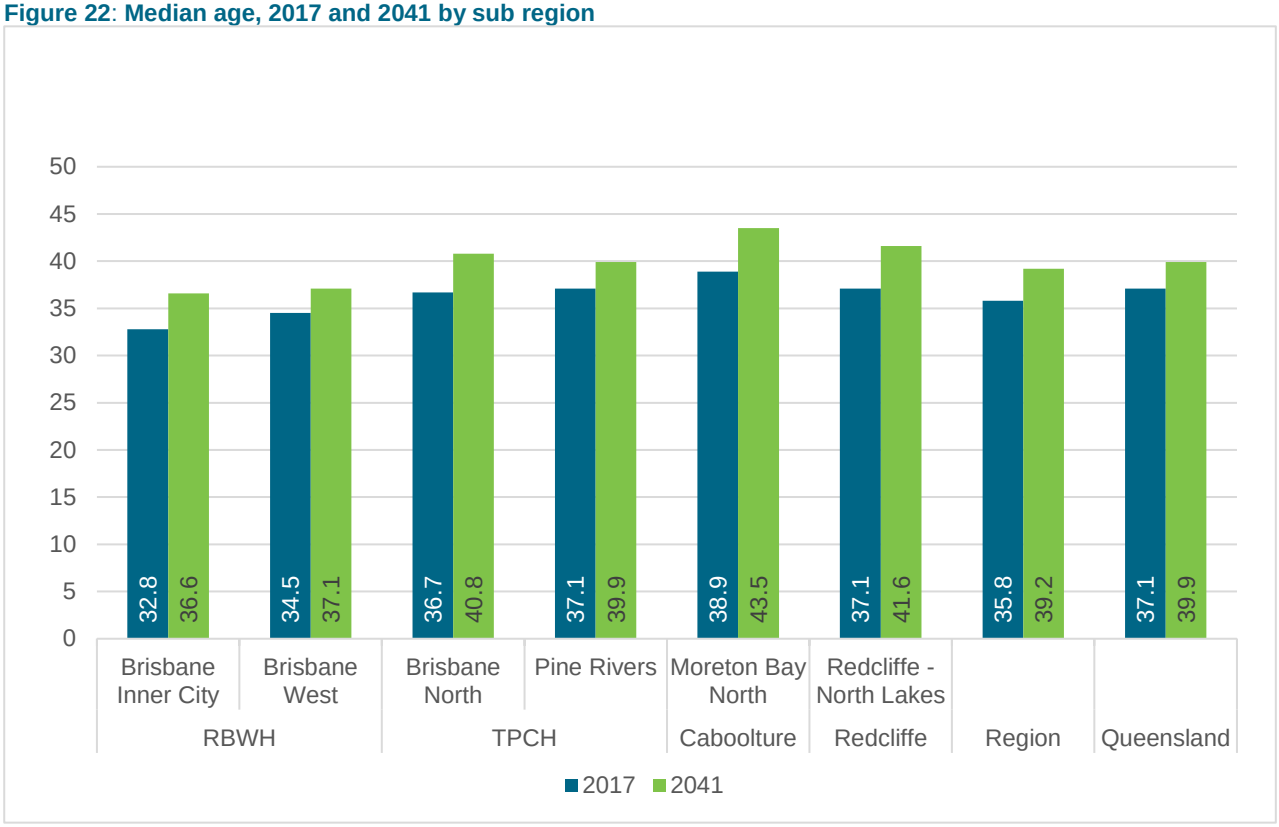
By 2041, the median age in the region is projected to be 39.2 years of age[39], slightly lower than the projected Queensland median of 39.9 years[40]. The projected median age in the region represents an increase of 3.4 years from the median age of 35.8 years in 2017. This increase is higher than the projected increase of 2.8 years in the Queensland median between 2017 and 2041.

Within the region, the projected median age as of 2041 varies from 36.6 years in the Brisbane Inner City sub region to 43.5 years in the Moreton Bay North sub region. The Moreton Bay North sub region is also expected to have the largest increase in median age, with the median projected to increase by 4.6 years between 2017 and 2041[41]. This is closely followed by an increase of 4.5 years in the Redcliffe – North Lakes sub region.

The projected increase in Moreton Bay North is driven largely by an ageing population in the Bribie Island and Beachmere – Sandstone Point SA2 areas, where the median age in 2041 is projected to be 67.7 years and 57.9 years respectively. In the Redcliffe – North Lakes sub region, the growth in median age is largely driven in the Redcliffe, Scarborough – Newport – Moreton Island and Margate Woody Point SA2 areas, all of which are projected to have a median age over 50 years by 2041 (57.9 years, 56.2 years and 50.2 years respectively).

Projected median age by sub region and comparison with the 2017 median is shown in Figure 22.

Figure 22: Median age, 2017 and 2041 by sub region



Source: **(Queensland Government Statistician's Office, Queensland Treasury, 2018)**

[39] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[40] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

[41] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Aboriginal and Torres Strait Islander population

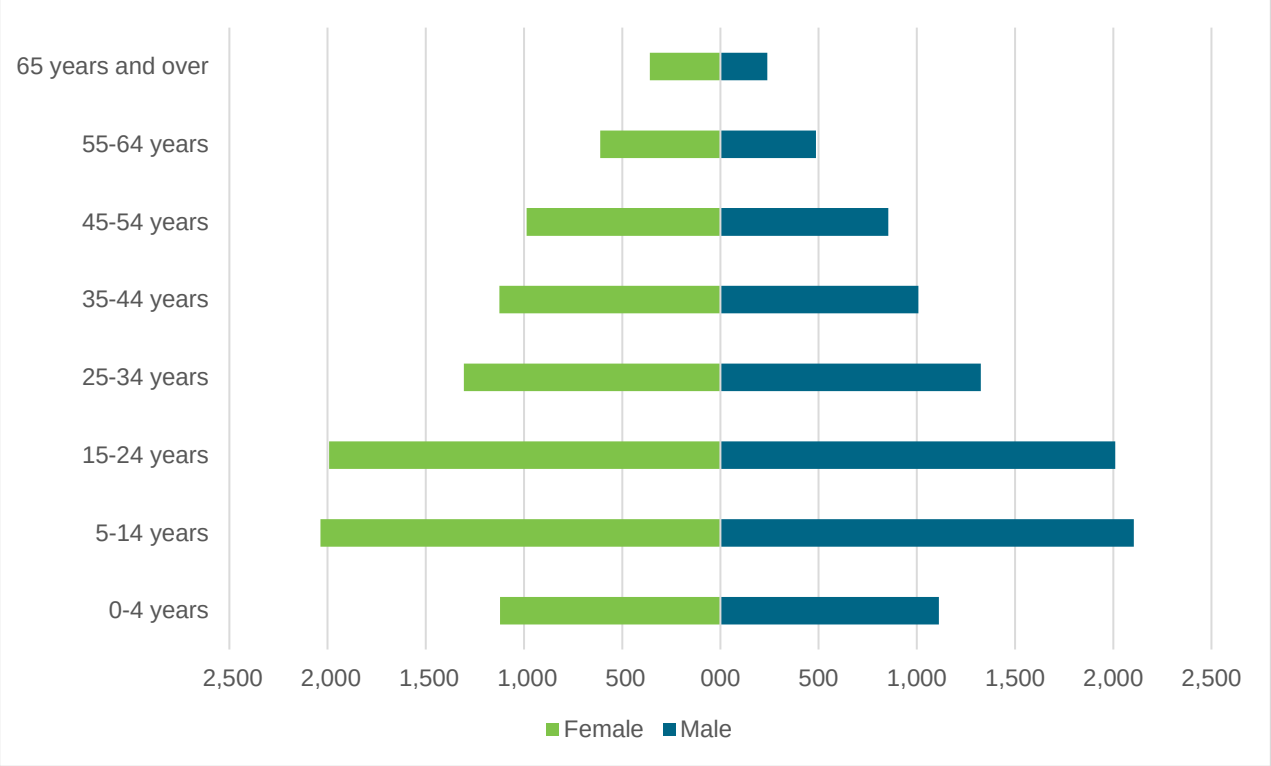
Age – sex distribution

As of the 2016 Census, there were 20,118 people of Aboriginal and Torres Strait Islander descent in the region[42]. This represents 2.1 per cent of the region's population. Between 2011 and 2016, the Aboriginal and Torres Strait Islander population residing in the region increased by 37.6 per cent, compared to 18 per cent nationally[43].

The Aboriginal and Torres Strait Islander population is largely concentrated in the northern areas of the region, particularly in the Caboolture, Morayfield and Deception Bay SA2 areas. There are also considerable populations of Aboriginal and Torres Strait Islander descent in the North Lakes and Brisbane North SA3 areas.

The region's Aboriginal and Torres Strait Islander population is a younger population, when compared to the general population. In 2016, over half (55.6 per cent) of the region's Aboriginal and Torres Strait Islander population was aged less than 25 years[44]. Females comprise 51.1 per cent of the Aboriginal and Torres Strait Islander population in the region, with the ratio of females to males increasing with age. This can be seen in Figure 23.

Figure 23: Aboriginal and Torres Strait Islander population by age and sex, region, 2016



Source: (Australian Bureau of Statistics, 2017)

[42] (Australian Bureau of Statistics, 2017)

[43] (Australian Bureau of Statistics, 2017)

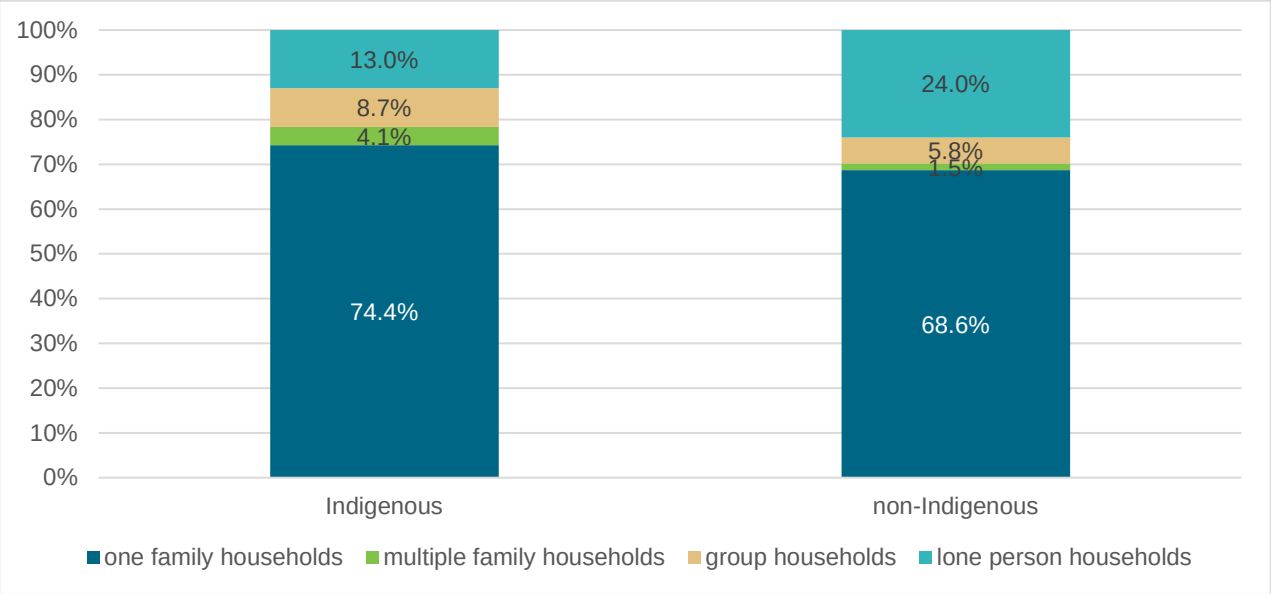
[44] (Australian Bureau of Statistics, 2017)

Household and family composition

In 2016, there were 9625 Indigenous households in the region, comprising 2.8 per cent of all households in the region[45]. Of the Indigenous households in the region, 74.4 per cent were single family households, 13 per cent were lone person households, 8.7 per cent were group households and 4.1 per cent were multiple family households[46]. Compared to Queensland, the region has a higher proportion of group households and a lower proportion of multiple family households[47].

Indigenous households in the region differ in structure to the non-Indigenous population. While lone person households make up almost one quarter of all non-Indigenous households, they are less common among Indigenous households. Indigenous households are also more likely to be group or multiple family households compared to non-Indigenous households[48]. The comparisons between Indigenous and non-Indigenous households in the region can be seen in Figure 24.

Figure 24: Household composition by Indigenous status, region, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2019)

Of the Indigenous one family households in the region, the couple family with children was most common, comprising 42.2 per cent of Indigenous one family households and 31.4 per cent of all Indigenous households in the region[49]. This was followed by one parent families (30.9 per cent of Indigenous one family households and 23 per cent of all Indigenous households), couple family with no children (23 per cent of Indigenous one family households and 17.3 per cent of all Indigenous households and other family (2.3 per cent and 1.7 per cent respectively)[50]. Indigenous family composition in the region is reasonably consistent with Indigenous family composition in Queensland.

Compared to the non-Indigenous population, in 2016 there was a higher percentage of Indigenous one parent families (23 per cent compared to 9.7 per cent). Indigenous families are also less likely to be couple families with no children compared to the non-Indigenous population (17.3 per cent and 26.9 per cent respectively)[51]. The differences in family composition can be seen in Figure 25.

[45] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

[46] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

[47] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

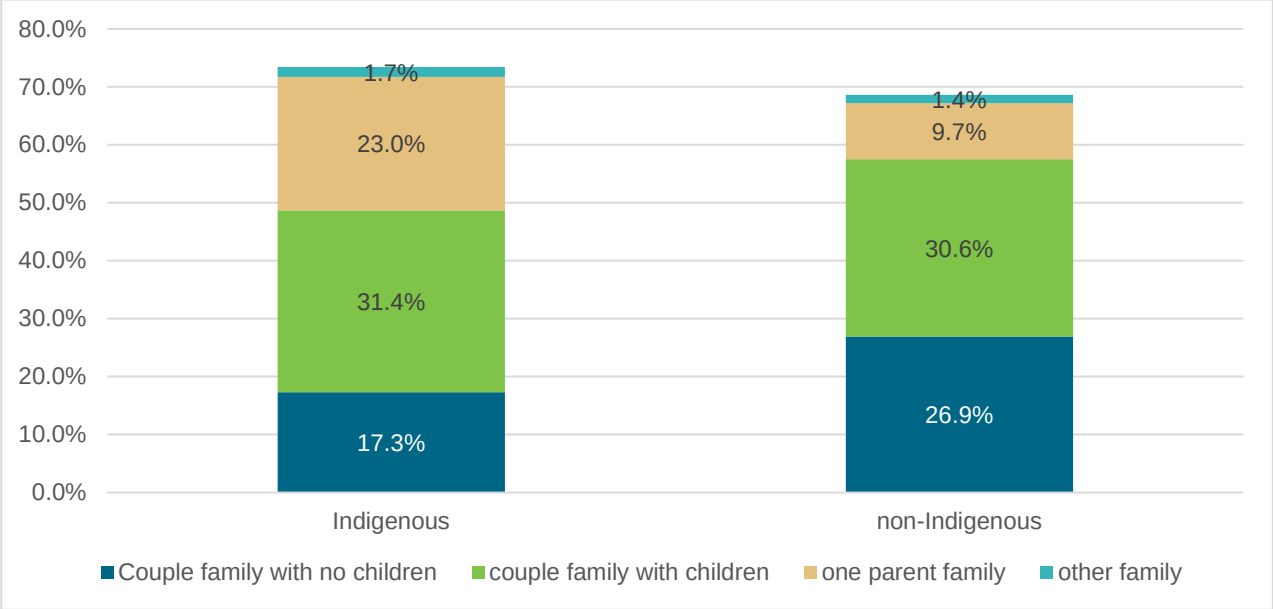
[48] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

[49] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

[50] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

[51] (Queensland Government Statistician's Office, Queensland Treasury, 2019)

Figure 25: Family composition by Indigenous status, region, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2019)

Change 2011 - 2016

Between 2011 and 2016, the Indigenous population in the region increased considerably. Within the region, the largest increases in the Indigenous population have occurred in the North Lakes and Caboolture SA3 areas. This represents an increase of 89.5 per cent (925 to 1754 people) and 55.1 per cent (2117 to 3283 people) respectively[52]. The Indigenous population also increased considerably in the Bald Hills – Everton Park and Hills District SA3 areas[53].

Increases in the Indigenous population also differed by age. Between 2011 and 2016, the Indigenous population aged 60-64 years increased by 78 per cent, followed by the 55-59 age cohort[54]. The total Indigenous population aged 50 years and over increased by 62.8 per cent[55]. This may indicate that the Indigenous population in the region is beginning to age. However, the Indigenous population is still a young population, as previously shown in figure 20. The population increase between 2011 and 2016 can be seen in Figure 26.

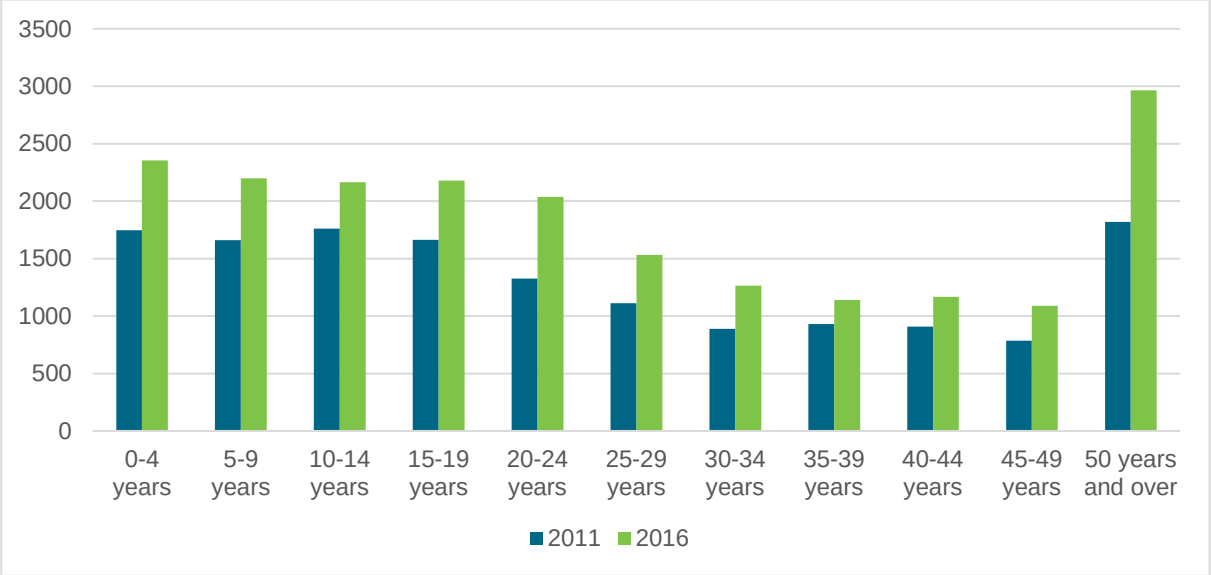
[52] (Australian Bureau of Statistics, 2017)

[53] (Australian Bureau of Statistics, 2017)

[54] (Australian Bureau of Statistics, 2017)

[55] (Australian Bureau of Statistics, 2017)

Figure 26: Aboriginal and Torres Strait Islander population by age, 2011 and 2016



Source: (Australian Bureau of Statistics, 2017)

Culturally and linguistically diverse population

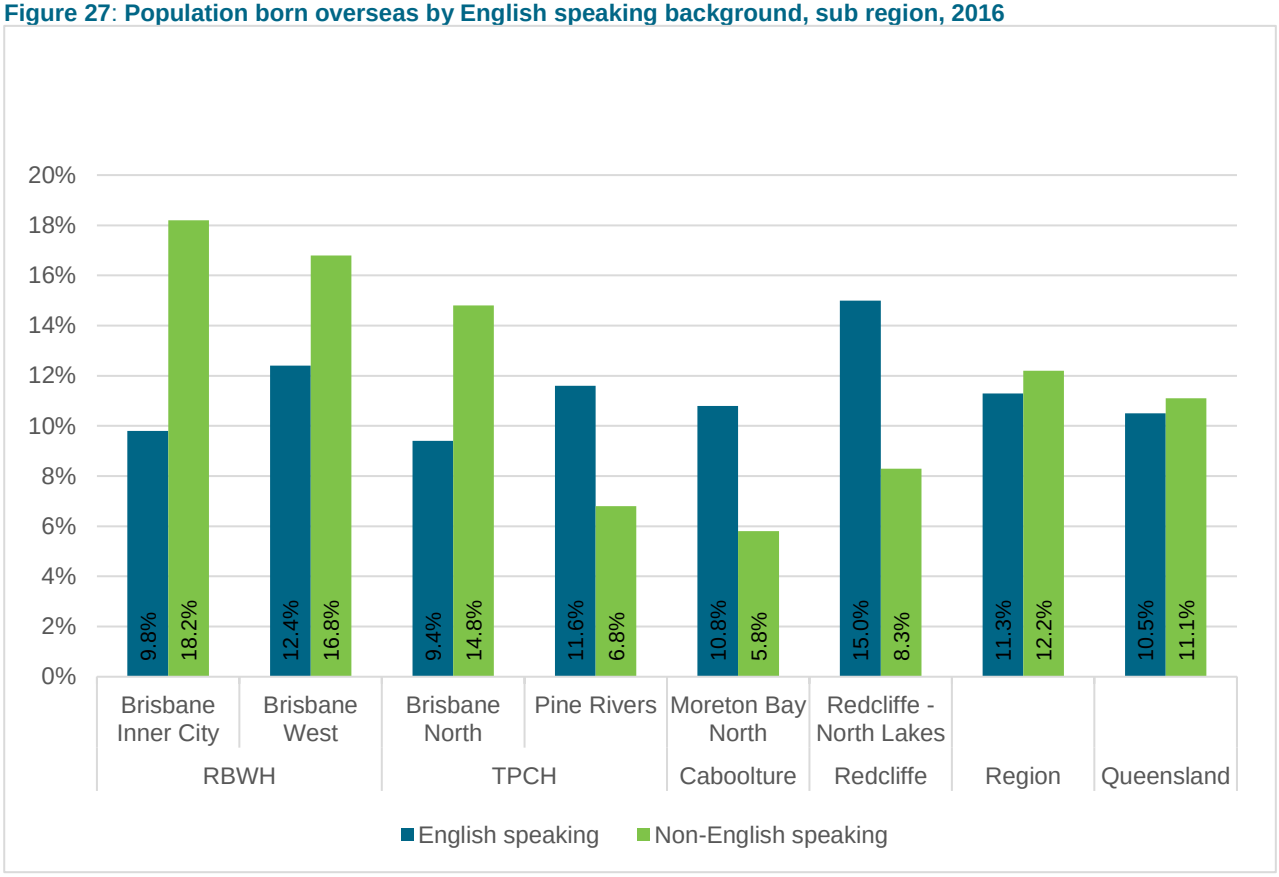
Country of birth

As of the 2016 Census, over one in five people residing in the region were born overseas (221,963 people or 23.5 per cent), a higher proportion of the population when compared with Queensland (21.6 per cent). Of the population residing in the region who were born overseas, 106,860 people were born in a country where English is the first language and 114,813 people were born in a country where English is not the first language (11.3 per cent and 12.2 per cent of the total population respectively).

Within the region, the population who were born overseas ranged from one in every six people in the Moreton Bay North sub region (25,653 people or 16.6 per cent) to almost one in every three people in the Brisbane West sub region (37,519 people or 29.2 per cent). The Brisbane inner City sub region also had a high proportion of the population who were born overseas, with 28.1 per cent of the sub region's population (50,148 people).

The makeup of the overseas born population differs greatly across sub regions, with 18.2 per cent of the Brisbane Inner City sub region born in a country where English is not the first language, compared to just 5.8 per cent of the population residing in the Moreton Bay North sub region. The patterns of residence for the population born overseas can be seen in Figure 27.

Figure 27: Population born overseas by English speaking background, sub region, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

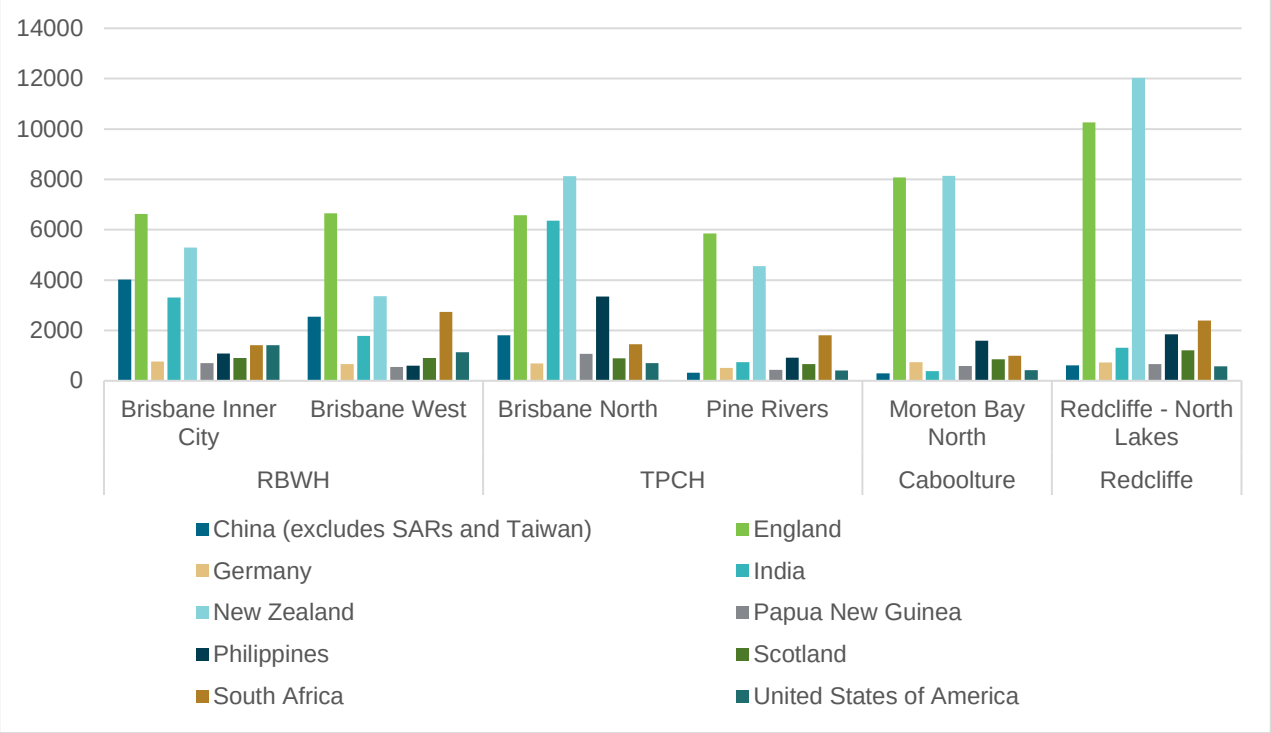
In 2016, the largest population groups born overseas residing in the region came from England (40,984 people), New Zealand (38,244 people) and India (13,784 people)[56]. While these population cohorts are evenly spread across the region, the highest number of people born in England and New Zealand reside in the Redcliffe – North Lakes sub region, as shown in figure x.

Within the region, the Brisbane North and Brisbane Inner City sub regions are home to a large number of people who were born in a country where English is not the first language. People born in India are most

[56] (Australian Bureau of Statistics, 2017)

likely to reside in the Brisbane North sub region, with over 6000 people as of 2016[57]. People born in China are most likely to reside in the Brisbane Inner City sub region, with over 4000 people as of 2016[58]. A large cohort of people born in China also resides in the Brisbane West sub region. Figure 28 also indicates that the Brisbane North and Moreton Bay North sub regions are home to a large number of people born in the Philippines.

Figure 28: Country of birth, selected countries by sub region and hospital catchment, 2016



Source: (Australian Bureau of Statistics, 2017)

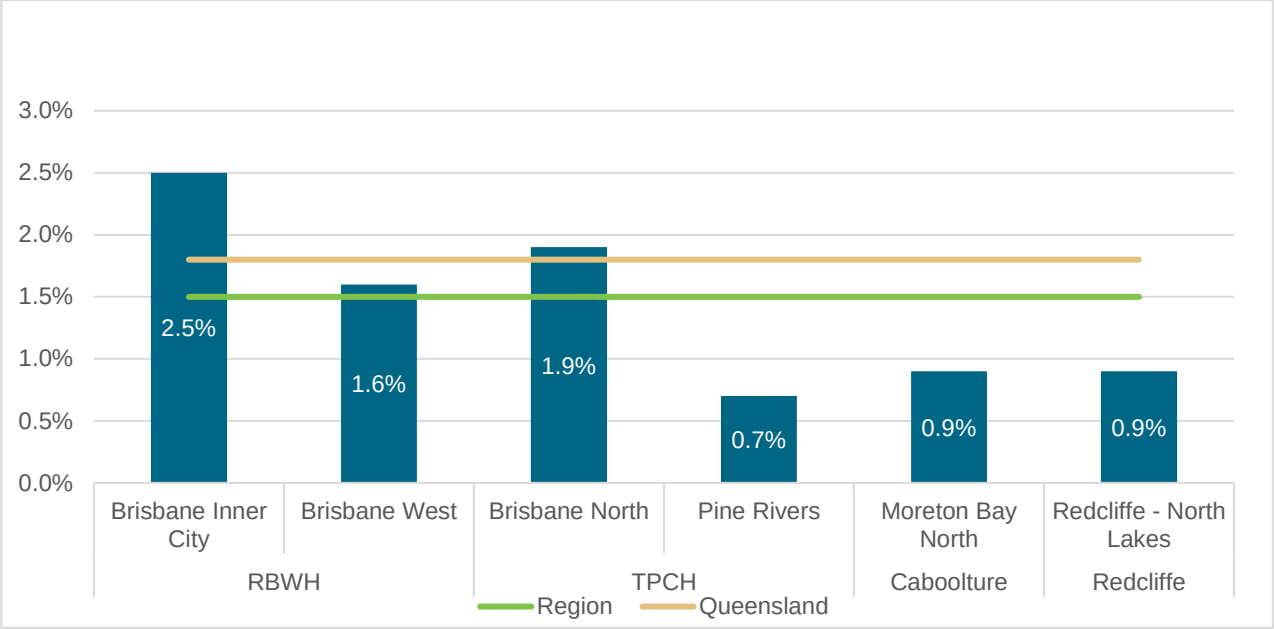
Language spoken at home

In 2016, one in eight people (116,152 people or 12.3 per cent) residing in the region spoke a language other than English at home[59]. Of this population, 102,183 people (10.8 per cent of the total population) speaks English very well or well and 13,981 people (1.5 per cent of the total population) speaks English not well or not at all[60]. The proportion of residents in the region that speak English not well or not at all is slightly lower compared to Queensland (1.8 per cent).

Within the region, the proportion of the population that speaks a language other than English at home and speaks English not well or not at all varies from 0.7 per cent in the Pine Rivers sub region (829 people) to 2.5 per cent in the Brisbane Inner City sub region (4442 people)[61]. This can be seen in Figure 29.

[57] (Australian Bureau of Statistics, 2017)
[58] (Australian Bureau of Statistics, 2017)
[59] (Queensland Government Statistician's Office, Queensland Treasury, 2018)
[60] (Queensland Government Statistician's Office, Queensland Treasury, 2018)
[61] (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Figure 29: Proportion of the population who speak English not well or not at all by sub region and hospital catchment, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

In 2016, Chinese was the most common language spoken at home in the region other than English, with 19,424 people reporting that they speak Chinese at home[62]. This was followed by Indo-Aryan (16,848 speakers) and Southeast Asian Austronesian languages (9414 speakers). There are also large cohorts of people who speak Iberian Romance (8054 people), Italian (5759 people) and Pacific Austronesian languages (5531 people)[63].

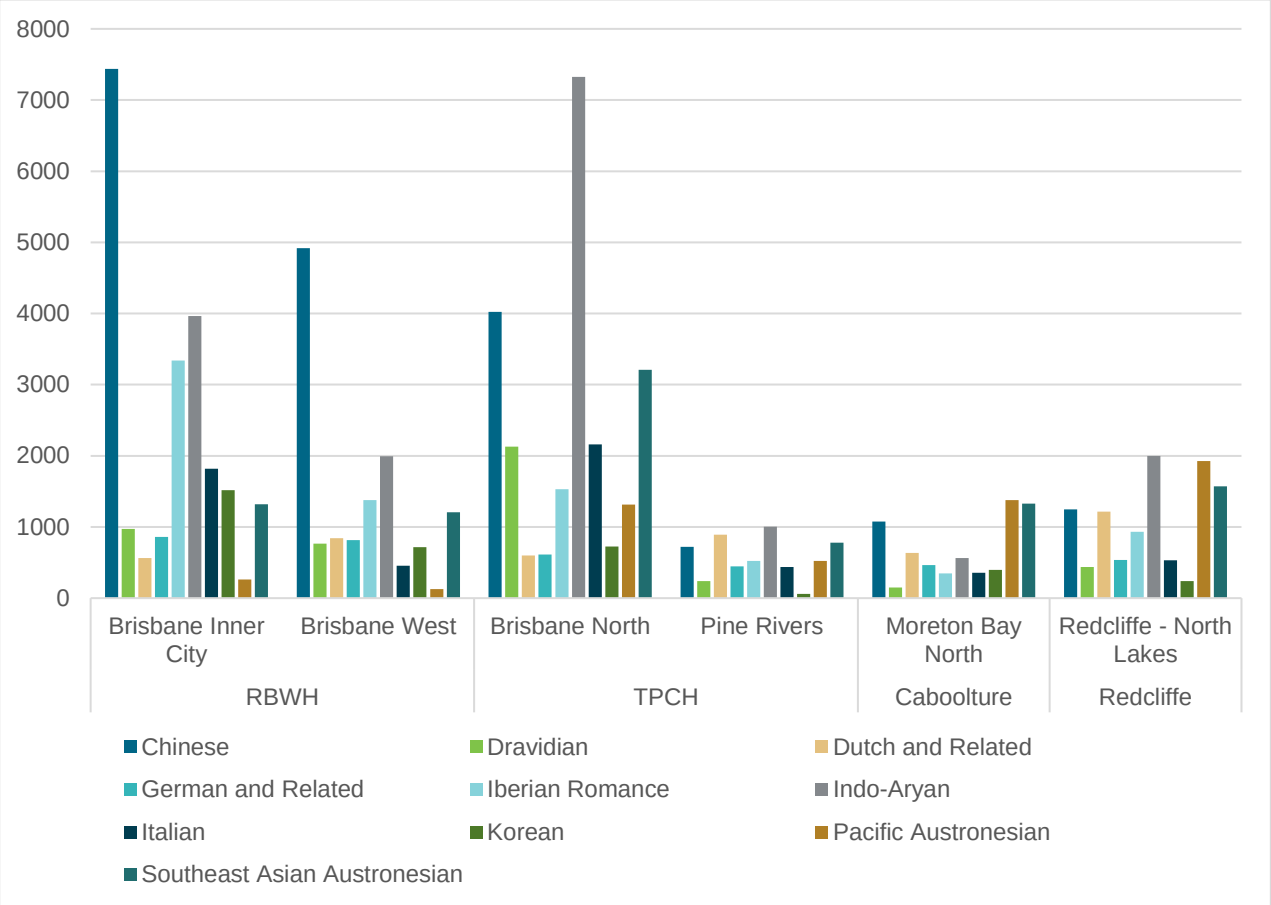
Within the region, people who speak Chinese at home most commonly reside in the Brisbane Inner City sub region (7437 people), followed by the Brisbane West and Brisbane North sub regions (4920 and 4022 people respectively). Indo–Aryan speakers most commonly reside in the Brisbane North sub region (7323 people) followed by the Brisbane Inner City sub region (3963 people). There is also a large cohort of Indo- Aryan speakers residing in the Redcliffe – North Lakes sub region, as shown in Figure 30. This figure also highlights that the majority of Pacific Austronesian speakers reside in the Redcliffe – North Lakes and Moreton Bay North sub regions (a total of 3305 people, equating to 59 per cent of Pacific Austronesian speakers)[64].

[62] (Australian Bureau of Statistics, 2017)

[63] (Australian Bureau of Statistics, 2017)

[64] (Australian Bureau of Statistics, 2017)

Figure 30: Language spoken at home (excluding English) by sub region and hospital catchment, 2016



Source: (Australian Bureau of Statistics, 2017)

Social determinants of health

The social determinants of health recognise that factors including a person's income, occupation, education, social support networks and housing status can affect their health and contribute to the health status of communities (Australian Institute of Health and Welfare, 2014a). The World Health Organization (WHO) describes these social determinants as being responsible for health inequality.

Index of Relative Socioeconomic Disadvantage

The Index of Relative Socioeconomic Disadvantage (IRSD) is a general socioeconomic index that summarises a range of information about the economic and social conditions of people and households within an area. The IRSD uses a range of variables including:

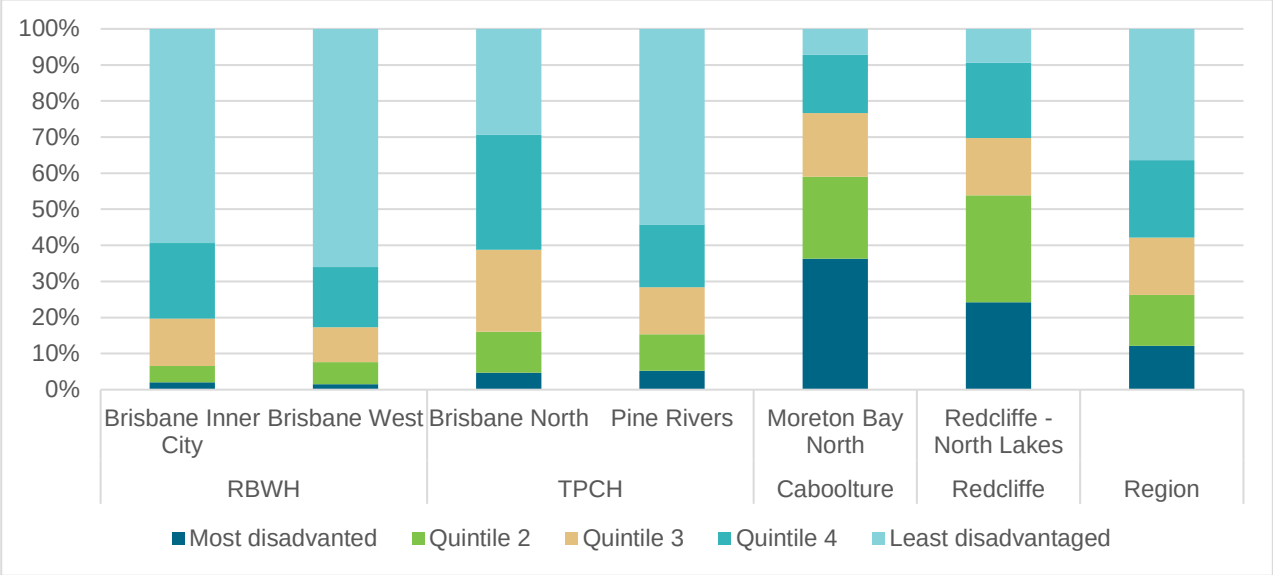
- educational attainment
- unemployment
- low incomes
- overcrowded living arrangements
- poor proficiency in English.

The IRSD is assigned to areas, not individuals. The index score is an arbitrary scale but allows the ranking of areas by levels of disadvantage and therefore an understanding of the distribution of socioeconomic characteristics across geographies. In this way, it enables assessment of the social determinants of health through comparison between areas at a single point in time. A common way of presenting IRSD data is by quintiles, with a low score indicating relatively greater disadvantage whilst a high score indicates a relative lack of disadvantage.

The region generally experiences low rates of socioeconomic disadvantage, with almost two in five people (36.4 per cent) residing in SA2s considered least disadvantaged (top quintile). However, one in eight people in the region (12.2 per cent) reside in areas considered as most disadvantaged (bottom quantile) and these areas are not evenly distributed across the region. There tends to be clustering of areas of socioeconomic disadvantage in the northern parts of the region, particularly in Moreton Bay North and Redcliffe - North Lakes sub regions.

Over one third of people (36.3 per cent) in Moreton Bay North live in areas considered most disadvantaged, along with 24 per cent of people in the Redcliffe - North Lakes sub region. Compared to these rates the other sub regions have low rates of people living in areas considered most disadvantaged with the next highest being Pine Rivers at 5.1 per cent and Brisbane North at 4.7 per cent. IRSD quintiles for the region are shown in Figure 31.

Figure 31: Index of Relative Socioeconomic Disadvantage by quintile, sub region and hospital catchment, 2016



Source: Australian Bureau of Statistics, 2017

Within the sub regions, there are five SA3s where over one quarter of the population live in areas considered most disadvantaged:

Bribie – Beachmere (41.2 per cent)
Caboolture (52.7 per cent)
Caboolture Hinterland (34.2 per cent)
Redcliffe (27.4 per cent)
Narangba – Burpengary (28.1 per cent).

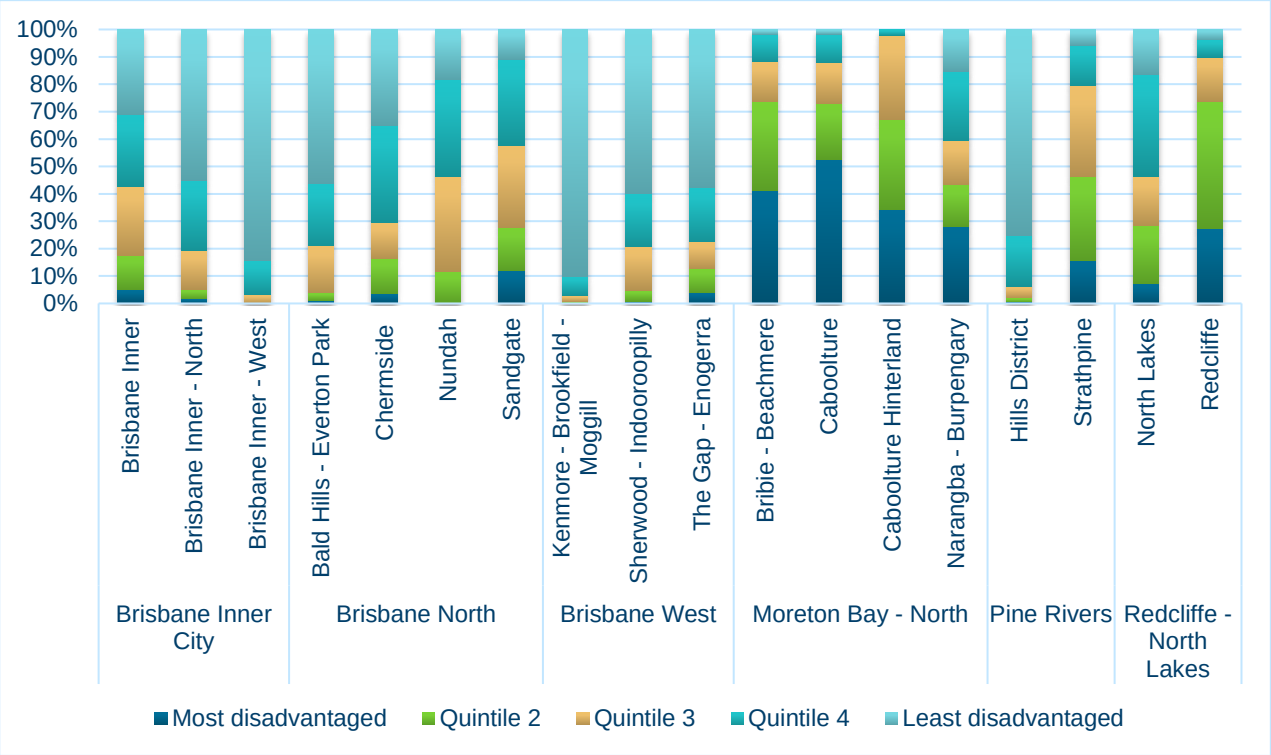
Conversely, there are seven SA3s where 50 per cent or more residents are considered least disadvantaged.

Brisbane Inner – North (55.1 per cent)
Bald Hills – Everton Park (56.3 per cent)
The Gap – Enoggera (57.8 per cent)
Sherwood - Indooroopilly (55.7 per cent)
The Hills District (75.3 per cent)
Brisbane Inner – West (84.4 per cent)
Kenmore - Brookfield - Moggill (90.1 per cent).

More detail on IRSD by statistical areas can be seen in Figure 32.

Regardless of the geographical area, it is important to recognise that socioeconomic status is not evenly distributed and as a result, not all residents will reflect the assigned socioeconomic status of the area.

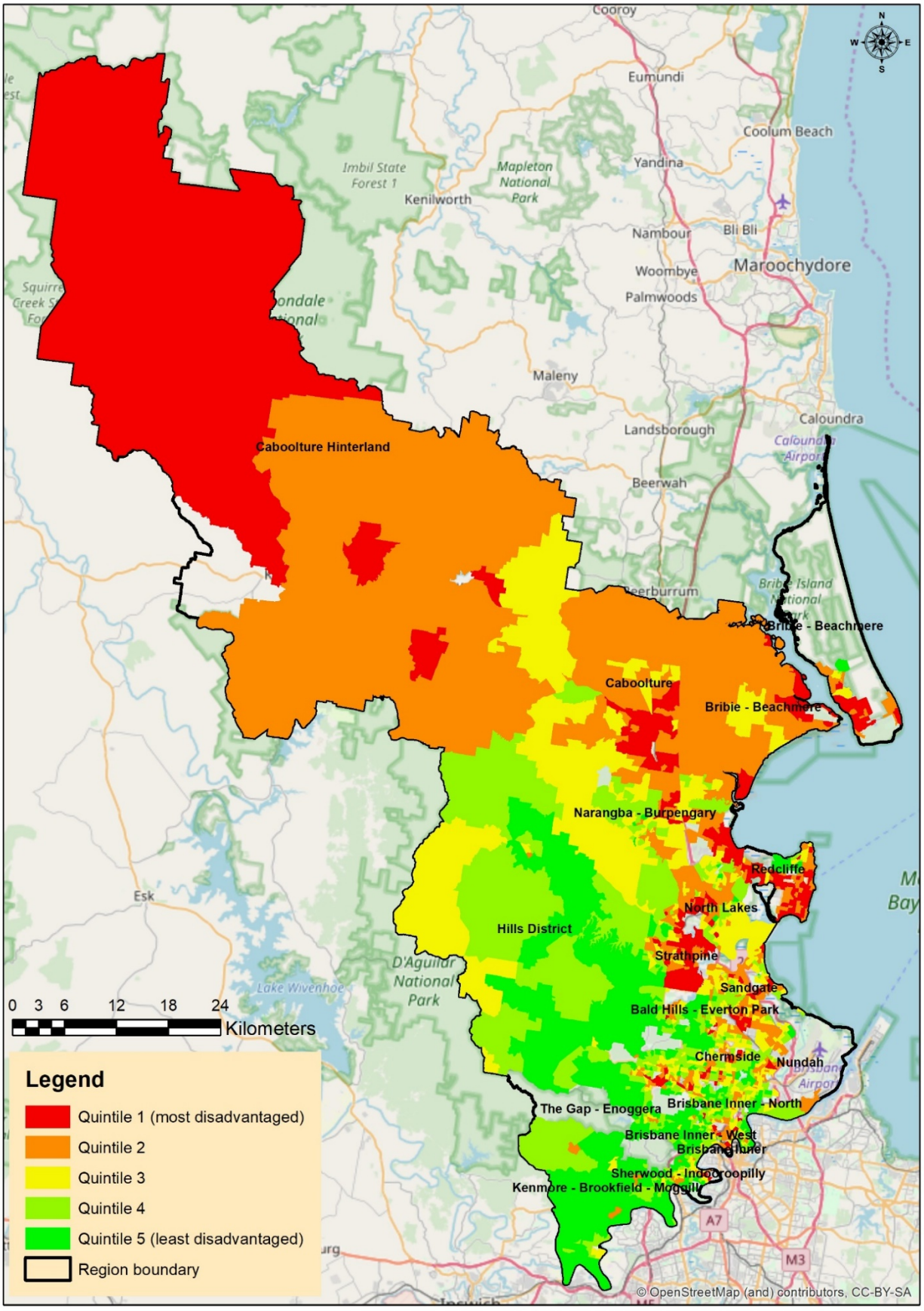
Figure 32: Index of Relative Socioeconomic Disadvantage by quintile, statistical area level three and sub region, 2016



Source: **(Australian Bureau of Statistics, 2017)**

Figure 33 overleaf shows the distribution of IRSD throughout the region. In this figure, IRSD for SA1s in the region have been assigned into quintiles, illustrating the areas in the region that have relatively higher socioeconomic disadvantage.

Figure 33: Index of relative socioeconomic disadvantage by Statistical Area level one



Source: Australian Bureau of Statistics, 2017

Education

Education is an important determinant of health. Education can positively affect levels of social engagement, which is important in generating a safer, healthier and more cohesive society. Higher levels of education are associated with better health outcomes (Marmot 2015, Commission of the Social Determinants of Health 2008), due in part to increased opportunity and reduced inequality. Education also helps to promote and sustain health lifestyles and positive choices, supporting and nurturing human development, relationships and personal, family and community wellbeing (Feinstein et al, 2006).

Childhood development

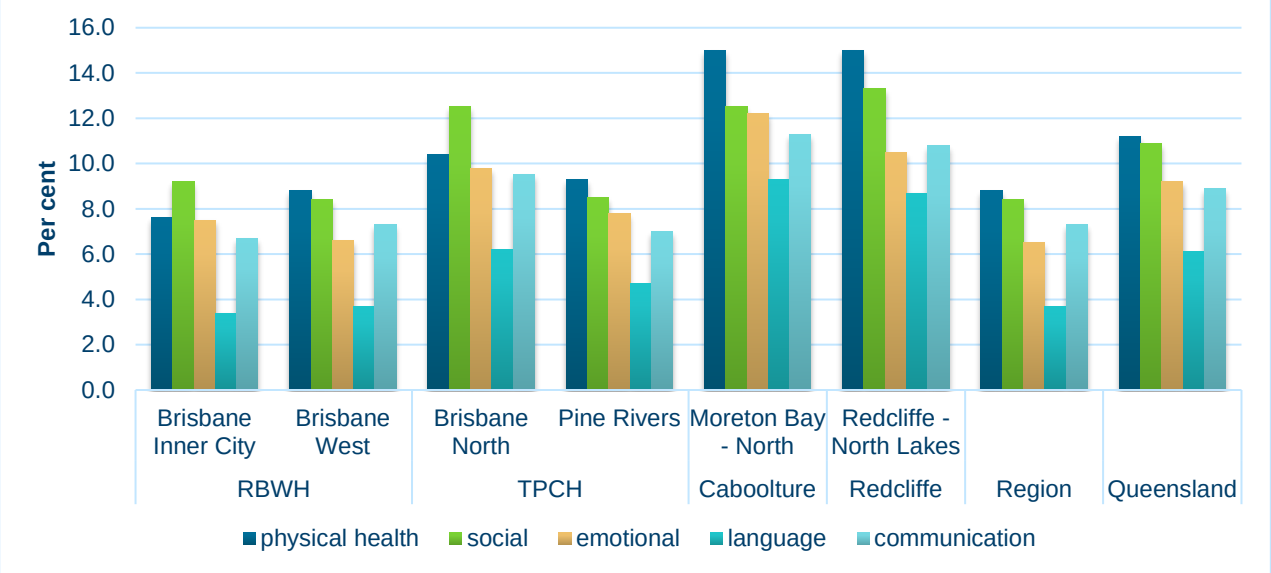
The Australian Early Development Census (AEDC) is an Australian Government initiative based on the Canadian Early Development Instrument. As a child enters their first year of full-time school, their teacher uses the Early Development Instrument to take a snapshot of the child's development. The AEDC instrument measures five domains of early childhood development which are predictors of a child's health, education and social outcomes. The five domains are[65]:

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills
- communication skills and general knowledge.

In the region, almost one in four children (23.9 per cent) are developmentally vulnerable across one or more of the domains and 12 per cent are developmentally vulnerable across two or more domains. These rates are slightly lower than the Queensland rates 26.2 per cent and 14 per cent respectively.

A high proportion of children in the Redcliffe - North Lakes (28.9 per cent) and Moreton Bay North (28 per cent) sub regions are developmentally vulnerable in one or more domains, particularly when compared to the region average. They also experience higher rates of developmental vulnerability in the physical health, emotional, language and communication domains. By contrast, children residing in the Brisbane West (19.7 per cent) and Brisbane Inner City (19.3 per cent) sub regions are less likely to be developmentally vulnerable in one or more domains. This trend is consistent across all domains and is highlighted in Figure 34.

Figure 34: Proportion of children who are developmentally vulnerable by domain by sub region and hospital catchment, 2015



Source: Queensland Government Statistician's Office, 2016

[65] Australian Early Development Census, 2015

Educational attainment

In the region, 683,583 people aged 15 years and older stated on the 2016 census that their highest level of schooling was:

- 4.1 per cent (30,545 people) did not go to school or have a Year 8 or below equivalent education
- 21.3 per cent (158,002 people) have a Year 9 or Year 10 or equivalent education
- 66.82 per cent (495,036 people) have a Year 11 or Year 12 or equivalent education.

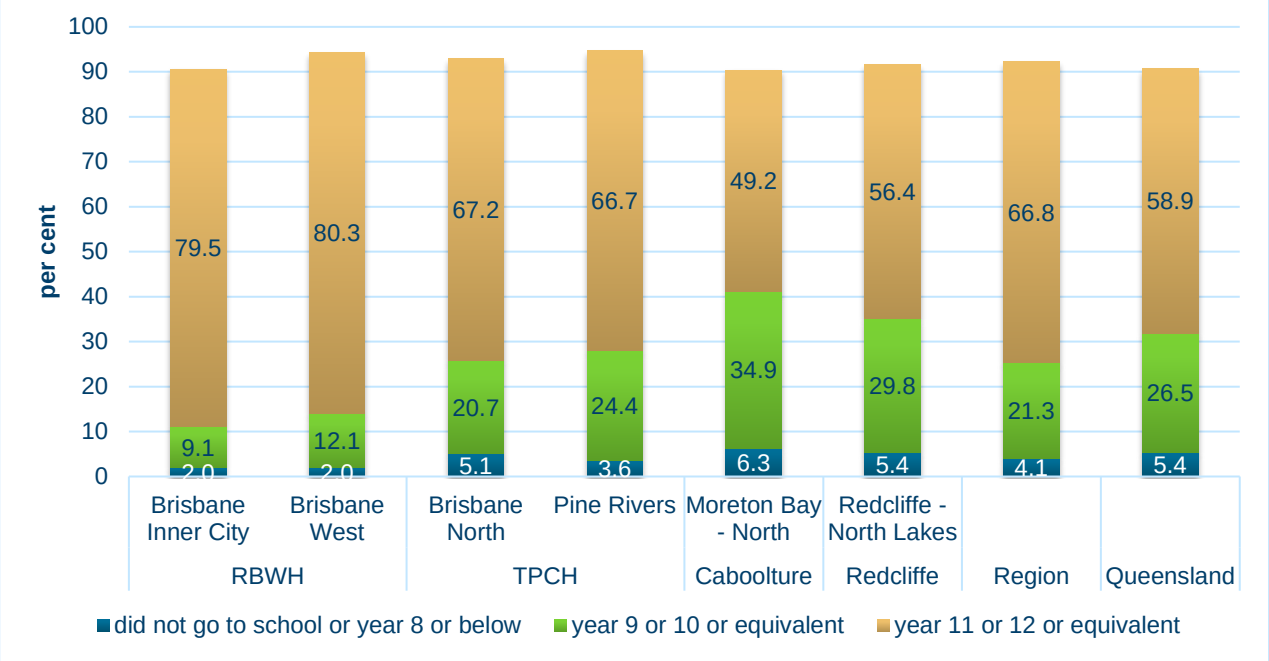
Note: non-reporting means that this indicator does not total 100 per cent.

Overall, the region has a higher rate of educational attainment for Year 11 or Year 12 or equivalent than the Queensland rate (66.8 per cent compared to 58.9 per cent). Within the region, Brisbane West (80.3 per cent) and Brisbane Inner City (79.5 per cent) have a higher proportion of residents who have a Year 11 or 12 or equivalent education.

Moreton Bay North has the highest proportion of the population who did not go to school or have a Year 8 or below education level, at 6.3 per cent.

These findings are detailed further in Figure 35.

Figure 35: **Highest level of schooling (15 years and over) by sub region and hospital catchment, 2016**



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

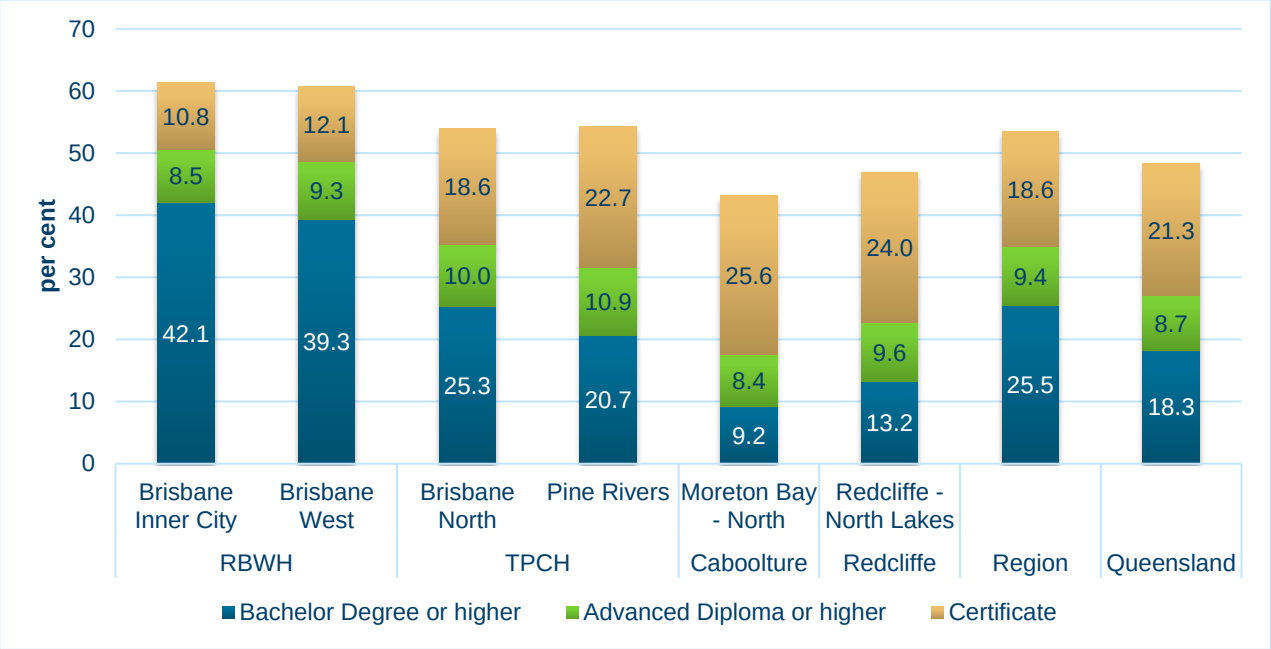
Post-secondary qualifications

Residents of the region as a whole possess higher levels of post-secondary qualifications compared to Queensland, with 62.7 per cent of residents over the age of 15 possessing a post-secondary qualification, compared to 59.1 per cent. One in four people (25.5 per cent) in the region have a Bachelor Degree or higher which is 1.4 times the Queensland rate of 18.3 per cent.

However, post-secondary education levels vary across the region, with people residing in the Brisbane Inner City sub region 1.3 times more likely to have a post-secondary qualification compared to the Moreton Bay North sub region (72 per cent compared to 54.5 per cent). A person residing in Brisbane Inner City is also 4.5 times more likely to possess a Bachelor Degree of higher compared to a person residing in Moreton Bay North (42.1 per cent compared to 9.2 per cent). This indicates a significant gap in education levels within the region. This is highlighted in Figure 36.

Geographically, the closer the sub region is to the city, the higher the proportion of residents who have a Bachelor Degree or higher.

Figure 36: Proportion of residents with a post-school qualification by sub region and hospital catchment, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Employment

Employment is an important social determinant of health. Marmot (2015) highlights that employment increases a sense of self-worth provided the individual is well paid and has agency in their employment. Higher levels of unemployment can lead to social isolation and poorer health outcomes among households, particularly households with children where no parent is employed (Commission for the Social Determinants of Health 2008, Marmot 2015).

Unemployment

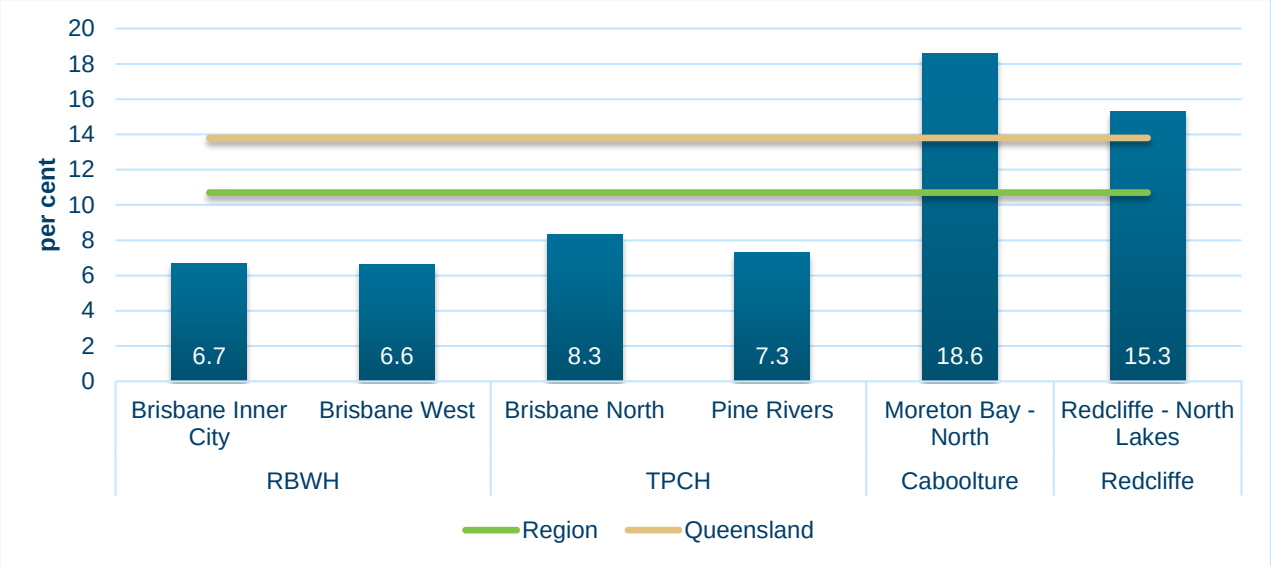
To be considered unemployed, the person must meet all of the following criteria:

- without work: total lack of work - not paid employment or self-employment
- actively seeking work: at least one active step to seek work has been taken during the period
- currently available for work: they must be available to start work during the given period – also known as 'ready for work' (e.g. without illness or family responsibilities).

In the region, 5.7 per cent of residents were unemployed in the June quarter 2018. This is lower than the Queensland rate of 6.0 per cent. The rate of unemployment is highest in Moreton Bay North at 8.3 per cent and lowest in Brisbane Inner City sub region at 3.8 per cent.

In 2016, over one in ten families (10.7 per cent) in the region were families with children where no parent was employed. As highlighted in Figure 37, the Moreton Bay North sub region has the highest proportion of families with children where no parent was employed, with over one in six families (18.6 per cent or 2945 families). This is followed by Redcliffe - North Lakes (15.3 per cent or 2631 families). These sub regions also have the highest rates of unemployment.

Figure 37: Families with children where no parent is employed by sub region and hospital catchment, 2016



Source: (Queensland Government Statistician's Office, Queensland Treasury, 2018)

Income

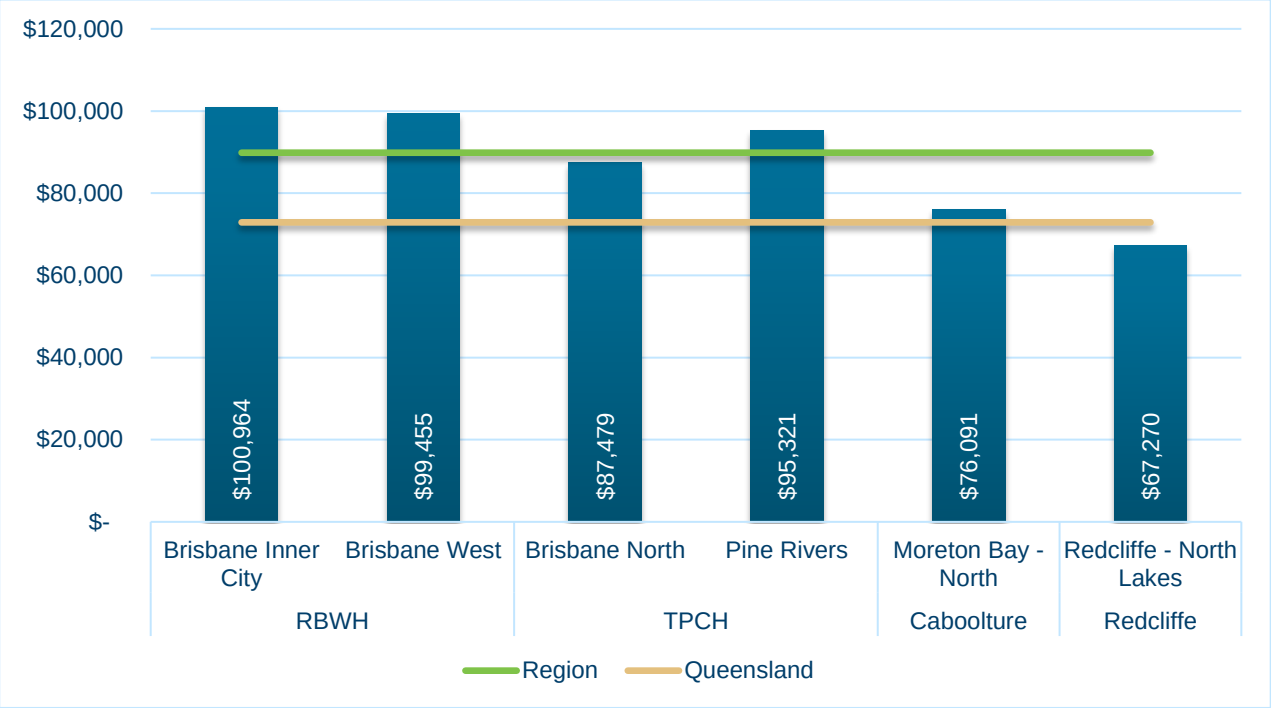
Median household income

Household income is a sum of the personal income of all household members aged 15 years and over[66].The median household income per annum in the region is nearly $90,000 and is more than the Queensland rate of $72,904[67].

The Brisbane sub regions have considerably higher median household incomes than the people residing in the northern parts of the region. The Redcliffe – North Lakes sub region has the lowest median household income per annum at just $67,270, which is almost $23,000 less than the overall region's rate. When comparing Redcliffe – North Lakes to Brisbane Inner City (the highest), median income is 1.5 times higher in the Brisbane Inner City sub region. These figures are highlighted in Figure 38 below.

[66] (Australian Bureau of Statistics, 2016)
[67] (Australian Bureau of Statistics, 2017)

Figure 38: **Median household income per annum by sub region and hospital catchment, 2016**



Source: **(Australian Bureau of Statistics, 2017)**

Median total family income

Family income differs to household income, as family income measures the total personal income of all family members aged 15 years and over within a household[68]. The median total family income per annum in the region is $99,783 and is more than the Queensland rate of $86,372[69].

Within the sub regions, the northern parts of the region having considerably lower median total family incomes than the people residing in the southern part of the region. The Moreton Baby North sub region has the lowest median total family income at $73,354 per year, which is over $26,000 less than the overall region. When comparing Brisbane Inner City (the highest) to Moreton Bay North, median total family income is nearly double ($56,950 difference).

Personal income by income quartile

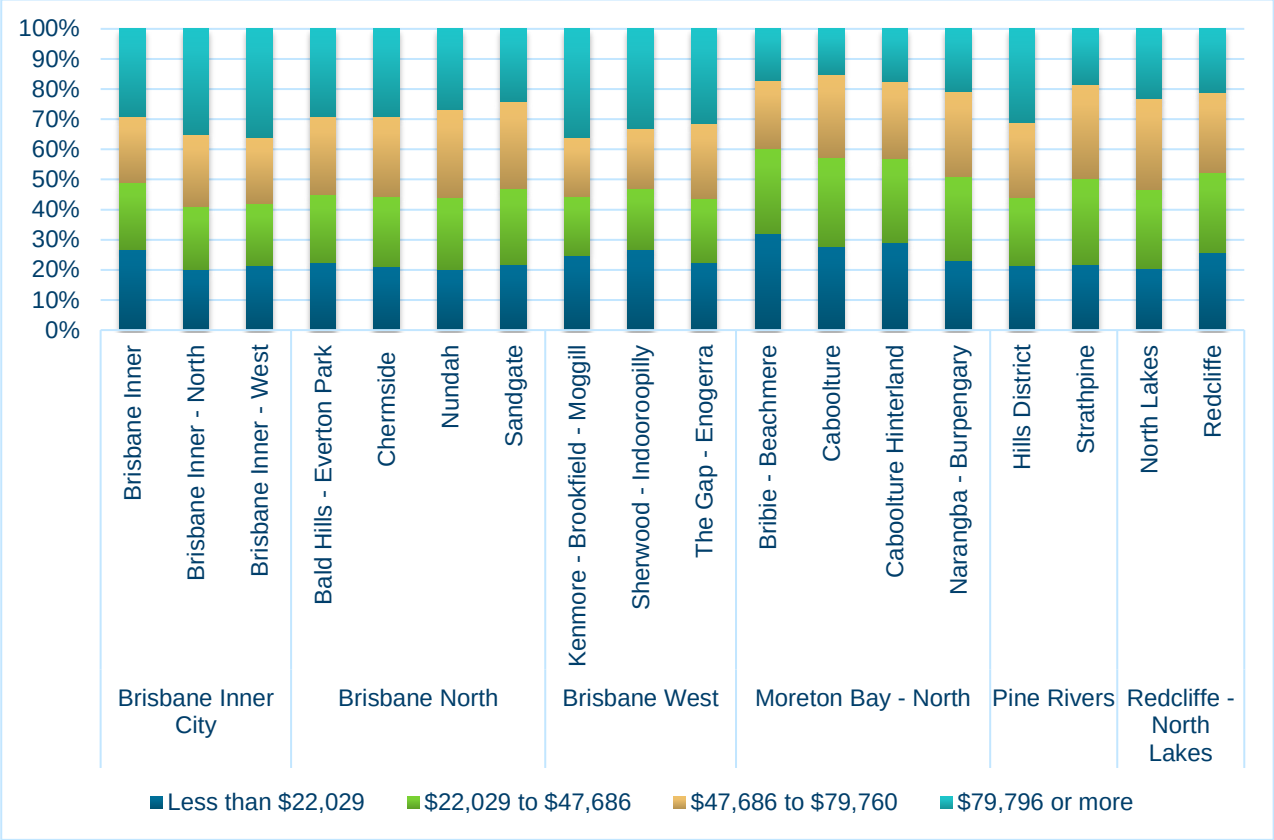
Personal income by quartile measures the distribution of income among the population. This is useful in determining income inequality across the region and identifying low income areas that may be at risk of poorer health outcomes.

While there is a larger proportion of people in the region earning more than $104,000 per annum compared to Queensland (9.7 per cent compared to 7.1 per cent), indicating higher incomes, there is significant variation within the region. Almost one-third of residents in the Bribie – Beachmere SA3 (32.1 per cent) earn less than $22,029 per annum, with a high proportion of people residing in Caboolture Hinterland, Brisbane Inner and Caboolture also earning less than $22,029 per annum, as indicated in Figure 39.

In addition, whilst a large proportion of people in the Brisbane Inner SA3 earn less than $22,029 per annum (26.9 per cent), over 29.1 per cent of residents in the same area earn more than $79,796 per annum, indicating a level of income inequality among residents of this area.

[68] (Australian Bureau of Statistics, 2016)
[69] (Australian Bureau of Statistics, 2017)

Figure 39: **Personal income by quartile by statistical area level three and sub region, 2015-16**



Source: **(Australian Bureau of Statistics, 2018)**

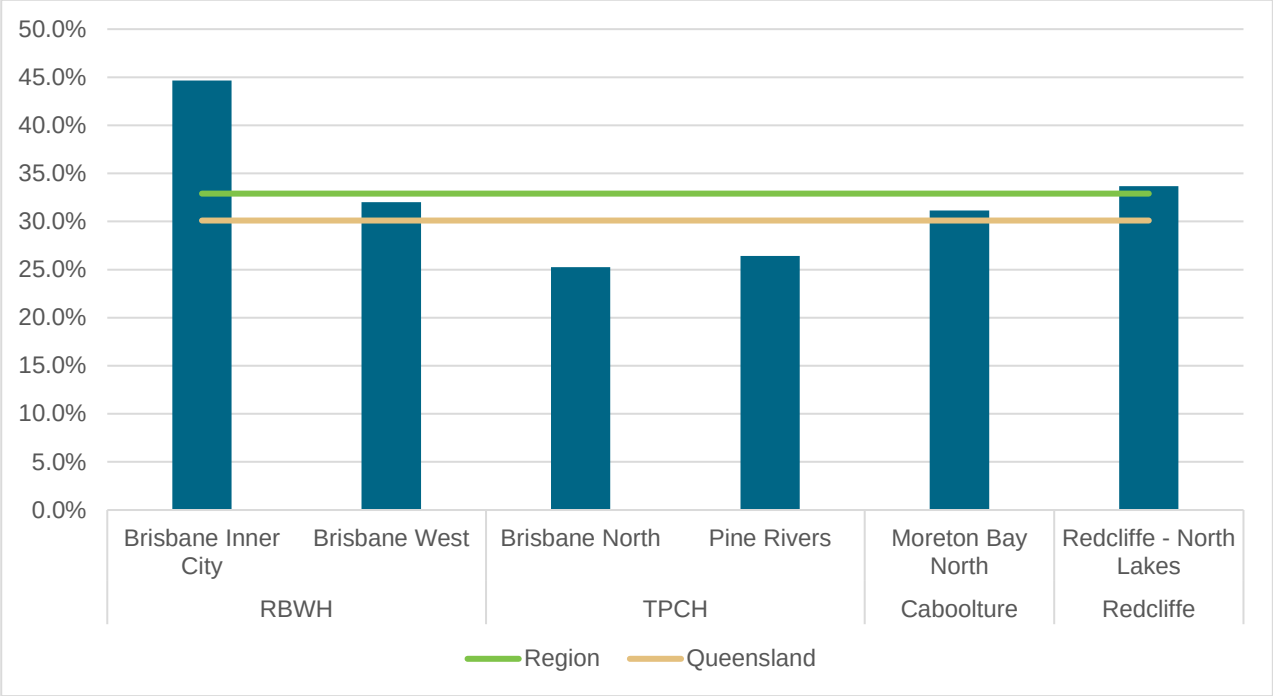
Financial stress (rental or mortgage)

Rental or mortgage stress occurs when the household is in the bottom 40 per cent of income distribution spends more than 30 per cent of their income on mortgage repayments or rent[70]. More than half of Australians identify finances as the cause of stress, which is also linked to unemployment rates[71].

Within the region, nearly one-third of low-income households (39,123 or 32.9 per cent) experience rental or mortgage financial stress. It is significantly higher in Brisbane Inner City with nearly half of all low income households (7762 or 44.7 per cent) experiencing rental or mortgage financial stress. Brisbane North households have the lowest rate within the region but it is still quite high at nearly one-quarter (2641 or 25.2 per cent) as evidenced in Figure 40.

[70] (Public Health Information Development Unit, 2019)
[71] (Australian Psychological Society, 2013)

Figure 40: Proportion of low-income households experiencing financial stress (rental or mortgage) by sub region and hospital catchment, 2016



Source: Public Health Information Development Unit, 2018

Homelessness

According to the Australian Bureau of Statistics[72], homelessness refers to a lack of security, stability, privacy, safety and ability to control living space within a particular environment. A person can be considered homeless when their living arrangement:

- is within a dwelling that is inadequate
- Has no tenure, or is short and not extendable
- Does not allow control of the living space and access to space for social reasons[73].

People experiencing homelessness are:

- More likely to have lower levels of educational attainment
- More likely to have a long term health condition
- Almost three times as likely to have been a victim of violence in the past 12 months
- More likely to reside in disadvantaged neighbourhoods
- Almost five times as likely to experience cash flow problems and ten times as likely to have skipped meals because they were unable to afford them
- More likely to be unemployed.[74]

Estimates of homelessness are officially measured through the Census of Population and Housing. Homelessness data is reported through a range of categories, under the categories 'homeless operational group' and 'other marginal housing'. These categories capture most situations in which a person is considered homeless or marginally housed. There are a range of limitations in the Census based approach

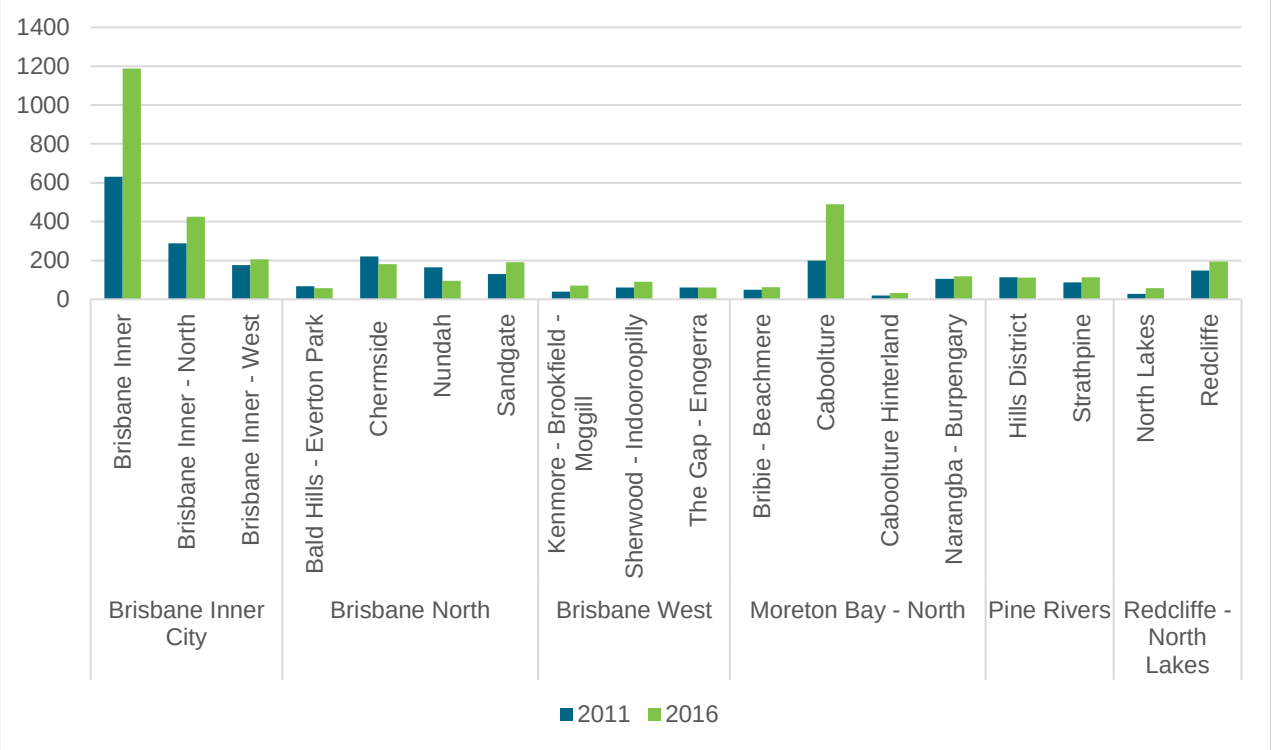
[72] (Australian Bureau of Statistics, 2012)
[73] (Australian Bureau of Statistics, 2012)
[74] (Australian Bureau of Statistics, 2012b)

to measuring homelessness, as not all people experiencing homelessness are captured in Census data[75][76]. As a result, data presented in this section are an underestimate of the homeless population within the region.

In 2016, there were an estimated 3744 people experiencing homelessness within the region. Between 2011 and 2016, the number of people experiencing homelessness increased by over 1000 people, from 2589 people in 2011[77].

Within the region, almost one-third of the population experiencing homelessness in 2016 resided in the Brisbane Inner SA3 (31.7 per cent). This was followed by the Caboolture SA3 (13.1 per cent) and the Brisbane Inner – North SA3 (11.3 per cent). Between 2011 and 2016, there was a considerable increase in the number of people in the Brisbane Inner, Caboolture, Brisbane Inner – North and Sandgate SA3s, as shown in Figure 41 below.

Figure 41: number of people experiencing homelessness by SA3 and sub region, 2011 and 2016



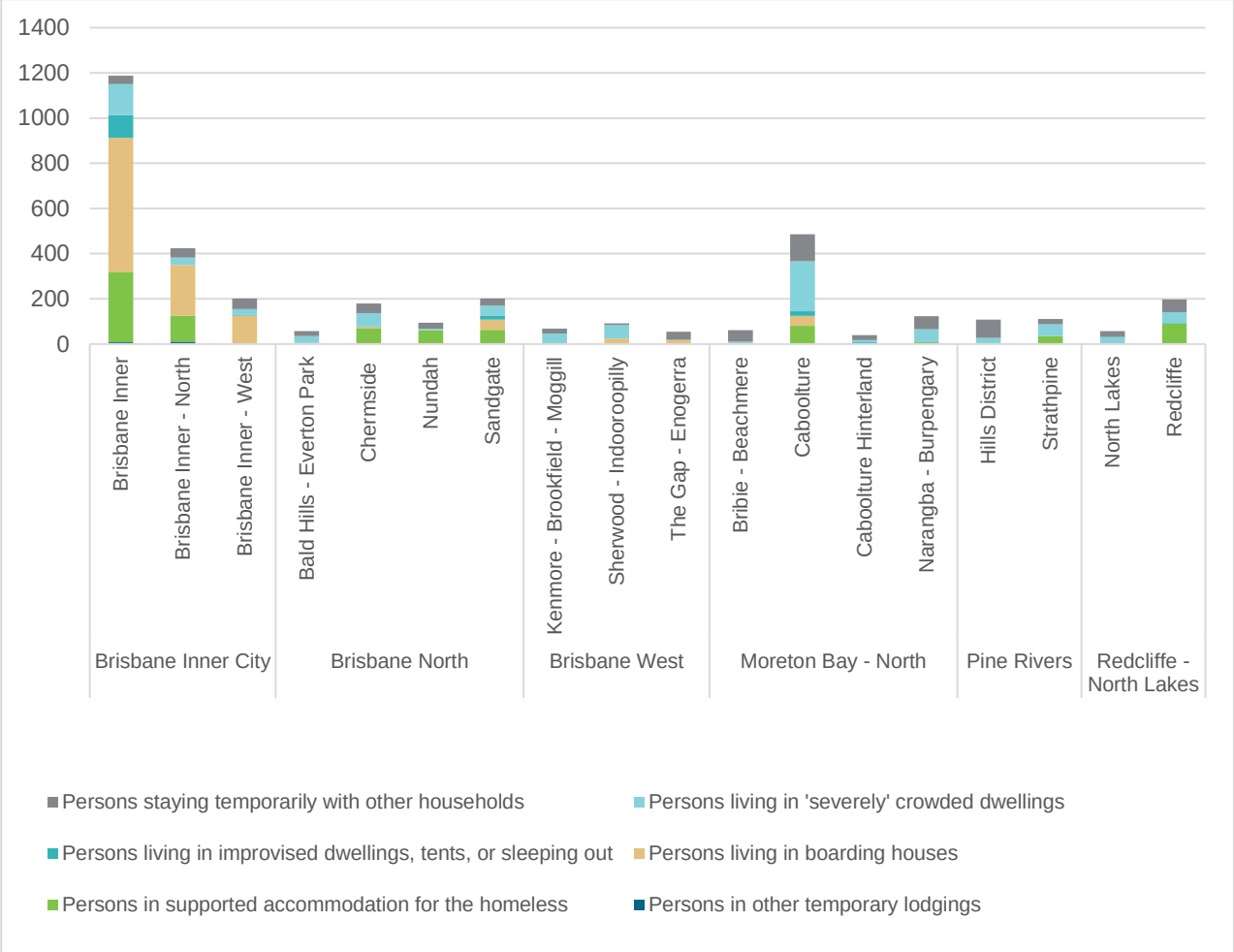
Source: (Australian Bureau of Statistics, 2018)

Of the population experiencing homelessness in 2016, the most common form of living arrangement was 'persons living on boarding houses' (1077 people or 28.8 per cent), followed by 'persons living in severely crowded dwellings' (885 people or 23.6 per cent) and 'persons in supported accommodation for the homeless' (846 people or 22.6 per cent).

Within the region, people living in boarding houses were more likely to reside within the Brisbane Inner and Brisbane Inner – North SA3s, while people living in severely crowded dwellings were more likely to reside in the Caboolture SA3. Aside from overcrowding, the most common living arrangement among people experiencing homelessness in the Caboolture SA3 were people staying temporarily with other households. A sizeable cohort of people either residing in supported accommodation for the homeless or temporarily with other households resided in the Redcliffe SA3. This can be seen in Figure 42 below.

[75] (Australian Institute of Health and Welfare, 2019)
[76] (Australian Bureau of Statistics, 2012)
[77] (Australian Bureau of Statistics, 2018)

Figure 42: number of people experiencing homelessness by living arrangement, SA3 and sub region, 2016



Source: (Australian Bureau of Statistics, 2018)

Health risk[78]

Health risk factors can affect an individual's quality of life and can signify an increased risk of developing a chronic condition.

Obesity

In 2015-16, 33.37 per cent of people in the region aged 18 years and over were overweight with a further 20.52 per cent classified as obese. This is lower than the Queensland population (23.8 per cent, CI 23.0-24.6). During the same period, an estimated 43.69 per cent of people aged 18 years and over were classified as having a healthy weight, with a further 2.42 per cent of adults classified as underweight.

Between 2009-10 and 2015-16, the proportion of people aged 18 years and over classified as overweight or obese increased from 52.53 per cent to 53.88 per cent. While this change is minimal, it indicates that there has been no significant movement in overweight/obesity rates in the last seven years. This is highlighted in Figure 43 below.

Figure 43: Four category body mass index (BMI), region, 2009-10 to 2015-16

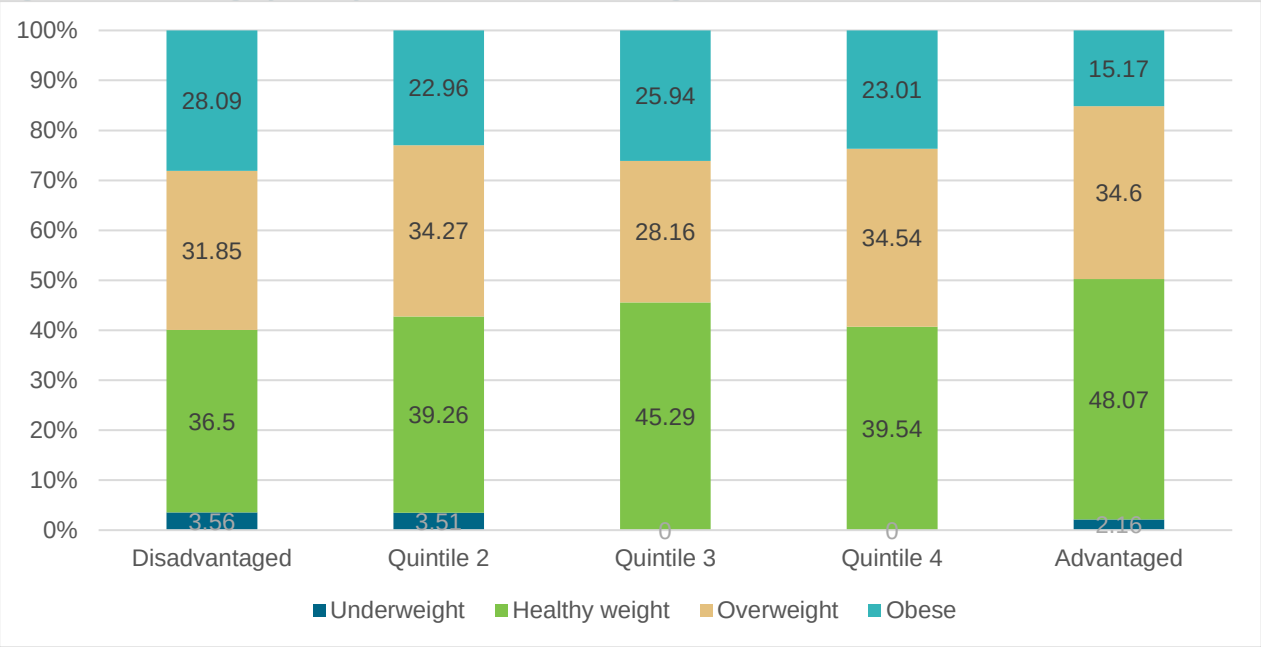
Source: Queensland Health, 2015

However, the percentage of the population who are overweight or obese is not uniform. In the region, people residing in more disadvantaged areas were 1.85 times more likely to be obese than people residing in more advantaged areas. In 2015-16, 28.1 per cent of people aged 18 years and over in the most disadvantaged socioeconomic quintile were classified as obese, compared to 15.2 per cent of people aged 18 years and

[78] All of the data in this section was sourced from Queensland Department of Health, 2015. Queensland survey analytics system (QSAS), Preventative health telephone survey series. Access date: 23 October 2018, URL: https://data.qld.gov.au/dataset/self-reported-health-status-srhs-survey-series

over in the most advantaged quintile. People aged 18 years and over in the most advantaged quintile were also more likely to be a healthy weight, as shown in Figure 44.

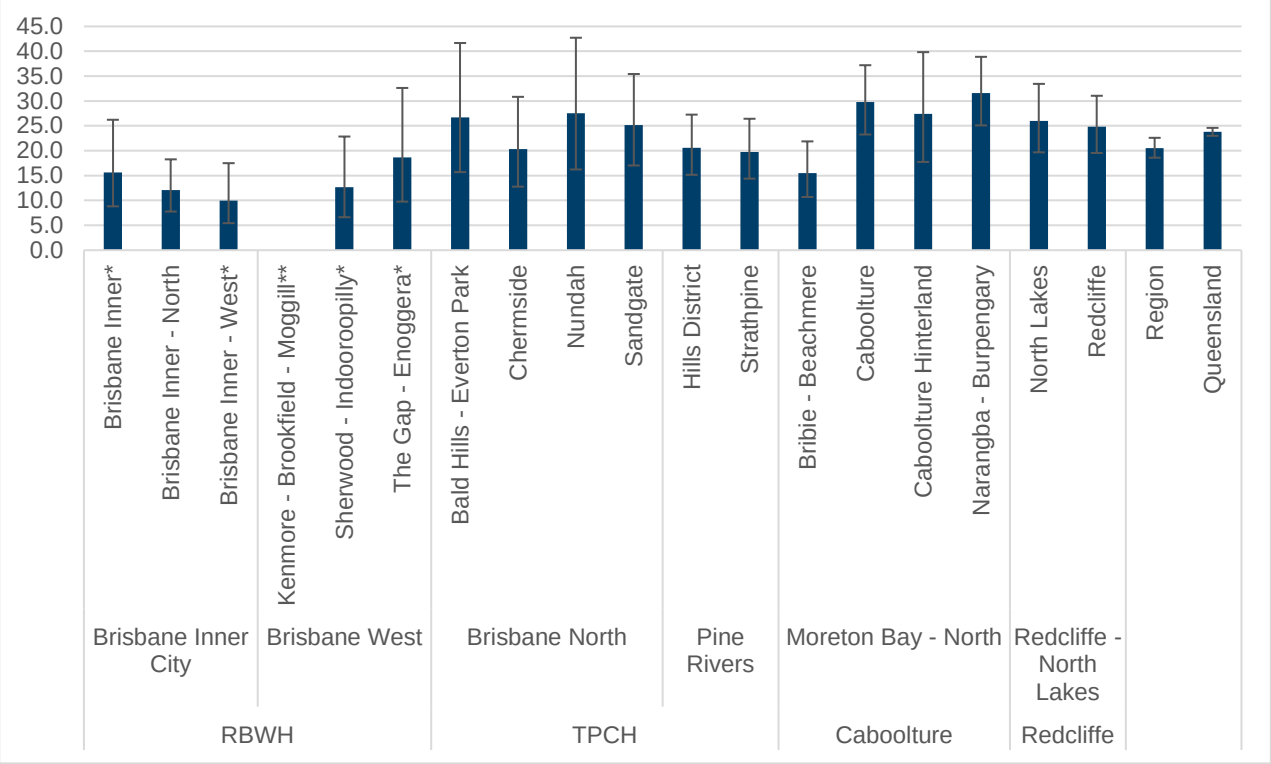
Figure 44: Four category BMI by socioeconomic status, Region, 2015-16



Source: Queensland Health, 2015

The proportion of people aged 18 years and over who are overweight or obese varies both across and within sub regions. The proportions range from 9.9 per cent (CI 5.4-17.5) in the Brisbane Inner – West SA3 to 31.6 per cent (CI 25.1-38.9) in the Narangba – Burpengary SA3.

Figure 45: Proportion of adults who are obese by SA3 and sub region, 2015-16[79][80]



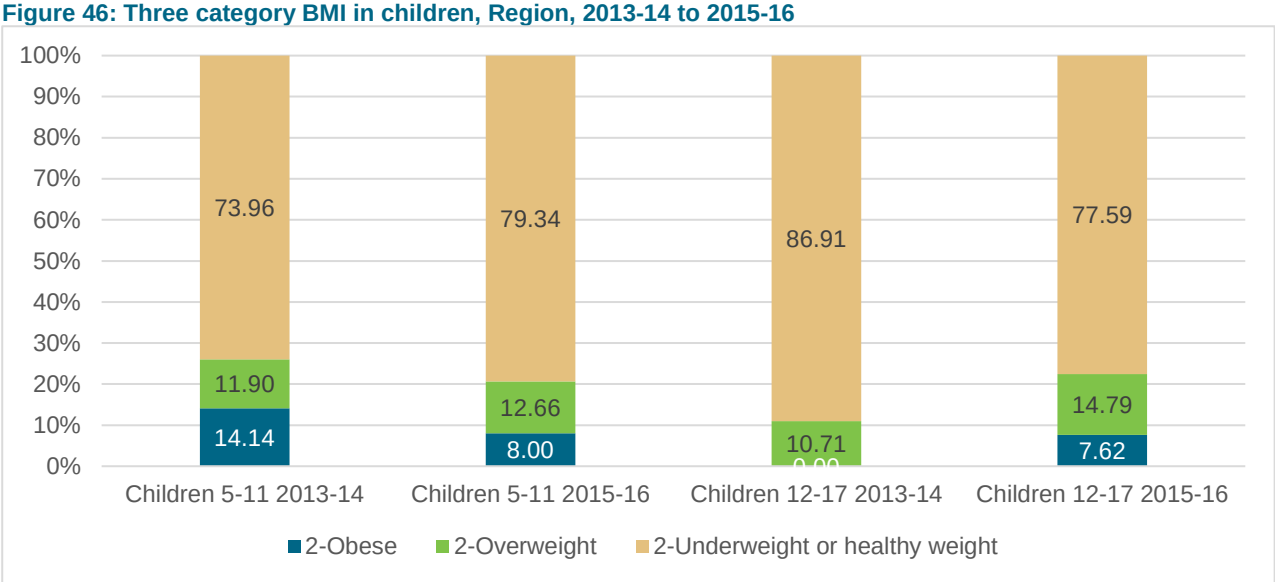
Source: Queensland Department of Health. Queensland survey analytics system (QSAS). Released 20 September 2018 by Epidemiology Group.

[79] * Estimate has a relative standard error of 25 per cent to 50 per cent and should be used with caution.
[80] ** Estimate has a relative standard error greater than 50 per cent and is not reported.

Obesity in children

In 2015-16, an estimated 8 per cent of children aged 5-11 and 7.6 per cent of children aged 12-17 were classified as obese, with a further 12.7 per cent of children aged 5-11 and 14.8 per cent of children aged 12-17 classified as overweight. While the estimated percentage of children aged 5-11 years classified as obese almost halved between 2013-14 and 2015-16, the number of children aged 12-17 years classified as obese increased substantially. This change is highlighted in

Figure 46: Three category BMI in children, Region, 2013-14 to 2015-16

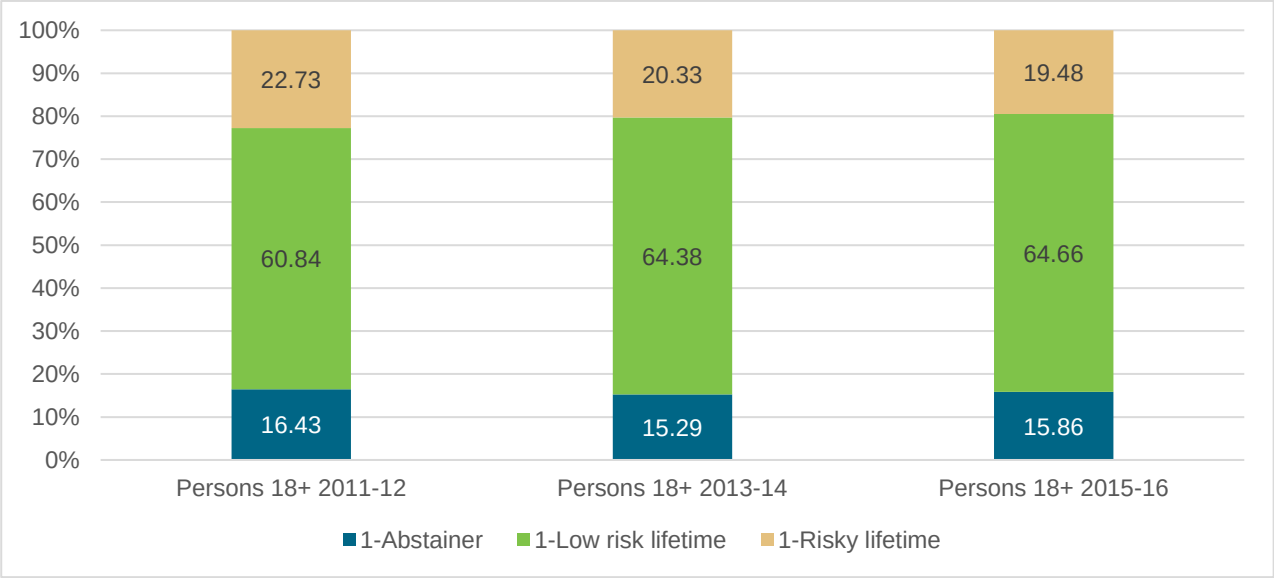


Source: Queensland Health, 2015

Alcohol consumption

In 2015-16, 19.48 per cent of the population aged 18 years and over in the region consumed alcohol at lifetime risky levels[81], with 60.83 per cent of the population aged 18 years and over consuming alcohol at low lifetime risk and 16.4 per cent abstaining. Between 2011-12 and 2015-16, the proportion of people aged 18 years and over consuming alcohol at lifetime risky levels declined from 22.7 per cent. This is highlighted in Figure 47.

Figure 47: Alcohol consumption by level of lifetime risk, Region, 2011-12 to 2015-16



Source: Queensland Health, 2015

In 2015-16, males in the region are much more likely to consume alcohol at lifetime risky levels compared to females, with 29.4 per cent of males aged 18 years and over consuming alcohol at lifetime risky levels compared to 10.2 per cent of females aged 18 years and over. Patterns in lifetime risky alcohol consumption also vary by age. While people aged 65 years and over in the region are the most likely to abstain from alcohol consumption, people aged 45-64 years in the region are most likely to consume alcohol at lifetime risky levels.

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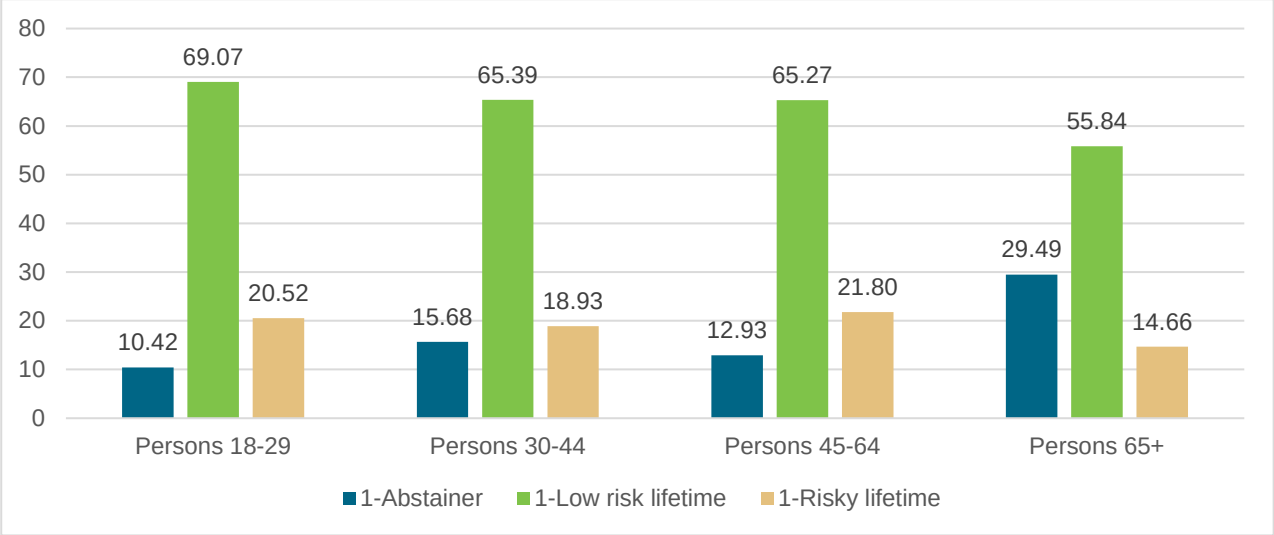
[81] Under the National Health and Medical Research Council (NHMRC) guidelines, every drink over two standard drinks per day increases the lifetime risk of both disease and injury.

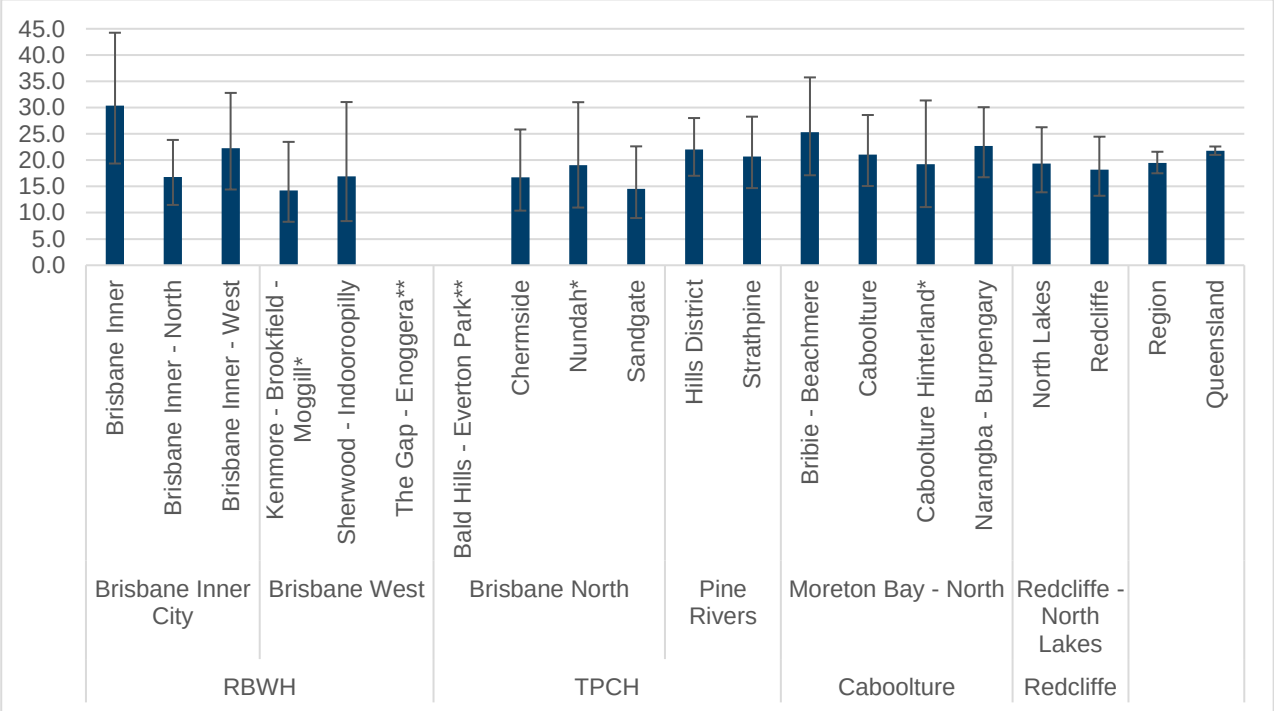
Figure 48: Alcohol consumption by level of lifetime risk by broad age group, Region, 2015-16



Source: Queensland Health, 2015

Risky lifetime alcohol consumption is relatively consistent across the region as seen in Figure 49.

Figure 49: Proportion of the population exceeding the guideline for lifetime risky drinking by SA3 and sub region, 2015-16[82][83]



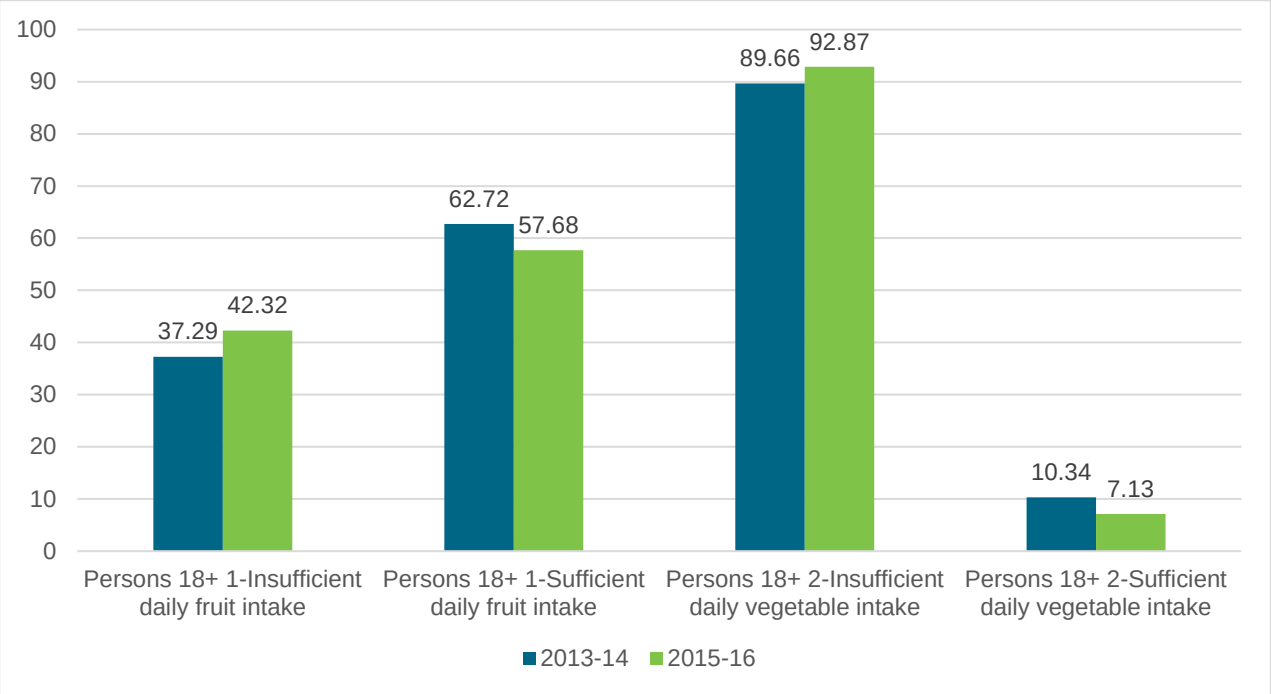
Source: Queensland Department of Health. Queensland survey analytics system (QSAS). Released 20 September 2018 by Epidemiology Group.

[82] * Estimate has a relative standard error of 25 per cent to 50 per cent and should be used with caution.
[83] ** Estimate has a relative standard error greater than 50 per cent and is not reported.

Nutrition

Nutrition is measured here through the daily consumption of sufficient servings of fruit and vegetables. In 2015-16, 57.7 per cent of people aged 18 years and over in the region consumed the sufficient amount of fruit daily, and 7.1 per cent of people aged 18 years and over consumed the sufficient amount of vegetables daily. Between 2013-14 and 2015-16, the number of people aged 18 years and over who consume the sufficient amount of fruit and vegetables decreased by 5 and 3.2 percentage points respectively. This change is highlighted in Figure 50.

Figure 50: Daily fruit and vegetable consumption, Region, 2013-14 to 2015-16

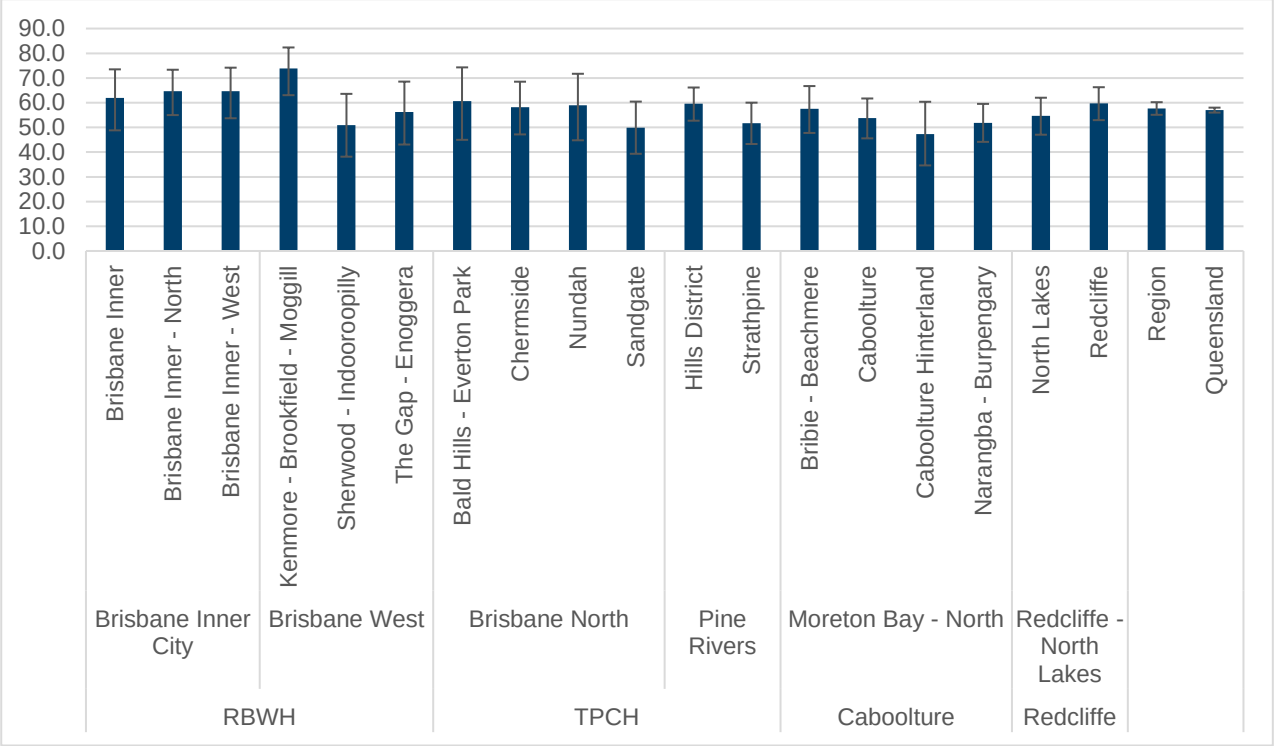


Source: Queensland Health, 2015

In the region in 2015-16, females are 2.9 times more likely to consume the sufficient daily intake of vegetables and 1.2 times more likely to consume the sufficient intake of fruit than males. While there are no clear differences for sufficient vegetable intake across age or socioeconomic status, people aged 65 years and over and people residing in more advantaged socioeconomic areas are more likely to consume the sufficient daily intake of fruit.

Within the region, Kenmore – Brookfield – Moggill SA3 had higher fruit consumption than the region and state (73 per cent, CI 63.0-82.3).

Figure 51: Proportion of adults meeting recommended daily fruit consumption by SA3 and sub region, 2015-16

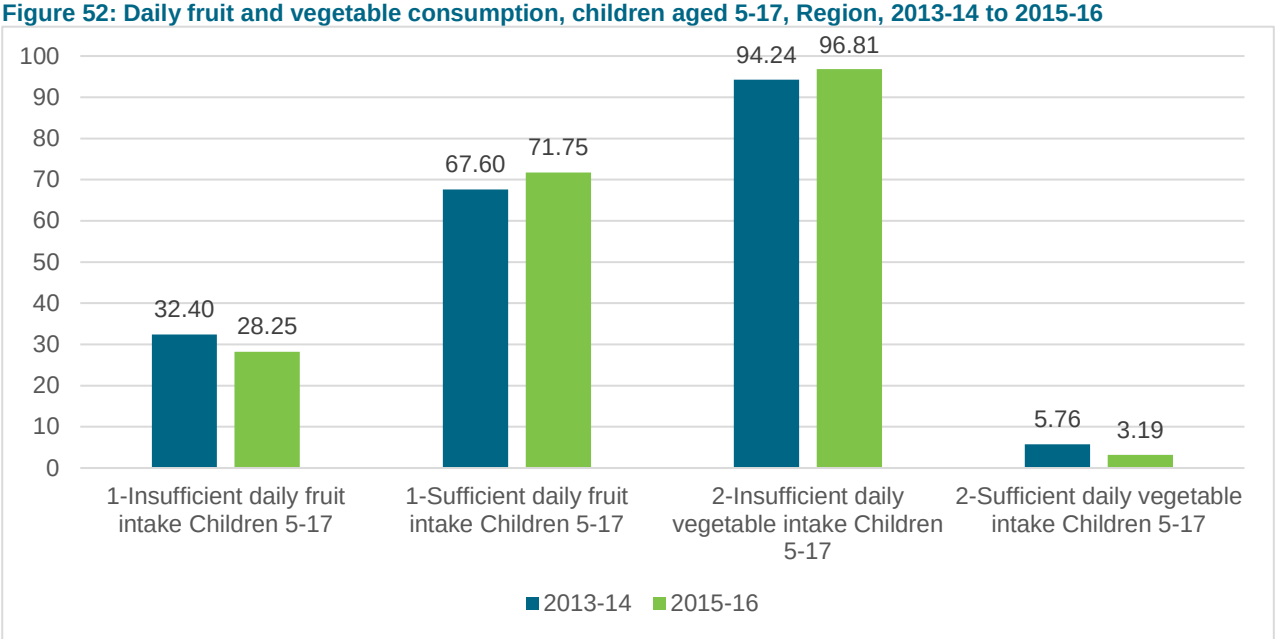


Source: Queensland Department of Health. Queensland survey analytics system (QSAS). Released 20 September 2018 by Epidemiology Group.

Children's nutrition

In 2015-16, an estimated 96.8 per cent of children aged 5-17 years in the region had an insufficient daily vegetable intake and 28.2 per cent of children had an insufficient daily intake of fruit. Between 2013-14 and 2015-16, the proportion of children with an insufficient daily intake of fruit decreased, however the proportion of children with an insufficient daily intake of vegetables increased. These changes are highlighted in Figure 52.

Figure 52: Daily fruit and vegetable consumption, children aged 5-17, Region, 2013-14 to 2015-16

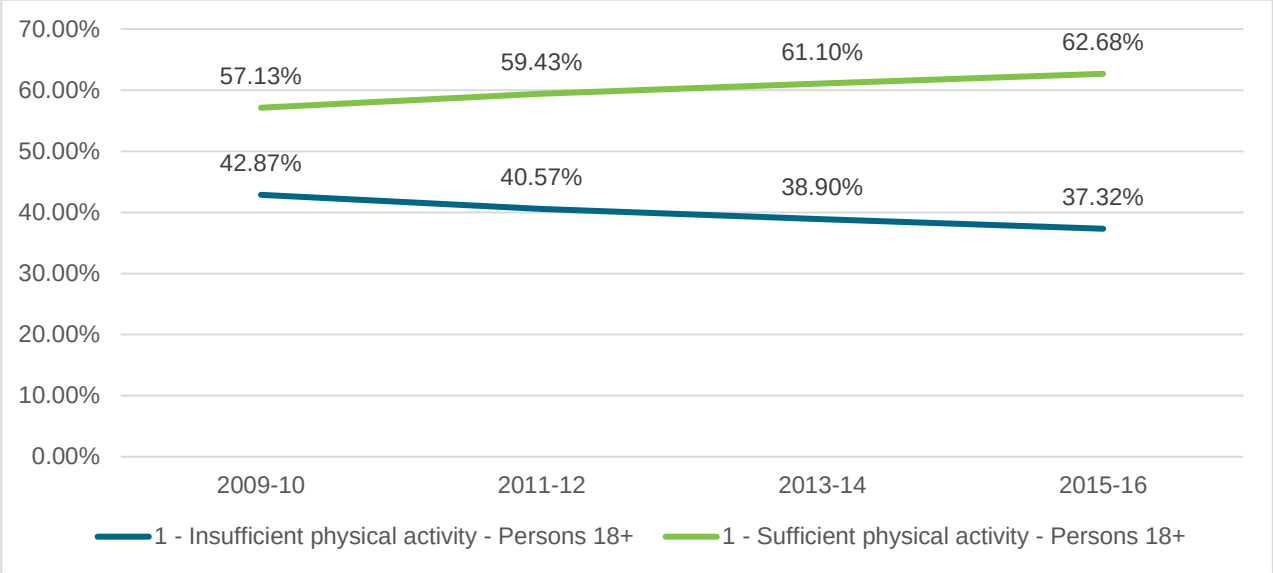


Source: Queensland Health, 2015

Physical activity

In 2015-16, an estimated 37.3 per cent of people aged 18 years and over in the region had insufficient physical activity[84]. This is similar to Queensland. Between 2009-10 and 2015-16, the proportion of people aged 18 years and over in the region who had insufficient activity decreased by 5.6 percentage points. This trend is shown in Figure 53.

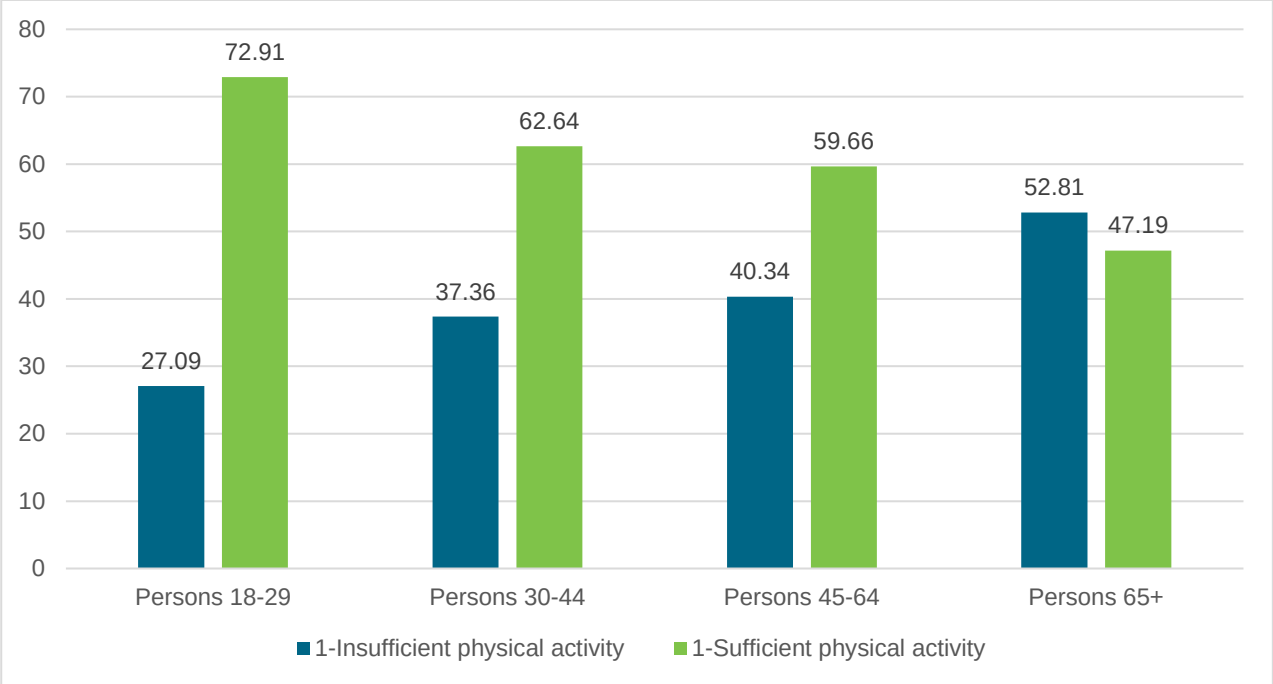
Figure 53: Proportion of adults who undertake sufficient physical activity, Region, 2009-10 to 2015-16



Source: Queensland Health, 2015

In 2015-16, males aged 18 years and over in the region were more likely to be physically active compared to females, with 70 per cent of males reporting sufficient physical activity compared to 56.1 per cent of females. Younger people in the region are also likely to be more physically active compared to older population groups, as highlighted in Figure 54.

Figure 54: Physical activity by broad age group, Region, 2015-16

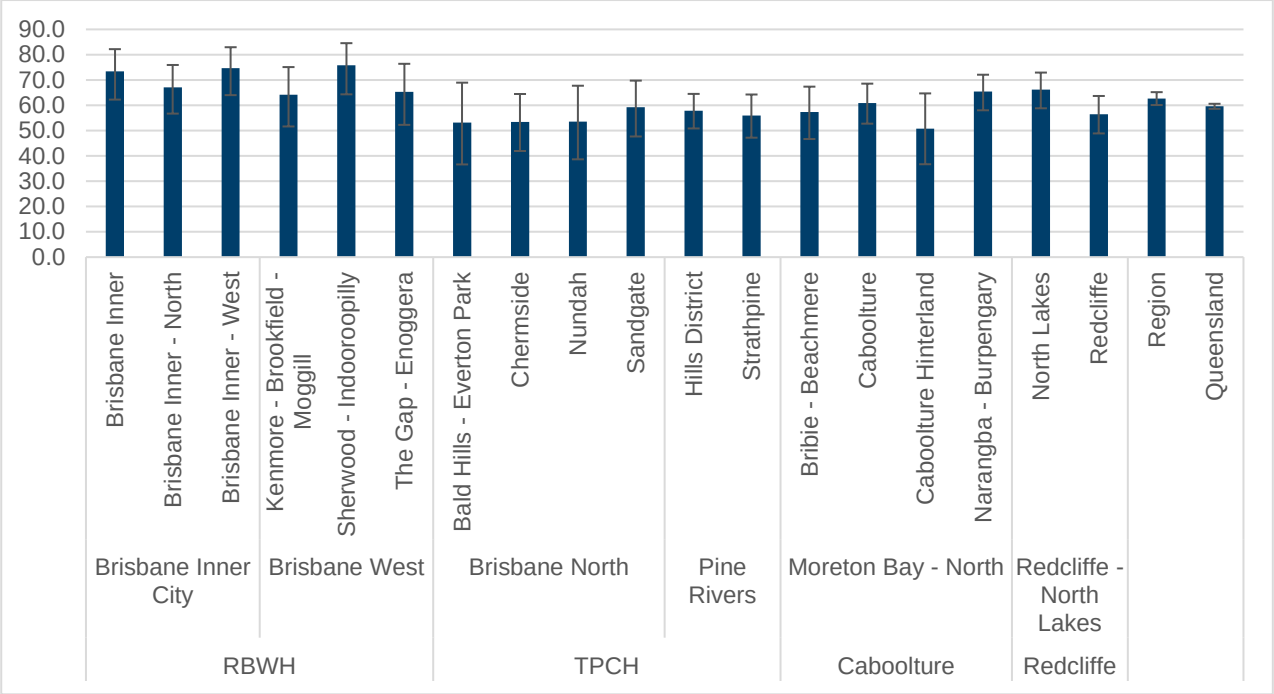


Source: Queensland Health, 2015

[84] Sufficient physical activity is defined in the physical activity and sedentary behaviour guidelines as 150 minutes of moderate activity over five or more sessions in a week.

At an SA3 level, the proportion of adults sufficiently active was highest in Sherwood – Indooroopilly SA3 (75.9 per cent, CI 64.3-84.6) and lowest in Caboolture Hinterland SA3 (50.8 per cent, CI 36.7-64.7).

Figure 55: Proportion of adults who undertake sufficient physical activity by SA3 and sub region, 2015-16

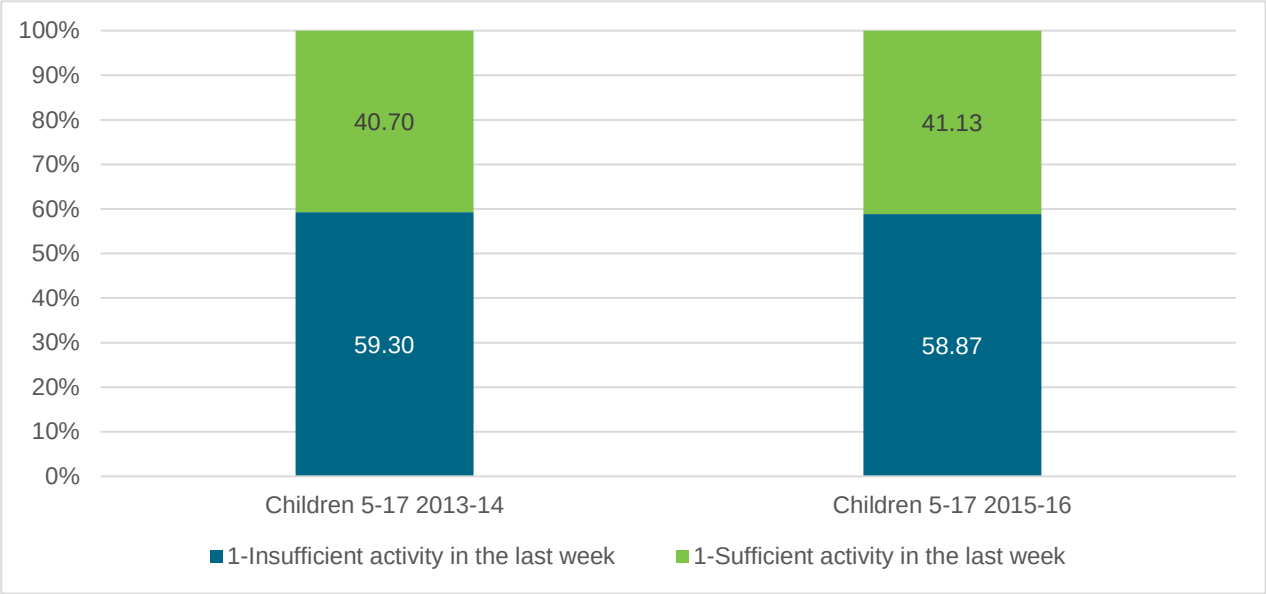


Source: Queensland Department of Health. Queensland survey analytics system (QSAS). Released 20 September 2018 by Epidemiology Group.

Physical activity among children

In 2015-16, an estimated 58.9 per cent of children aged 5-17 in the PHN region reported having insufficient physical activity in the last week. This figure has decreased slightly from 59.3 per cent in 2013-14 and can be seen in Figure 56.

Figure 56: Proportion of children aged 5-17 who undertake sufficient physical activity, aged 5-17, Region, 2013-14 to 2015-16

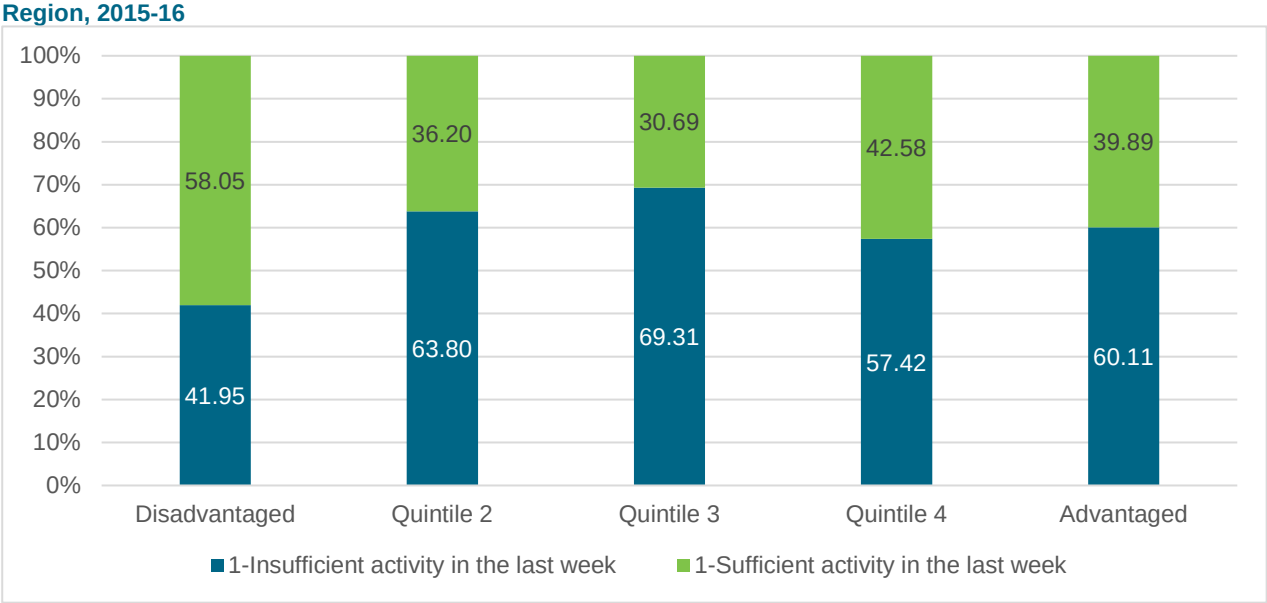


Source: Queensland Health, 2015

Further analysis indicates that in the region in 2015-16, children aged 5-17 residing in the most disadvantaged socioeconomic areas were less likely to have insufficient physical activity when compared to children residing in more advantaged socioeconomic areas. This is shown in Figure 57.

Girls 5-17 years are more likely than boys to have insufficient physical activity, with 64.6 per cent and 53.6 per cent respectively reporting insufficient physical activity in 2015-16.

Figure 57: Proportion of children aged 5-17 who undertake sufficient physical activity, by socioeconomic status, Region, 2015-16

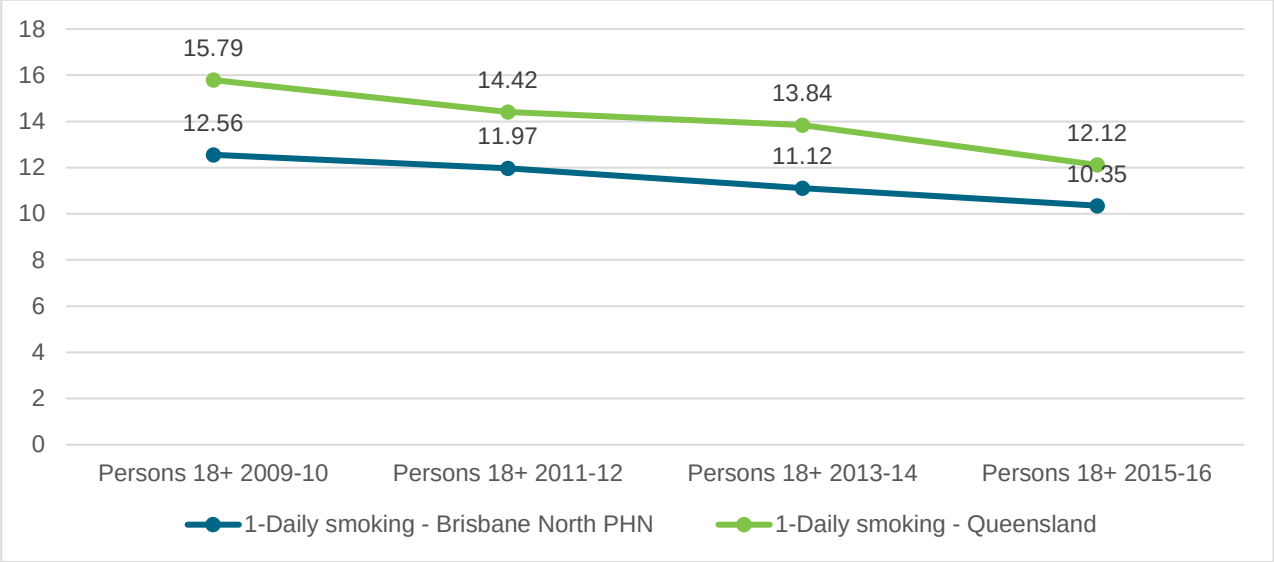


Source: Queensland Health, 2015

Smoking

In 2015-16, an estimated 10.4 per cent of the population aged 18 years and over in the region were daily smokers, lower than the Queensland rate of 12.1 per cent. Between 2009-10 and 2015-16, the percentage of people aged 18 years and over in the region who were daily smokers decreased 2.2 percentage points, down from 12.6 per cent. This trend is shown in Figure 58.

Figure 58: Proportion of adults who are daily smokers, Region and Queensland, 2009-10 to 2015-16

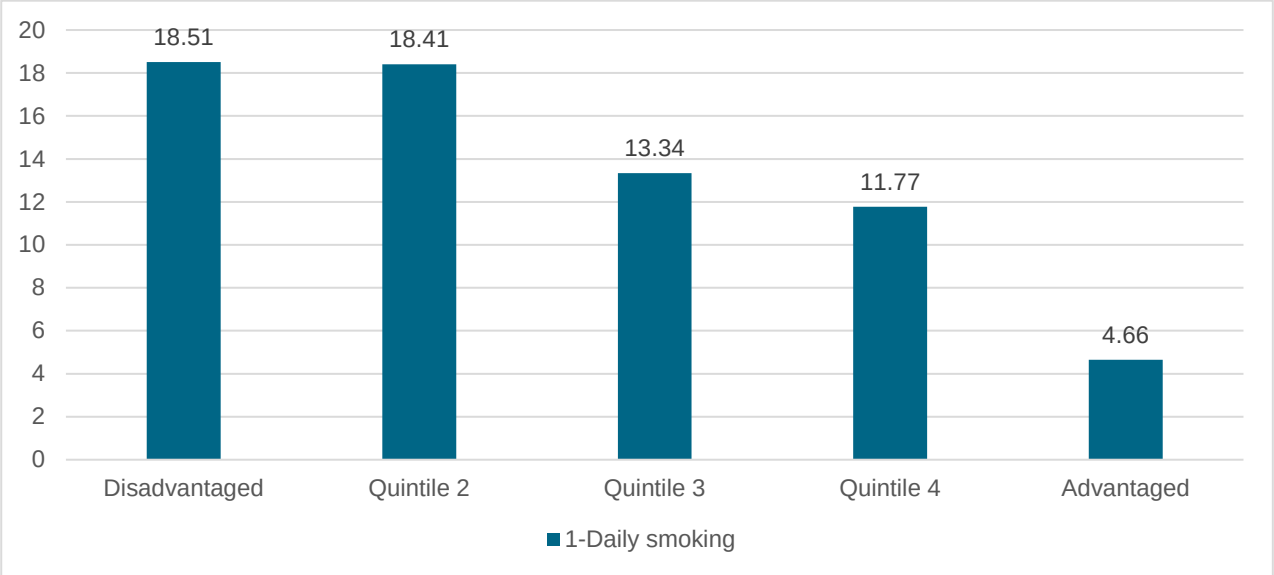


Source: Queensland Health, 2015

Analysis by socioeconomic status indicates that daily smoking rates among people in the most disadvantaged socioeconomic quintile are 3.9 times higher than smoking rates in people in the most advantaged socioeconomic quintile. This is highlighted in Figure 59.

While there have been decreases in smoking rates in most socioeconomic quintiles between 2009-10 and 2015-16, smoking rates in more disadvantaged socioeconomic quintiles have decreased at slower rates.

Figure 59: Proportion of adults who are daily smokers by socioeconomic status, Region, 2015-16



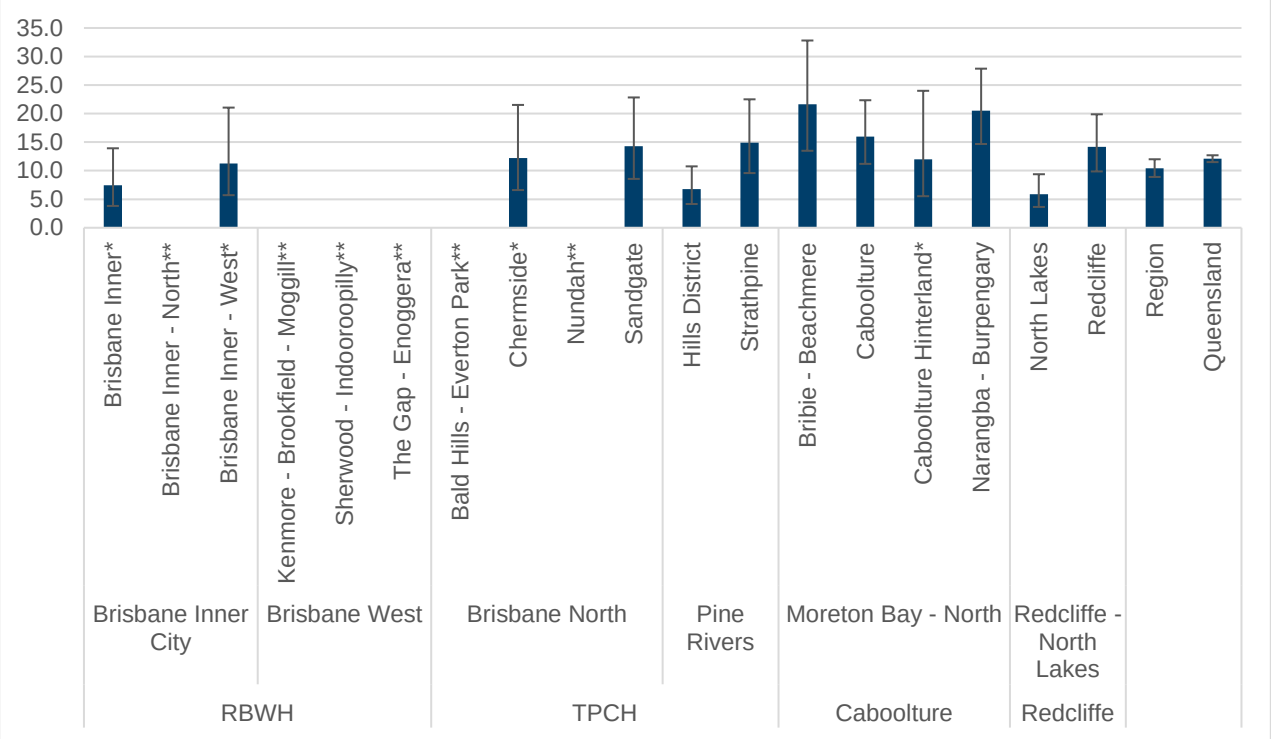
Source: Queensland Health, 2015

In the region, daily smoking rates among males are 1.5 times higher than smoking rates among females at 12.6 per cent and 8.2 per cent respectively. Analysis by age indicates that daily smoking rates are highest among people aged 30-44 years at 13.6 per cent, followed by people aged 45-64 years at 12.7 per cent.

Between 2009-10 and 2015-16, smoking rates in the region declined across all age groups, with rates among people aged 18-29 years declining the fastest, from 11.9 per cent in 2009-10 to 7.6 per cent in 2015-16.

Within the region, the proportion of adult daily smokers in the Bribie – Beachmere SA3 and Narangba – Burpengary SA3 is higher than the region and state average, at 21.6 per cent (CI 13.5-32.8) and 20.5 per cent (CI 14.7-27.9) respectively. This is shown in Figure 60.

Figure 60: Proportion of adults who are daily smokers by SA3 and sub region, 2015-16[85][86]



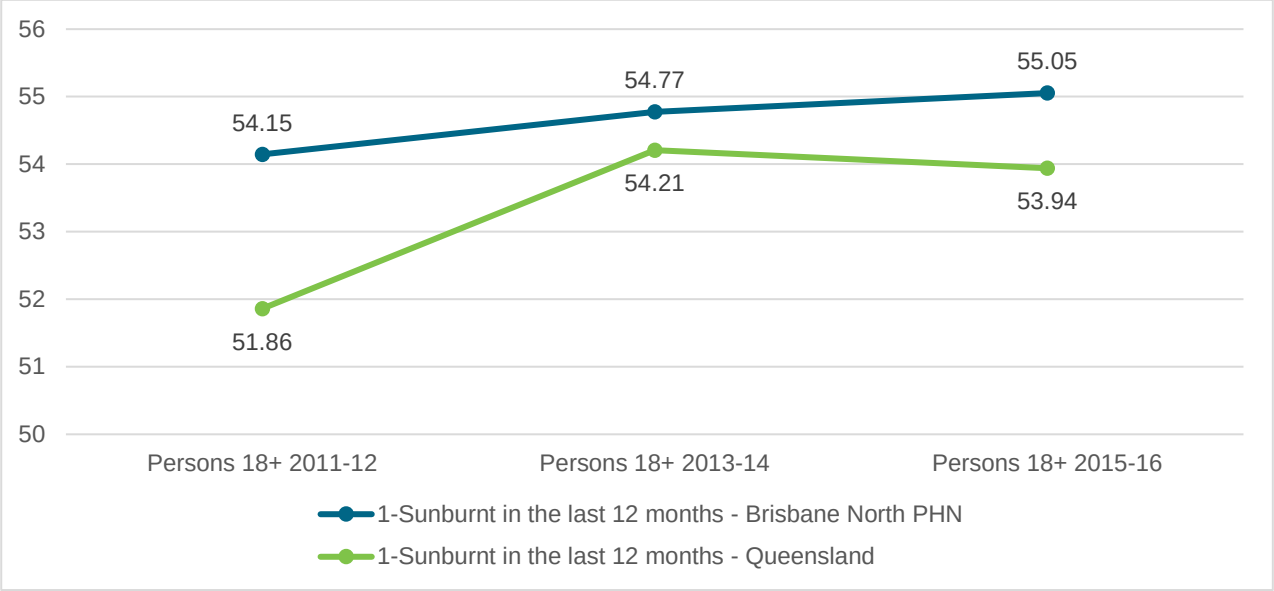
Source: Queensland Department of Health. Queensland survey analytics system (QSAS). Released 20 September 2018 by Epidemiology Group.

Sunburn

In the region, an increasing number of people are reporting that they have been sunburnt in the last 12 months. Between 2011-12 and 2015-16, the percentage of people aged 18 years and over reporting that they had been sunburnt in the previous 12 months increased from 54.1 per cent to 55.1 per cent. The percentage of people in the region 18 years and over who had been sunburnt in the previous 12 months has been consistently higher than the Queensland rate.

85 * *Estimate has a relative standard error of 25% to 50% and should be used with caution.*
86 ** *Estimate has a relative standard error greater than 50% and is not reported*

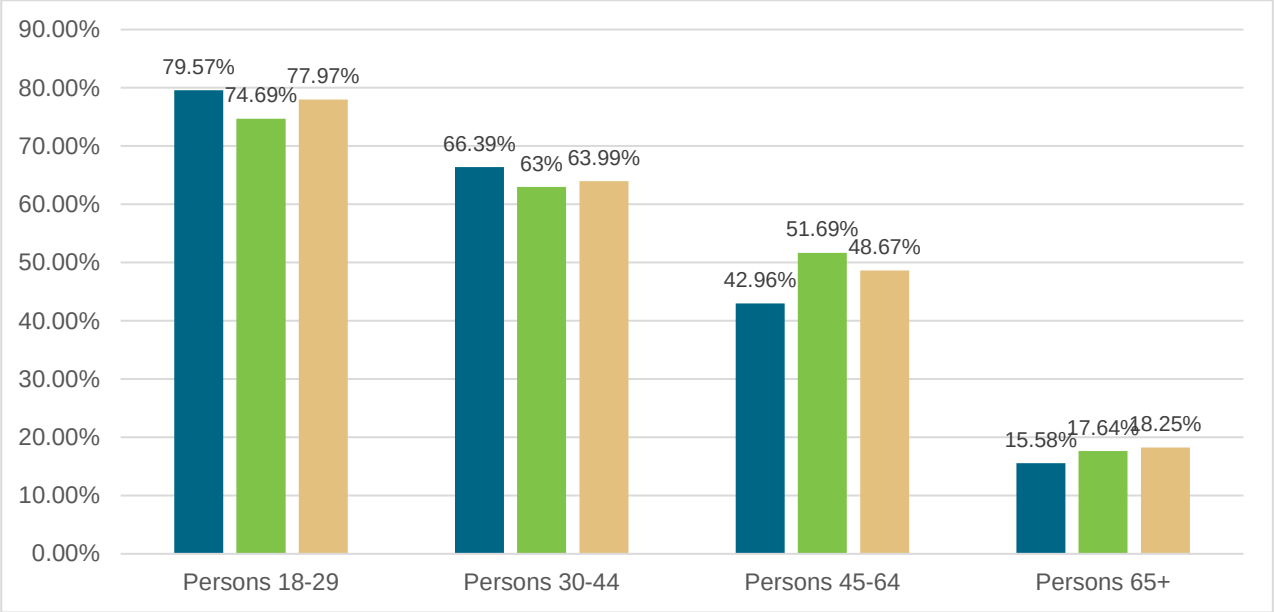
Figure 61: Proportion of adults who reported being sunburnt in the previous 12 months, Region and Queensland, 2011-12 to 2015-16



Source: Queensland Health, 2015

Further analysis indicates that in 2015-16, the percentage of people aged 18-29 years in the region who had been sunburnt in the previous 12 months was 4.3 times higher than people aged 65 years and over. Sunburn rates for younger age cohorts in the region did not decline significantly between 2011-12 and 2015-16, and increased among people aged 45-64 years and 65 years and over. This is highlighted in Figure 62.

Figure 62: Proportion of adults who reported being sunburnt in the previous 12 months by broad age group, Region, 2011-12 to 2015-16



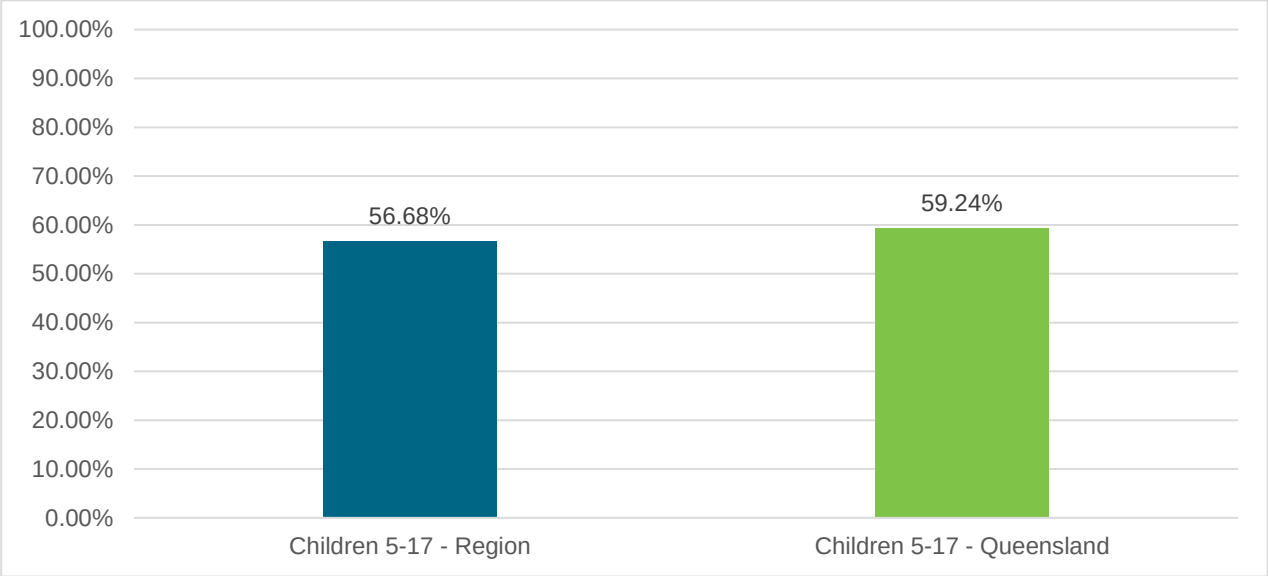
Source: Queensland Health, 2015

Analysis by sex indicates that in 2015-16, sunburn rates among males aged 18 years (61.5 per cent) and over in the region were 1.3 times higher than females aged 18 years and over (49 per cent). Sunburn rates among males and females increased slightly between 2011-12 and 2015-16.

Sunburn in children

In 2013-14, 56.7 per cent of children aged 5-17 years had been sunburnt in the previous 12 months. This was lower than the Queensland rate of 59.2 per cent and is highlighted in figure x. Boys aged 5-17 years in the region were more likely than girls to have been sunburnt in the previous 12 months, with sunburn rates at 59.3 per cent and 54 per cent respectively.

Figure 63: Proportion of children aged 5-17 years who reported being sunburnt in the previous 12 months, children 5-17, Region and Queensland, 2013-14



Source: Queensland Health, 2015

Health status

Better health is central to human happiness and wellbeing. Many factors influence the health status and ultimately the health outcomes of a population.

In general, across a range of health status indicators, the region is comparable to the Queensland population with a current life expectancy for residents of 81.4 years for males and 85.1 years for females.

In the region, half of adults (50.4 per cent, CI[87] 46.8 – 54.1) had a long term health condition as of 2016-17[88] and approximately 4.6 per cent of the population (43,480 people) are living in need of assistance with a profound or severe disability[89].

In 2014-15, there was an estimated 84,193 people in the region aged 18 years and over who had high or very high psychological distress, which is a proportion of 11.8 per cent (CI 11.2 – 12.3 per cent)[90]. By sub region, Redcliffe - North Lakes had the highest prevalence at 13.3 per cent (CI 12.6 – 14.0 per cent)[91].

The health status of Aboriginal and Torres Strait Islander residents is significantly poorer than non-Indigenous residents. Aboriginal and Torres Strait Islander people in the region have poorer self-assessed health, a higher prevalence of long term conditions and an increased burden of disease, when compared to the non-Indigenous population in the region.

The Aboriginal and Torres Strait Islander population in the region experience higher prevalence of mental health problems, diabetes and chronic respiratory disease when compared to the non-Indigenous population. Aboriginal and Torres Strait Islander people also experience the burden of disease at a much younger age than the non-Indigenous population, along with lower life expectancy. In addition, less than half of the Aboriginal and Torres Strait Islander women in the region had at least one antenatal visit during their first trimester of pregnancy and low birth weight babies born to Aboriginal and Torres Strait Islander mothers are almost double that of non-Indigenous births.

Further information regarding health status is provided in this chapter.

The health of the population

Life expectancy

In the region, the life expectancy of a person born in 2014-16 was 83.2 years[92]. It was 80.4 years for males and 84.6 years for females in the region. A similar trend was seen in Queensland with males living 4.4 years less than females (80.1 years and 84.5 years respectively)[93].

Life expectancy increased by 0.3 years between 2011-13 and 2014-16 for both males and females in the region[94][95]. The increase in life expectancy at birth in the region was slightly lower than increases in Queensland during the same time period (0.5 years for males and 0.4 years for females)[96]

While the life expectancy for the region's Aboriginal and Torres Strait Islander population is not available, in 2011 the life expectancy for Aboriginal and Torres Strait Islander people in Queensland was 68.7 years for males and 74.4 years for females. The gap between Indigenous and non-Indigenous people is over 11 years for males and just under 10 years for females.

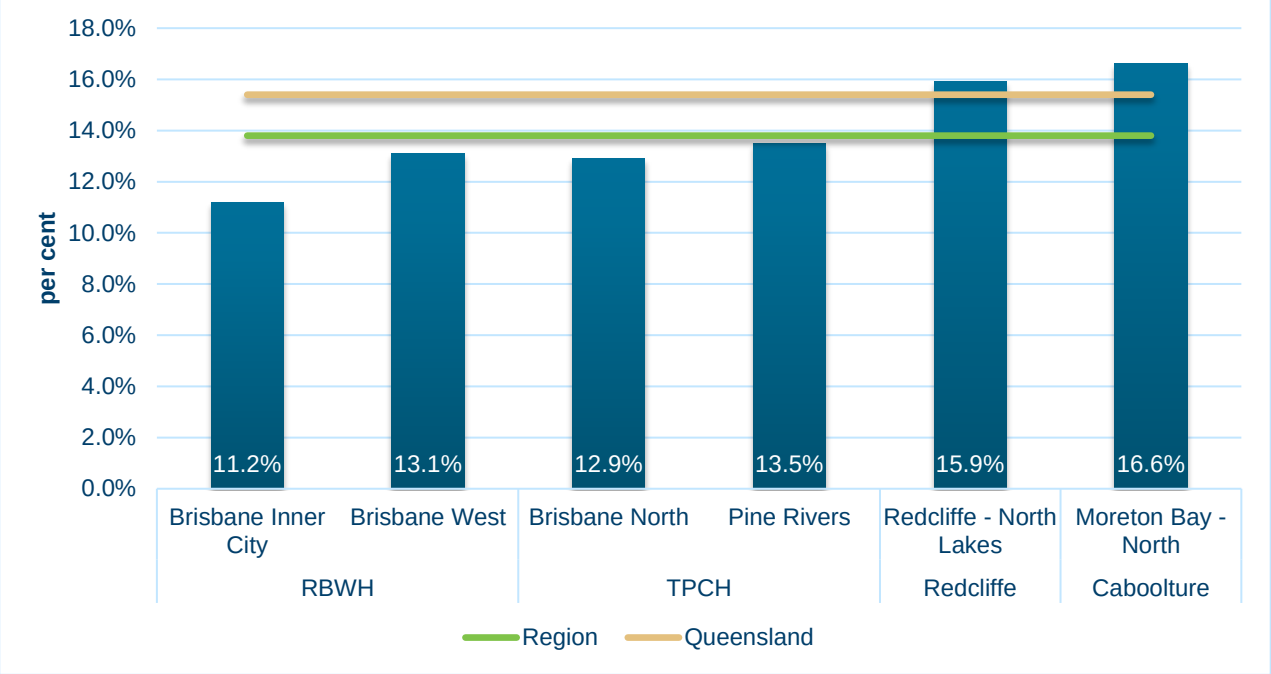
[87] Confidence Interval
[88] (Australian Institute of Health and Welfare, 2018)
[89] (Queensland Government Statistician's Office, Queensland Treasury, 2018)
[90] (Public Health Information Development Unit, 2019)
[91] (Public Health Information Development Unit, 2019)
[92] (Australian Institute of Health and Welfare, 2018)
[93] (Queensland Health, 2018)
[94] (Australian Institute of Health and Welfare, 2018)
[95] (Australian Institute of Health and Welfare, 2018)
[96] (Queensland Health, 2018)

Self-assessed health

Overall, 13.8 per cent (CI 13.4 – 14.2 per cent) of the population rate their health as 'fair or poor' as opposed to 'good', 'very good' or 'excellent'[97]. Those living in Moreton Bay North and Redcliffe - North Lakes are more likely to rate their health as 'fair or poor' in comparison to other parts of the region. This may be a reflection on the poorer social determinant and health risk factors present in the Moreton Bay North and Redcliffe – North Lakes sub regions.

Figure 64 reports the proportion of people who rate their health as 'fair' or 'poor' by sub region.

Figure 64: Proportion of people who rate their health as 'fair' or 'poor' by sub region and hospital catchment, 2014-15



Source: Public Health Information Development Unit, 2019

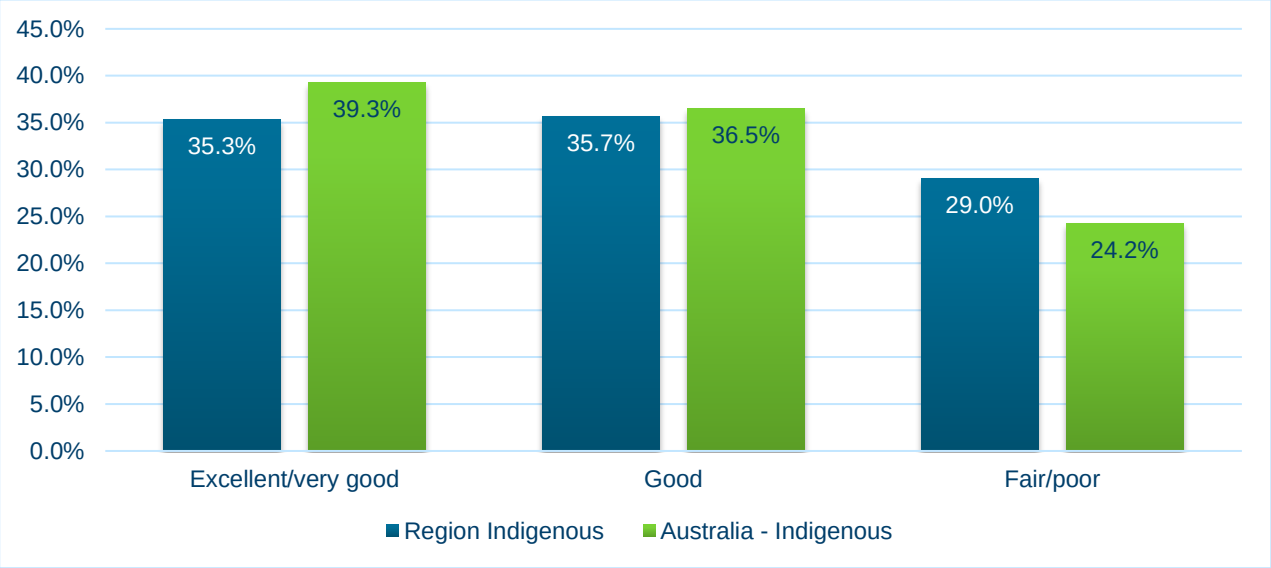
Aboriginal and Torres Strait Islander self-assessed health

Compared to the non-Indigenous population in the region, the rate of Aboriginal and Torres Strait Islander people reporting fair or poor health is 1.8 times higher (29 per cent of Aboriginal and Torres Strait Islander people compared to 15.7 per cent of the non-Indigenous population in the region)[98].

In the region, fewer Aboriginal and Torres Strait Islander people report having excellent or very good health compared to the national Indigenous population (35.3 per cent compared to 39.3 per cent)[99]. This means that a higher proportion of Aboriginal and Torres Strait Islander report having poor health compared to the national Indigenous population. This is highlighted in Figure 65.

[97] (Public Health Information Development Unit, 2019)
[98] (Australian Bureau of Statistics, 2015)
[99] (Australian Bureau of Statistics, 2015)

Figure 65: Self-assessed health, region and Australia, 2012-13



Source: (Australian Bureau of Statistics, 2015)

Childhood health

Immunisation rates

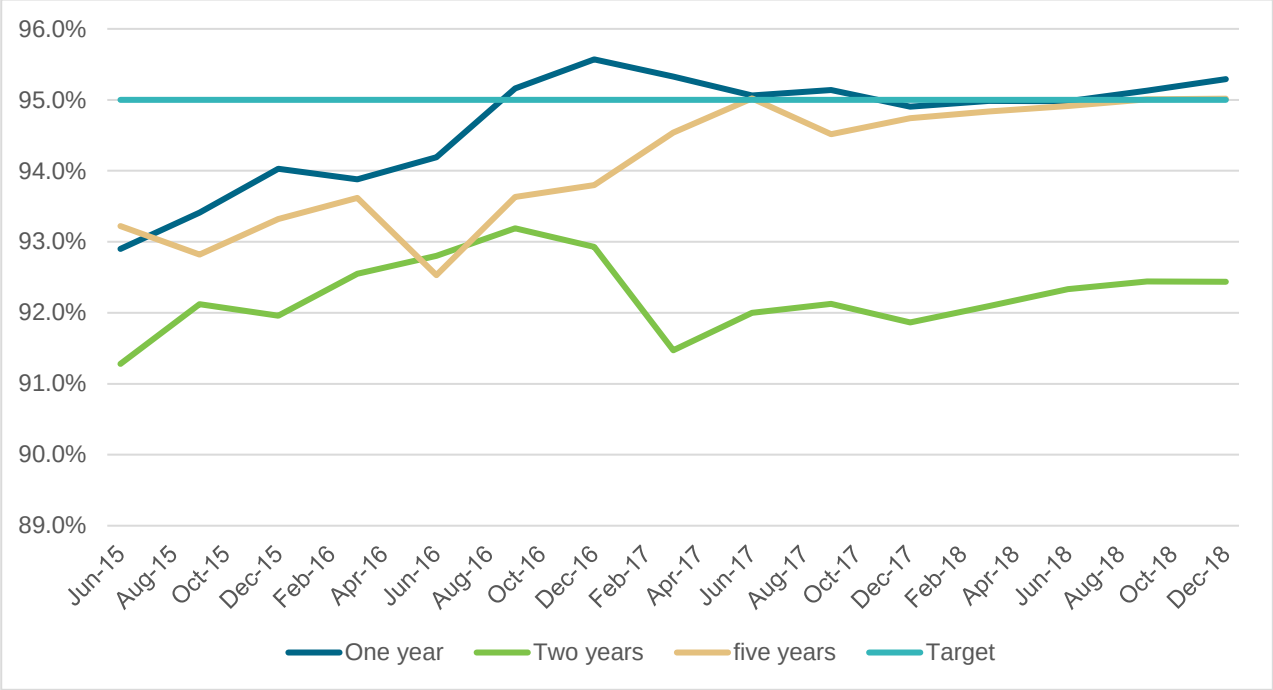
Childhood immunisation is recognised as a highly successful and cost effective health intervention, and one of the most significant public health interventions in Australia in the past 200 years[100]. The implementation of the National Immunisation Program (NIP) in Australia has seen large reductions in the incidence of vaccine preventable disease among children as coverage rates have increased[101]. The National Immunisation Strategy (NIS) aims to expand and improve upon the success of the NIP, through continued monitoring of immunisation rates and administration of vaccines[102].

Overall immunisation rates for the region are 95.2 per cent for children aged one year, 92.4 per cent for children aged two years and 95 per cent for children aged five years[103][104]. The rates for children aged one year and five years meet the national target of 95 per cent. Immunisation rates for children aged two years still require improvement to meet this target.

Since 2015, there have been observed increases in immunisation rates among one year old and five year old children in the region. Immunisation rates for two year old children have consistently remained below the 95 per cent target, as highlighted in Figure 66below.

[100] (Commonwealth Department of Health, 2018)
[101] (Commonwealth Department of Health, 2018)
[102] (Commonwealth Department of Health, 2018)
[103] Data is for the annualised December quarter 2018
[104] (Commonwealth Department of Health, 2019)

Figure 66: Childhood immunisation rates for 1, 2 and 5 year old children, Region, June 2015 to December 2018



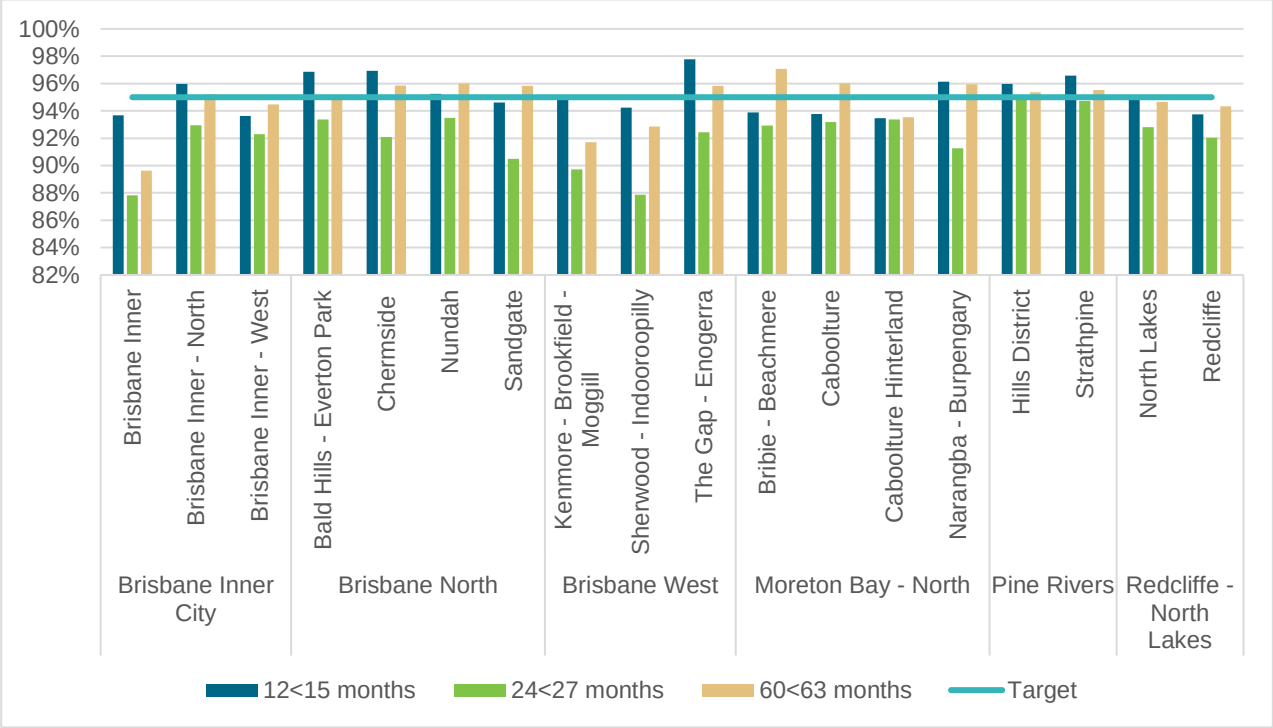
Source: (Commonwealth Department of Health, 2019)

Within the region, childhood immunisation rates for children aged one year ranged from 93.6 per cent in the Brisbane Inner and Brisbane Inner – West SA3s to 97.8 per cent in the Gap – Enoggera SA3[105]. Immunisation rates for children aged two years tended to be lower when compared to other age groups, and this is consistent with national rates. The Brisbane Inner and Sherwood Indooroopilly SA3s had the lowest immunisation rates for two year olds (87 per cent)[106].

The proportion of children aged five years who were fully immunised ranged from 89.6 per cent in the Brisbane Inner SA3 to 97.1 per cent in the Bribie – Beachmere SA3. The Kenmore – Brookfield – Moggill and Sherwood – Indooroopilly SA3s also had lower than average immunisation rates for children aged five years, with 91.7 per cent and 92.9 per cent respectively[107]. The variation by SA3 and sub region can be seen in Figure 67.

[105] (Commonwealth Department of Health, 2019)
[106] (Commonwealth Department of Health, 2019)
[107] (Commonwealth Department of Health, 2019)

Figure 67: Immunisation coverage for children by statistical area level three and sub region, December 2018



Source: (Commonwealth Department of Health, 2019)

Immunisation rates for Indigenous children as of December 2018 were 93.5 per cent for children aged 12 to 15 months, 88.6 per cent for children aged 24 to 27 months and 98.2 per cent for children aged 60 to 63 months[108]. Compared to all children, immunisation rates for Indigenous children aged 60 to 63 months are much higher, as shown in Table 2: Overall immunisation rate by age and Indigenous status, 2018. Immunisation rates for Indigenous children aged 12 to 15 months and 24 to 27 months are lower when compared to all children.

Table 2: Overall immunisation rate by age and Indigenous status, 2018

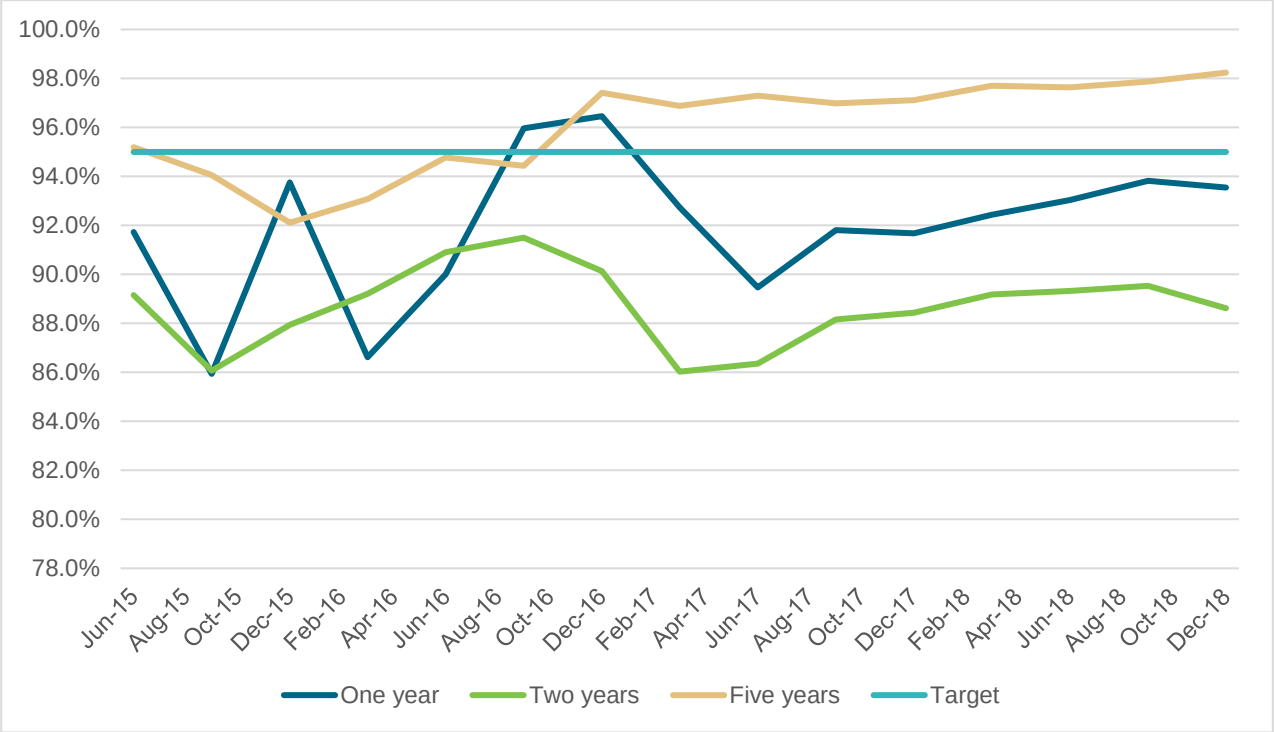
Age group	All children	Indigenous
12 to 15 months	95.2%	93.5%
24 – 27 months	92.4%	88.6%
60 – 63 months	95.0%	98.2%

Source: (Commonwealth Department of Health, 2019)

Since 2015, immunisation rates for Indigenous children aged 60 to 63 months have increased considerably. However, immunisation rates for Indigenous children aged 12 to 15 months and 24 to 27 months have fluctuated. This is shown in Figure 68.

[108] (Commonwealth Department of Health, 2019)

Figure 68: Childhood immunisation rates for 1, 2 and 5 year old Indigenous children, region, June 2015 to December 2018



Source: (Commonwealth Department of Health, 2019)

Burden of disease

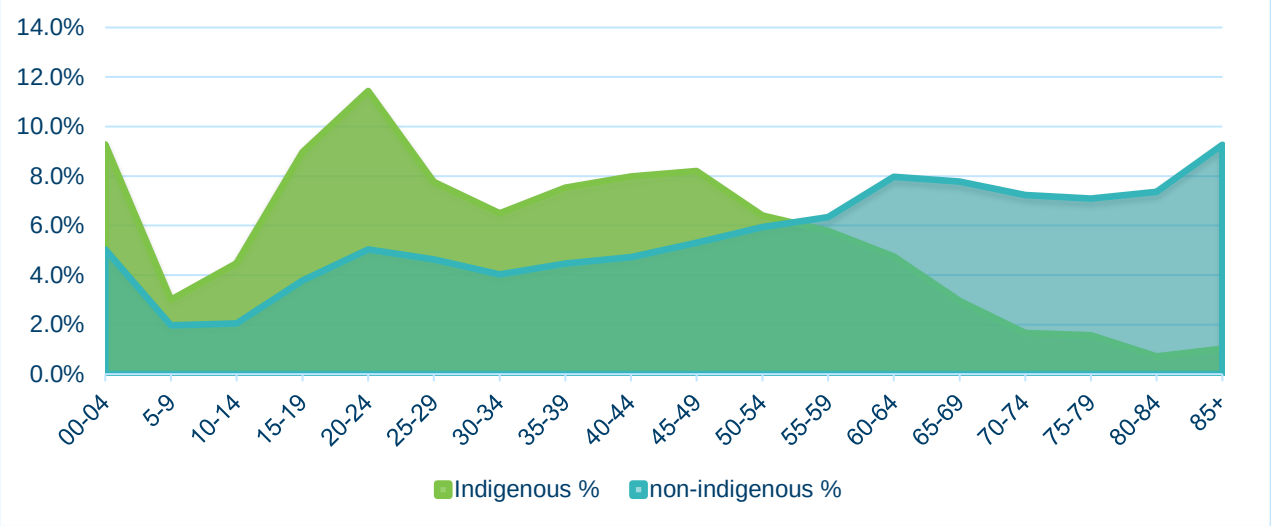
Burden of disease measures the years of healthy life lost to illness and is a measure of the health gap between the health status of a population and an ideal health situation[109]. The burden of disease can be measured through Disability Adjusted Life Years (DALY), which represent the total of years of life lost (YLL) to disease plus years lived with a disability (YLD). DALYs represent one year of healthy life that is lost to illness and death[110]. The higher the DALY, the higher the disease burden[111].

The burden of disease in the region increases with age, with almost 40 per cent of the total disease burden attributed to people aged 65 years and over. A large proportion of the fatal burden of disease (measured through years of life lost) is attributable to cardiovascular disease, cancer and unintentional injuries. The non-fatal burden of disease in the region (measured through years lived with disability) is largely attributable to mental disorders, diabetes and nervous system and sense organ disorders.

The Aboriginal and Torres Strait Islander population in the region has a higher disease burden across all ages when compared to the non-Indigenous population[112].

Figure 69 shows that 37.2 per cent of the total disease burden among the Aboriginal and Torres Strait Islander population in the region is carried by people aged less than 25 years compared to 17.9 per cent among the non-Indigenous population of the same age group[113]. Over 11 per cent of the disease burden among Aboriginal and Torres Strait Islander people in the region is attributed to the 20-24 year age group alone, compared to five per cent among the non-Indigenous population.

Figure 69: Percentage of disease burden by age and Indigenous status, region, 2011



Source: (Queensland Health, 2016)

The largest burden of disease among the Aboriginal and Torres Strait Islander population in the region was attributable to mental disorders at 28.6 per cent of the disease burden[114]. This is much higher than the non-Indigenous population in the region, where 16 per cent was attributable to mental disorders. Along with mental disorders, cardiovascular disease (11.6 per cent) and diabetes mellitus (10 per cent) accounted for over half of the attributable burden of disease among the Aboriginal and Torres Strait Islander people in the region.

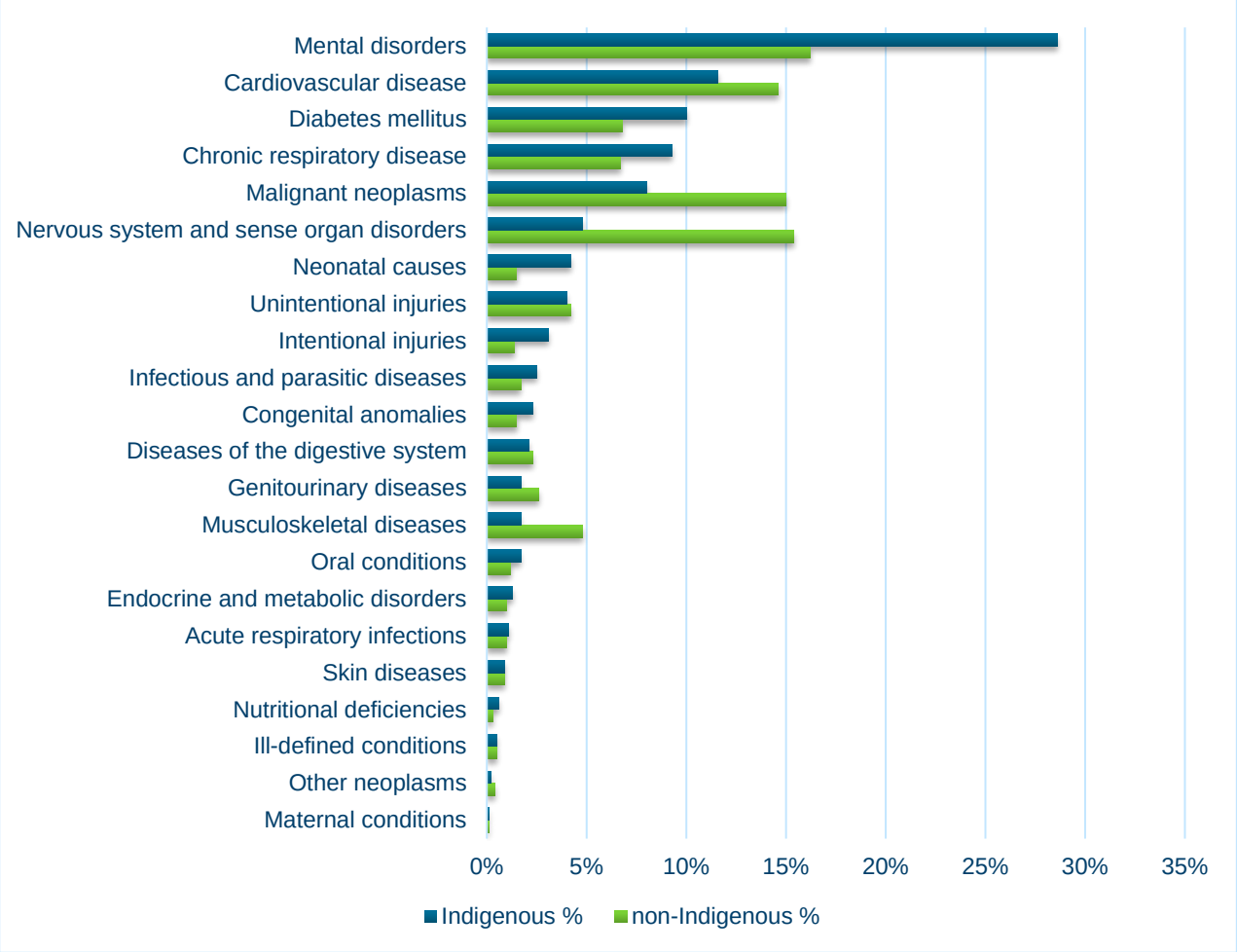
Whilst the highest burden of disease was also attributed to mental disorders, for non-Indigenous resident's cardiovascular disease, cancer, and nervous system and sense organ disorders were all relatively similar in

[109] (World Health Organization, 2016)
[110] (World Health Organization, 2016)
[111] (World Health Organization, 2016)
[112] (Queensland Health, 2016)
[113] (Queensland Health, 2016)
[114] (Queensland Health, 2016)

their percentage burden. Mental disorders are the largest contributor to the overall burden of disease in the region, accounting for 16.5 per cent of the total burden of disease in the region, followed by nervous system and sense organ disorders (15.1 per cent of the total burden) and cancer (14.9 per cent of the total burden)[115].

Comparison of the disease burden between the Aboriginal and Torres Strait Islander population and the non-Indigenous population can be seen in Figure 70.

Figure 70: Burden of disease by cause and Indigenous status, region, 2011



Source: (Queensland Health, 2016)

Mortality

The following section analyses mortality rates and trends in the region for the period 2012-2016. Examining mortality trends presents valuable information on the fatal burden of disease experienced by a community. Similarly, analysis of the fatal burden of disease through metrics such as premature mortality indicate how healthy a population may be[116], and allows for the identification of potential health inequity among population groups.

Analysis of mortality rates also allows health planners to gauge the effectiveness of healthcare systems in addressing the fatal burden of disease[117]. This is particularly useful in assessing the ability of a health system to respond to potentially avoidable deaths, usually measured through premature mortality or potentially avoidable deaths.

[115] (Queensland Health, 2016)
[116] (Australian Institute of Health and Welfare, 2018)
[117] (Australian Institute of Health and Welfare, 2018)

For males in the region, the leading causes of death are similar to the total population. However, the rate of deaths from suicide among males is much higher than among females[118]. In the region, suicide is the eighth highest cause of death among males at a rate of 19.3 deaths per 100,000 people[119], accounting for three per cent of male deaths. For females, suicide is the twentieth highest cause of death at a rate of 5.6 deaths per 100,000 people[120], accounting for one per cent of female deaths. The total rate of deaths where suicide was the cause of death in the region was slightly higher than the National rate (12.2 per 100,000 and 11.7 per 100,000 respectively)[121].

Within the region, the rate of male deaths from suicide during the period 2012 to 2016 were highest in the Brisbane Inner SA3 (35.1 deaths per 100,000), followed by the Strathpine SA3 (28 deaths per 100,000), Redcliffe SA3 (27.5 deaths per 100,000) and Sandgate SA3 (25.6 deaths per 100,000)[122]. Mortality rates for chronic diseases were also higher than average in the Caboolture, Sandgate and Redcliffe SA3s. The higher rate of deaths from chronic disease may be associated with the lower socioeconomic status and higher median age of these regions.

While the leading cause of death for females is chronic disease, the rates per 100,000 people are much lower when compared to males.

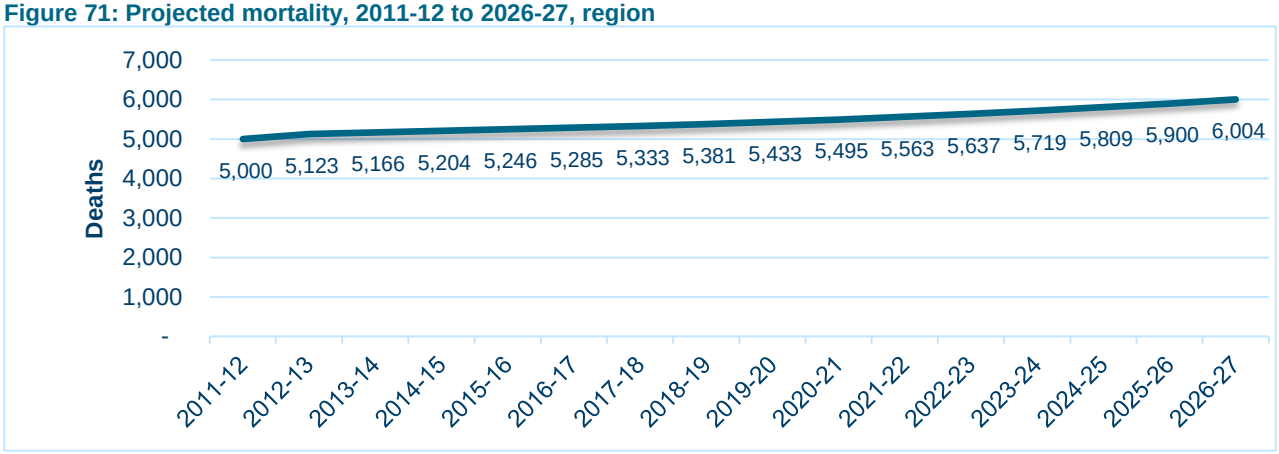
The rate of deaths from chronic disease follows the social gradient; inequalities in population health status are related to inequalities in social status, with deaths from conditions including coronary heart disease and lung cancer higher in Caboolture Hinterland, Caboolture and Redcliffe. Higher rates of death from chronic disease are also present in Sandgate. This may be due to the presence of a number of large aged care facilities and an older demographic present in the Sandgate area.

This section includes analysis on the following areas: premature mortality, potentially avoidable deaths, potential years of life lost and leading causes of death. Where possible, data will be reported at a local level to enable the identification of local trends.

Estimated deaths

It is estimated that the total number of annual deaths in the region will grow by over 1000 people from 5000 people in 2011-12 to 6004 in 2026-27. This represents approximately 17.5 per cent of all deaths in Queensland.

Figure 71: Projected mortality, 2011-12 to 2026-27, region



Source: Queensland Government population projections, 2015 edition, unpublished data

[118] (Australian Institute of Health and Welfare, 2018)
[119] Age standardized rate
[120] Age standardized rate
[121] (Australian Institute of Health and Welfare, 2018)
[122] Rates are age standardized.

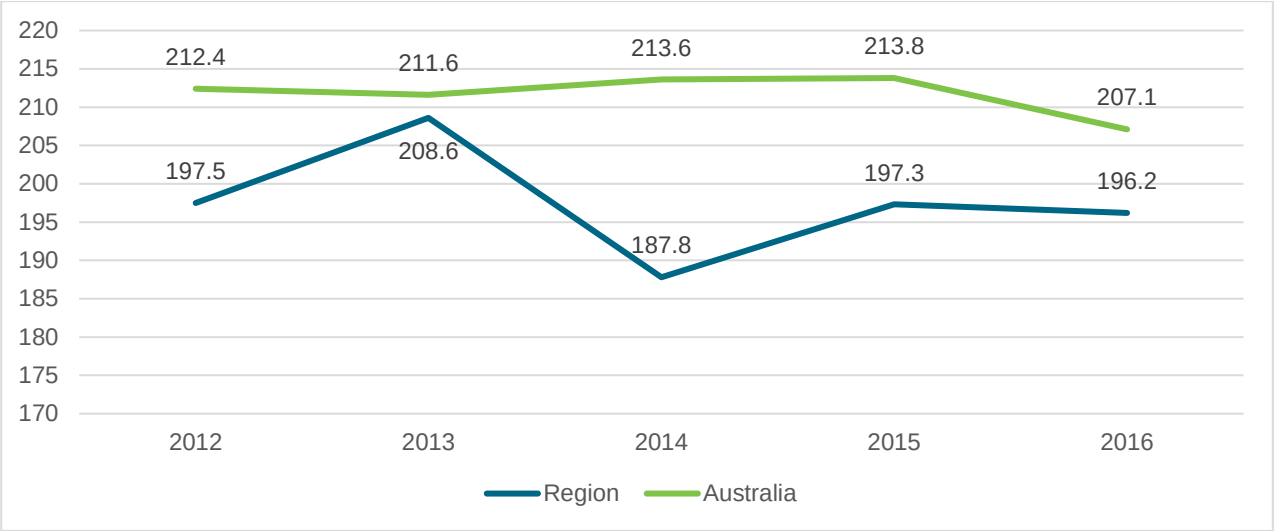
Premature mortality

Premature mortality rates are a measure of the average number of deaths before the age of 75 within a given population[123]. They are standardised to enable comparisons across population groups and geographic areas, as this reduces the confounding factor of age. Standardised premature mortality rates allow for the identification of trends, particularly where higher than average rates are observed. Measured with potentially avoidable deaths, high rates of premature mortality may indicate higher fatal disease burden and potential gaps in the health system.

In 2016, the premature mortality rate for the region was 196.2 deaths per 100,000 people. This was lower than the Australian rate of 207.1 deaths per 100,000 people. Over the five-year period between 2012 and 2016, the premature mortality rate has decreased for both the region and Australia[124]. This is highlighted in Figure 72. Premature mortality rates in the region fluctuated between 2013 and 2014, however the rates regressed back to the five year average in 2015 and 2016.

Premature mortality also accounted for an average 34.2 per cent of all deaths in the region in 2016. This is slightly higher than the Australian average of 33.8 per cent.

Figure 72: Premature mortality, 2012 – 2016, rate per 100,000

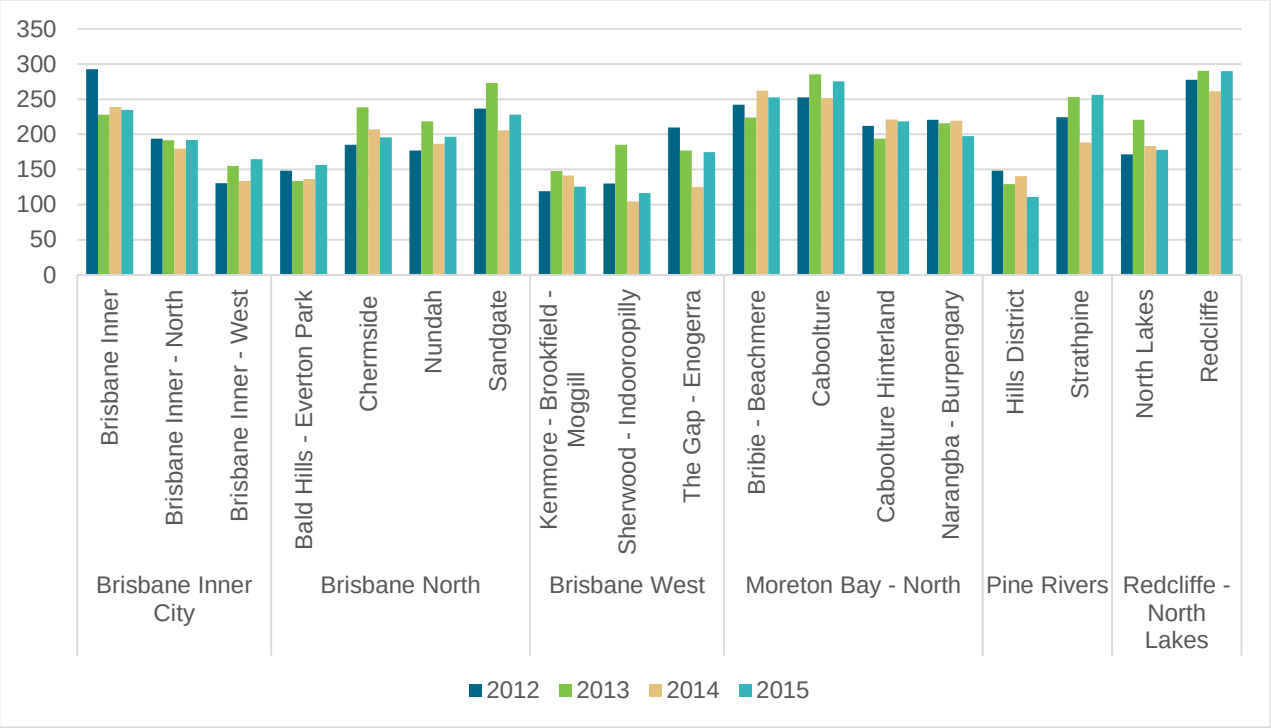


Source: (Australian Institute of Health and Welfare, 2018)

Within the region, there were observed variations in premature mortality. Premature mortality rates were higher in more socioeconomically disadvantaged areas of the region, with premature mortality rates in Sandgate, Redcliffe and Caboolture all higher than the Australian rate. Redcliffe in particular has seen an increase in premature mortality in the years between 2012 and 2016. The Strathpine area has also experienced a distinct increase in premature mortality during the same time period.

[123] (Australian Institute of Health and Welfare, 2018)
[124] (Australian Institute of Health and Welfare, 2018)

Figure 73: Premature mortality rate (per 100,000) by Statistical Area level three and sub region, 2012 to 2016



Source: (Australian Institute of Health and Welfare, 2018)

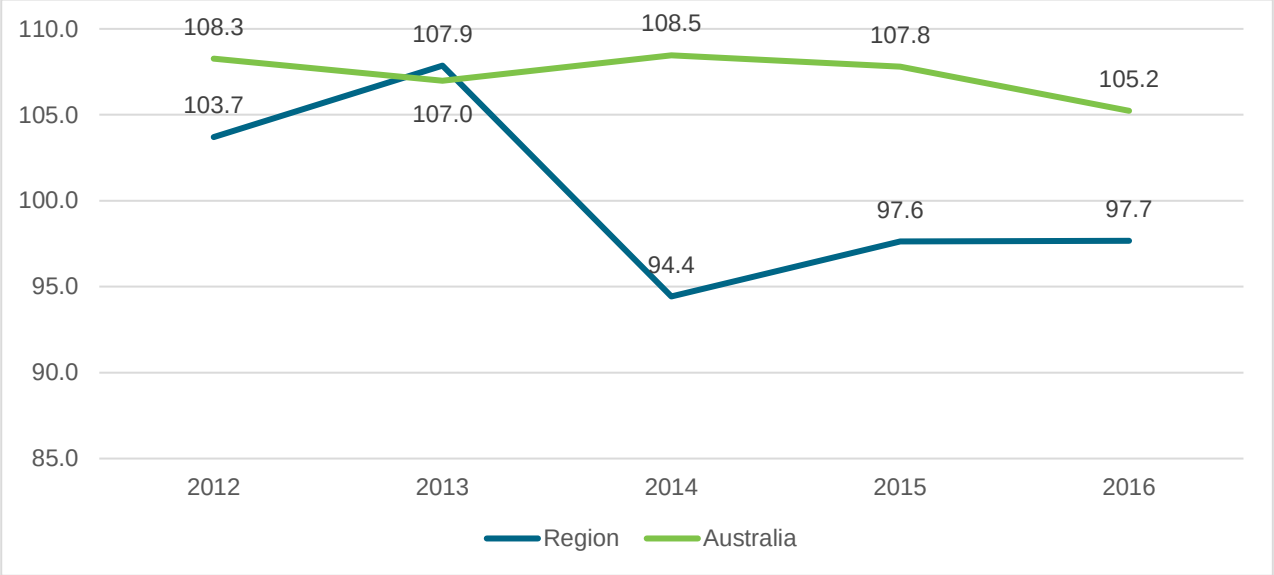
Potentially avoidable deaths

Potentially avoidable deaths are defined as deaths that may have been avoided in the context of the present healthcare system[125]. Potentially avoidable deaths include deaths from conditions that are potentially preventable through treatment within the current primary and hospital care systems. This is a measure of health system performance. Higher rates of potentially avoidable deaths highlight potential health service inequities.

In 2016, the rate of potentially avoidable deaths in the region was 97.7 per 100,000 people[126]. This was lower than the Australian rate of 105.2 potentially avoidable deaths per 100,000 people. Over the five-year period between 2012 and 2016, the rate of potentially avoidable deaths in the region decreased, with a considerable decrease in the rate of potentially avoidable deaths in the region from 2013 to 2014[127]. By contrast, the Australian rate decreased incrementally between 2012 and 2016. This is highlighted in Figure 74.

[125] (Australian Institute of Health and Welfare, 2018)
[126] Age standardised rate.
[127] (Australian Institute of Health and Welfare, 2018)

Figure 74: Potentially avoidable deaths, 2012 to 2016, rate per 100,000



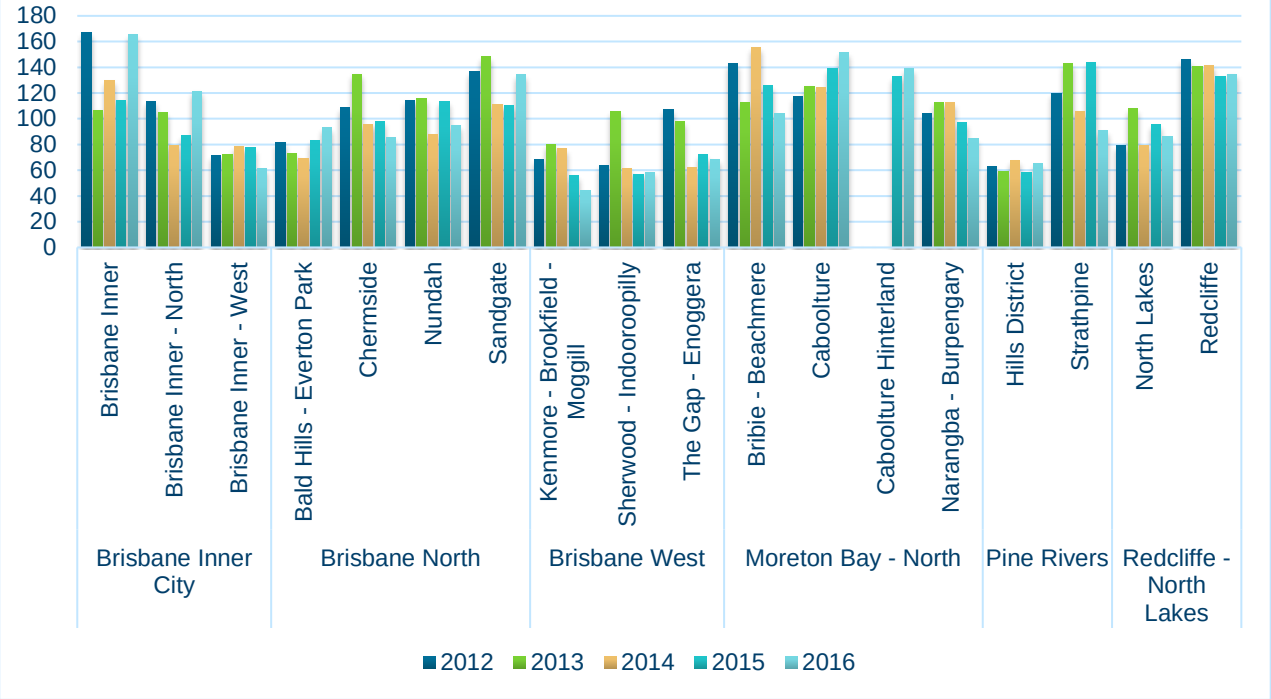
Source: (Australian Institute of Health and Welfare, 2018)

Potentially avoidable deaths accounted for 49.2 per cent of premature deaths in the region in 2016, accounting for an estimated 16.8 per cent of all deaths[128]. This is reasonably consistent with the Australian average. The proportion of premature deaths that were classified as potentially avoidable in the region decreased from 52.5 per cent in 2012[129].

Within the region, the rates of potentially avoidable deaths varied considerably. The Brisbane Inner SA3 had the highest rates of potentially avoidable deaths in 2016, while the Caboolture, Caboolture Hinterland and Redcliffe SA3s also had higher than average rates of potentially avoidable deaths. The rates of potentially avoidable deaths in the Redcliffe, Strathpine and Narangba – Burpengary SA3s declined during the period 2012 to 2016, whereas there has been a considerable increase in potentially avoidable deaths in the Caboolture SA3[130]. This is highlighted in Figure 75.

[128] (Australian Institute of Health and Welfare, 2018)
[129] (Australian Institute of Health and Welfare, 2018)
[130] (Australian Institute of Health and Welfare, 2018)

Figure 75: Potentially avoidable deaths (per 100,000) by statistical area level three and sub region, 2012-2016



Source: (Australian Institute of Health and Welfare, 2018)

Leading causes of death

Total population

The top five leading causes of death are consistent across the country, state and region (Table 3). In the period between 2012 and 2016, coronary heart disease was the leading cause of death in the region, accounting for 68.6 deaths per 100,000 people, or 13.1 per cent of all deaths during this period[131]. This rate is consistent with the Australian rate of 68.3 deaths per 100,000 people. Deaths from dementia and Alzheimer's disease (8.8 per cent at a rate of 44.4 per 100,000) were highest and cerebrovascular disease (7.7 per cent at a rate of 39.5 per 100,000) followed[132]. While the ranking was the same as Australia, the rates for dementia and Alzheimer's disease and cerebrovascular disease are higher than the national rate. Table 3 compares the top 20 causes of death in the region during the period between 2012 and 2016, compared with Queensland and Australia.

While the leading causes of death in the region are similar to Australia, there is a higher rate of deaths from suicide in the region compared to Australia.

[131] (Australian Institute of Health and Welfare, 2018)
[132] (Australian Institute of Health and Welfare, 2018)

Table 3: Top 20 leading causes of death and ICD code, all ages, 2012 – 2016

Australia	Per cent	Queensland	Per cent	Region	Per cent
Coronary heart disease (I20–I25)	12.9	Coronary heart disease (I20–I25)	13.7	Coronary heart disease (I20–I25)	13.1
Dementia and Alzheimer disease (F01, F03, G30)	7.7	Cerebrovascular disease (I60–I69)	7.1	Dementia and Alzheimer disease (F01, F03, G30)	8.8
Cerebrovascular disease (I60–I69)	7.0	Dementia and Alzheimer disease (F01, F03, G30)	7.1	Cerebrovascular disease (I60–I69)	7.7
Lung cancer (C33, C34)	5.4	Lung cancer (C33, C34)	5.9	Lung cancer (C33, C34)	5.4
Chronic obstructive pulmonary disease (COPD) (J40–J44)	4.4	Chronic obstructive pulmonary disease (COPD) (J40–J44)	4.5	Chronic obstructive pulmonary disease (COPD) (J40–J44)	4.3
Diabetes (E10–E14)	2.9	Colorectal cancer (C18–C21)	3.0	Colorectal cancer (C18–C21)	3.2
Colorectal cancer (C18–C21)	2.8	Diabetes (E10–E14)	2.8	Diabetes (E10–E14)	2.7
Cancer of unknown or ill-defined primary site (C26, C39, C76–C80)	2.5	Cancer of unknown or ill-defined primary site (C26, C39, C76–C80)	2.6	Prostate cancer (C61)	2.4
Heart failure and complications and ill-defined heart disease (I50–I51)	2.2	Prostate cancer (C61)	2.4	Cancer of unknown or ill-defined primary site (C26, C39, C76–C80)	2.2
Prostate cancer (C61)	2.1	Suicide (X60–X84)	2.3	Suicide (X60–X84)	2.1
Breast cancer (C50)	1.9	Breast cancer (C50)	1.9	Breast cancer (C50)	1.9
Influenza and pneumonia (J09–J18)	1.9	Pancreatic cancer (C25)	1.6	Influenza and pneumonia (J09–J18)	1.9
Suicide (X60–X84)	1.8	Influenza and pneumonia (J09–J18)	1.6	Pancreatic cancer (C25)	1.6
Pancreatic cancer (C25)	1.7	Heart failure and complications and ill-defined heart disease (I50–I51)	1.5	Accidental falls (W00–W19)	1.3
Accidental falls (W00–W19)	1.5	Melanoma (C43)	1.2	Heart failure and complications and ill-defined heart disease (I50–I51)	1.3
Kidney failure (N17–N19)	1.5	Accidental falls (W00–W19)	1.2	Parkinson disease (G20)	1.2
Hypertensive disease (I10–I15)	1.4	Liver disease (K70–K76)	1.2	Non-rheumatic valve disorders (I34–I38)	1.2
Cardiac arrhythmias (I47–I49)	1.4	Non-rheumatic valve disorders (I34–I38)	1.2	Cardiac arrhythmias (I47–I49)	1.2
Other ill-defined causes (R00–R94, R96–R99, I46.9, I95.9, I99, J96.0, J96.9, P28.5)	1.1	Leukaemia (C91–C95)	1.2	Melanoma (C43)	1.2
Liver disease (K70–K76)	1.1	Hypertensive disease (I10–I15)	1.2	Leukaemia (C91–C95)	1.1

Source: (Australian Institute of Health and Welfare, 2018)

Long term chronic conditions

Chronic conditions are a group of non-communicable conditions which tend to be long lasting and have persistent effects. Conditions that are considered chronic include (but are not limited to):

- arthritis
- asthma
- circulatory system disease such as high blood pressure
- chronic obstructive pulmonary disease (COPD)
- diabetes
- high blood cholesterol
- hypertension
- musculoskeletal such as osteoporosis

The most prevalent long term chronic condition affecting one in three people (aged 18 years and over) in the region is high blood cholesterol (30.9 per cent) followed by musculoskeletal (26.5 per cent). Chronic obstructive pulmonary disease (COPD) affects the least with 2.6 per cent as shown in Table 4.

By sub regions, there are vast differences with those living in Moreton Bay North reporting the highest rates of prevalence across seven of the eight reported conditions. In contrast, Pine Rivers tends to perform better than the other sub regions where it reports the equal or lowest rates for five of the eight reported conditions.

Table 4: Prevalence of chronic conditions by sub region, 2011-13[133]

Condition	Brisbane Inner City	Brisbane North	Brisbane West	Pine Rivers	Redcliffe - North Lakes	Moreton Bay North	Region (average)	Queensland
Arthritis	12.1%	13.6%	12.1%	11.3%	14.4%	**15.6%**	**13.7%**	**14.1%**
Asthma	8.4%	9.6%	9.4%	10.2%	10.1%	**10.7%**	**9.7%**	**10.2%**
Chronic obstructive pulmonary disease (COPD)	2.3%	2.7%	2.3%	2.3%	2.8%	**2.9%**	**2.6%**	**2.7%**
Circulatory system disease	16.3%	17.0%	15.4%	16.4%	16.3%	**17.1%**	**16.7%**	**17.8%**
Diabetes	4.3%	4.9%	4.3%	4.1%	5.4%	**5.9%**	**4.8%**	**5.1%**
High blood cholesterol	31.3%	30.5%	**32%**	31.9%	30.6%	30.8%	**30.9%**	**30.7%**
Hypertension	9.7%	9.8%	9.9%	8.6%	9.6%	**10.0%**	**9.9%**	**10.1%**
Musculoskeletal	24.7%	26.9%	25.4%	24.5%	26.3%	**27.2%**	**26.5%**	**27.2%**[1]

Source: (Public Health Information Development Unit, 2019) (Queensland Health, 2018)

[133] The rates of musculoskeletal conditions include arthritis and have been combined due to reporting methods for Queensland.

Long term health conditions

Long-term health conditions are an indicator of overall health among population groups, and are reported through the Australian Bureau of Statistics' patient experience survey. A person is classified as having a long-term condition if they reported having one of the following for a duration of at least six months, or were likely to last at least six months[134]:

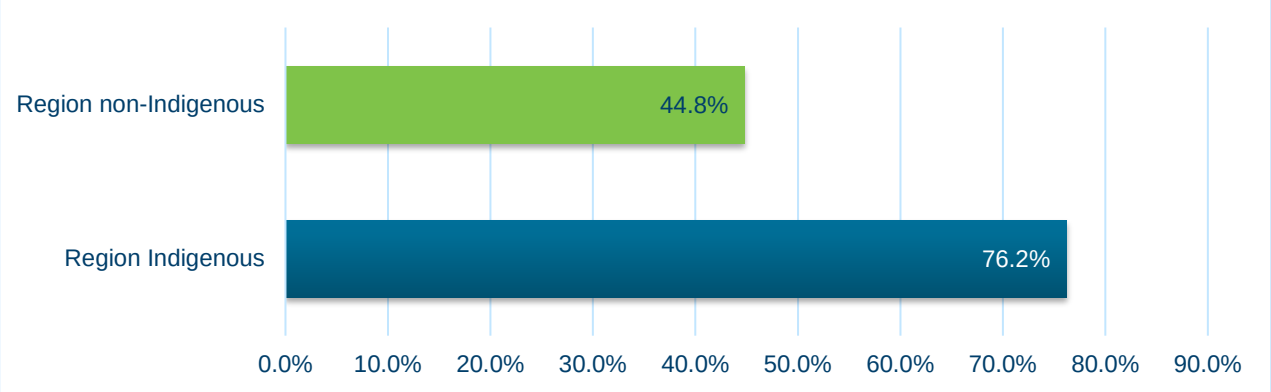
- arthritis or osteoporosis
- asthma
- cancer
- diabetes
- heart or circulatory condition
- mental health condition, including depression or anxiety
- long term injury
- any other long term condition.

In the region, 50.4 per cent (CI 46.8 – 54.1 per cent) of adults had a long term health condition in 2016-17. The proportion of adults living in the region with a long term condition increased by 5.6 per cent from 2013-14, where the proportion of adults with a long term health condition was 44.8 per cent (CI 43.6 – 46 per cent)[135]. By contrast, the proportion of people with a long term health condition in Australia only increased by 1.5 per cent during the same time period, from 48.4 per cent (CI 47.7 – 49.1 per cent) in 2013-14 to 49.9 per cent in 2016-17[136][137].

The proportion of Aboriginal and Torres Strait Islander people in the region[138] who report having one long term health condition is 25 per cent, with a further 51.2 per cent living with two long term health conditions. This is worse than the national rate of 20.9 per cent of Aboriginal and Torres Strait Islander people with one long term health condition and 46.9 per cent of Aboriginal and Torres Strait Islander people nationally living with two long term health conditions[139].

This is also 1.7 times the rate for the non-Indigenous population of the region (44.8 per cent)[140]. This difference can be seen in Figure 1.

Figure 76: Long term conditions by Indigenous status, region



Source: (Australian Bureau of Statistics, 2015), (Australian Institute of Health and Welfare, 2018)

[134](Australian Bureau of Statistics, 2015).
[135] (Australian Institute of Health and Welfare, 2018)
[136] Confidence interval not reported for 2016-17.
[137] (Australian Institute of Health and Welfare, 2018)
[138] During 2012-13
[139] (Australian Bureau of Statistics, 2015)
[140] The Non-Indigenous rate is reported for a slightly different time period than the Indigenous rate.

Maternal health

Maternal health is concerned with the health of women throughout preconception, pregnancy, childbirth and postpartum and the strong interactions that exist between maternal wellbeing and the health of offspring. The health of the mother (or primary carer) is integral to the health and wellbeing of the child and family[141].

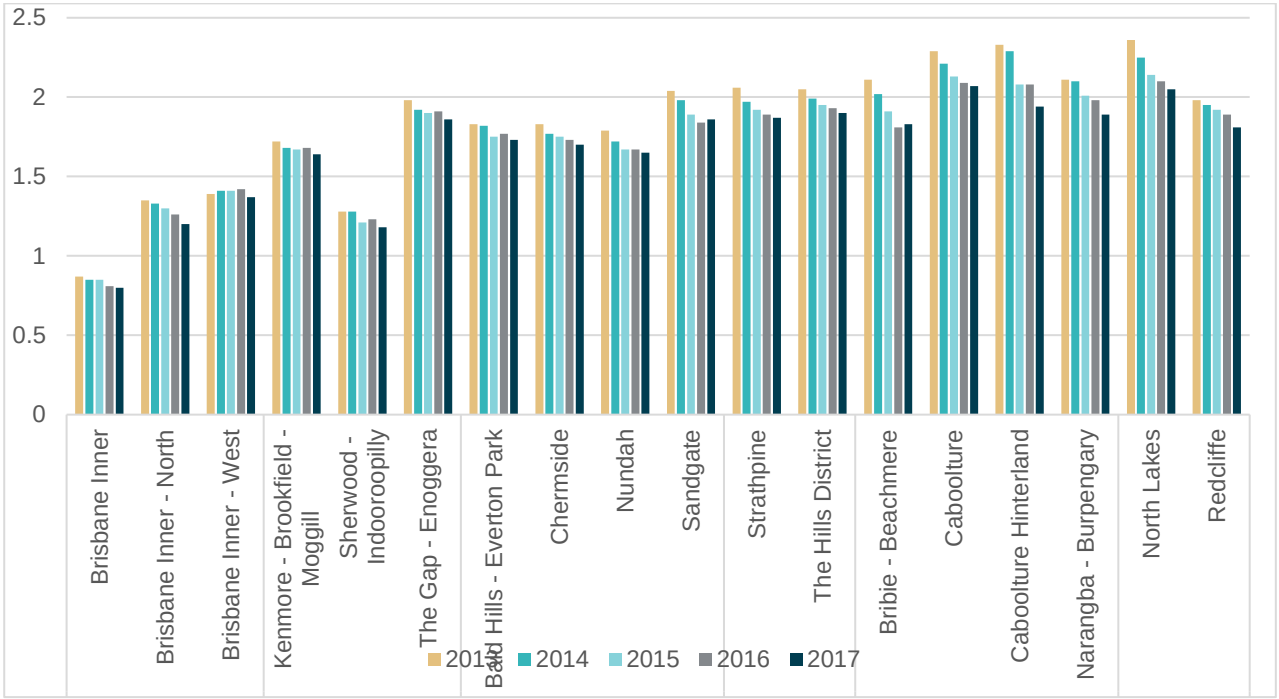
Evidence from a number of disciplines has demonstrated that the period from conception through the early years of a child's life provide the foundation for lifelong physical, social and emotional wellbeing[142]. Nevertheless, women are at risk of complications arising from or related to obstetric interventions. Many women report feeling unprepared for the transition to motherhood, a lack of confidence in their parenting skills and there is a high occurrence of parental stress, postnatal distress and depression in the short and long term after birth[143]. Physical recovery from birth may take nine to 12 months and women report a number of health problems postpartum[144].

Fertility

The total fertility rate represents the average number of babies a woman will give birth to throughout her reproductive life[145]. It is generally accepted that a total fertility rate of 2.1 babies per woman is sufficient to replace both herself and her partner, known as replacement level fertility[146]. According to the Australian Bureau of Statistics, the total fertility rate in Australia has been below replacement level since 1976. In 2017 the total fertility rate for Queensland was 1.82.

In the region, the total fertility rate in 2017 ranged from 0.87 in Brisbane Inner SA3 to 2.07 in Caboolture SA3. There was an observed decline in fertility rates between 2013 and 2017 as highlighted in Figure 77.

Figure 77: Total fertility rates by SA3, and sub region, 2011 to 2015



Source: Australian Bureau of Statistics, 2018

[141] (Commonwealth Department of Health, 2011)
[142] (Commonwealth Department of Health, 2011)
[143] (Commonwealth Department of Health, 2011)
[144] (Commonwealth Department of Health, 2011)
[145] (Australian Bureau of Statistics, 2018)
[146] (Australian Bureau of Statistics, 2018)

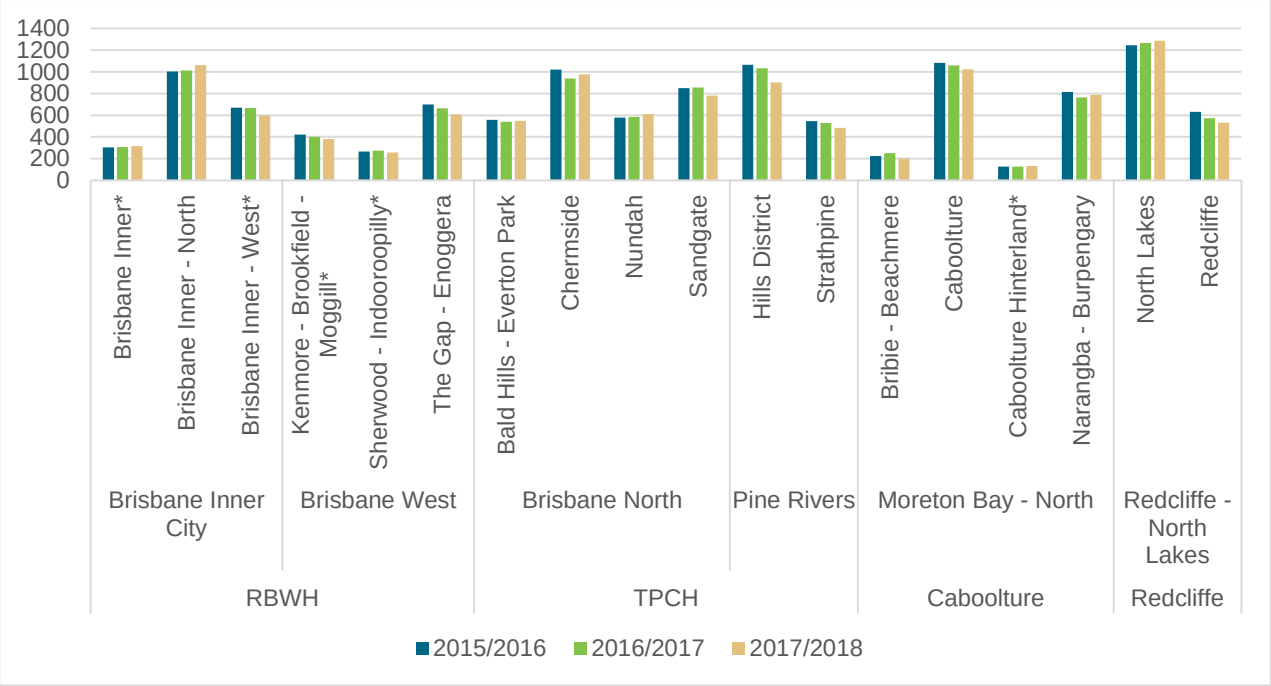
Births

Between 2015-16 and 2017-18, there were 35,439 births to residents of the region, an average of 11,813 births per annum. Almost one in five births in Queensland between 2015-16 and 2017-18 were to residents of the region. This is consistent with the proportion of the Queensland population that resides in the region.

Births decreased by 2.6 per cent per annum across the region over this period. The largest per annum decreases were in Redcliffe SA3 (8.1 per cent per annum) and Hills District (8.0 per cent per annum). This is highlighted in Figure 78.

Within the region, the highest number of births between 2015-16 and 2017-18 were to residents of North Lakes SA3 (3799 births at an average of 1266 per annum), followed by Caboolture SA3 (3166 births at an average of 1055 per annum).

Figure 78: Number of births by SA3, sub region and hospital catchment of residency, 2015-16 to 2017-18[147][148]

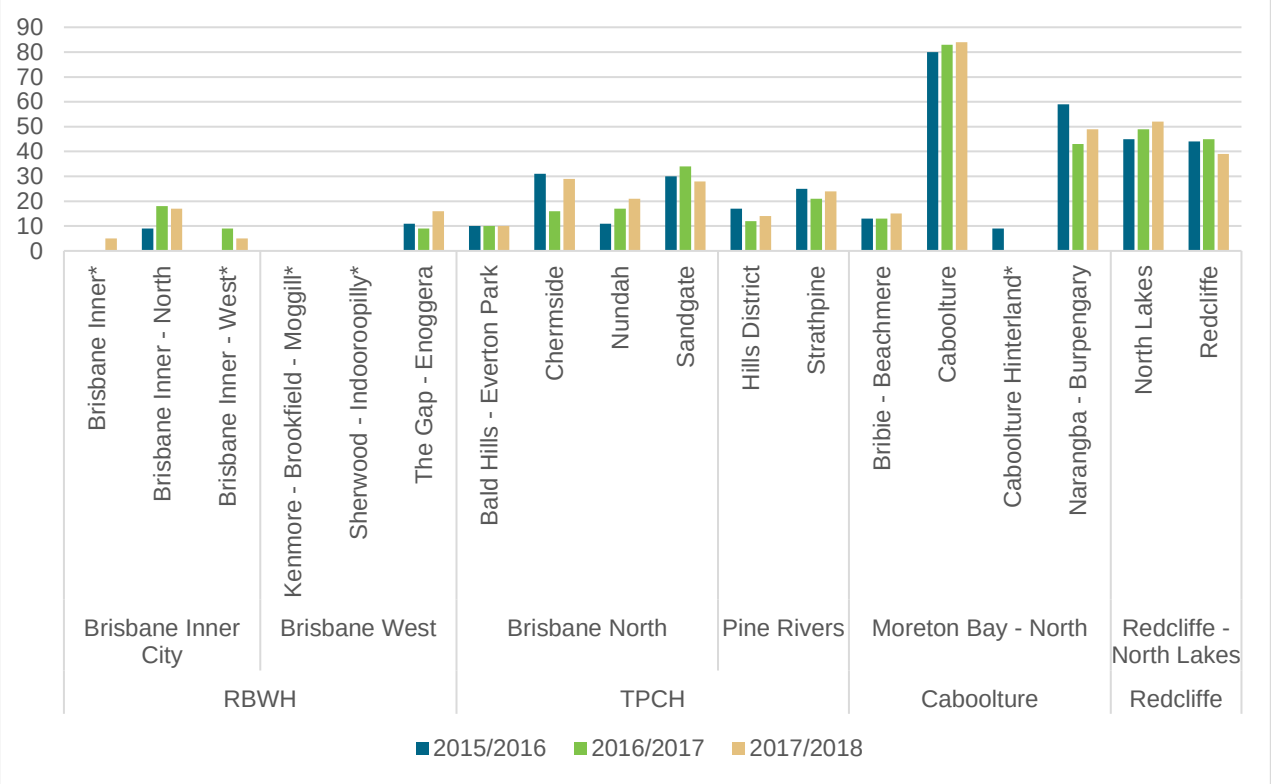


Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

[147] * Includes counts of less than 5 that have been suppressed
[148] ** Note 2017-18 figures are preliminary

Between 2015-16 and 2017-18, 3.4 per cent of all births in the region were to Aboriginal and/or Torres Strait Islander women compared to 6.8 per cent of all births in Queensland. Caboolture SA3 had the highest number of babies born to Aboriginal and/or Torres Strait Islander women (247) between 2015-16 to 2017-18, followed by Narangba - Burpengary (151) and North Lakes (146), as shown in Figure 79.

Figure 79: Number of births to Aboriginal and/or Torres Strait Islander women by SA3, sub region and hospital catchment of residency, 2015-16 to 2017-18[149][150]



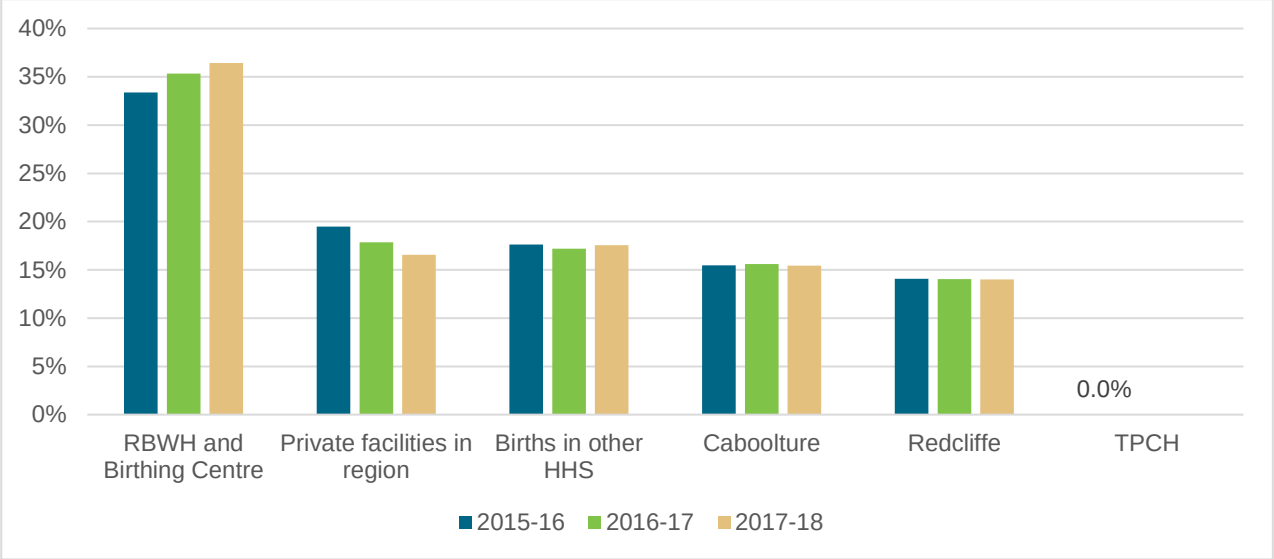
Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

Births by facility

Between 2015-16 and 2017-18 one in every three births to mothers residing in the region occurred at the Royal Brisbane and Women's Hospital (RBWH). Births at private facilities in the region decreased over the three years from 19.5 per cent in 2015-16 to 16.6 per cent in 2017-18. A large proportion of babies (an average of 17.5 per cent over the three years) born to women residing in the region occurred in facilities outside of the region. Between 2015-16 and 2017-18 15.5 per cent of babies were born at Caboolture Hospital and 14.0 per cent were born at Redcliffe Hospital. This is shown in Figure 80.

[149] *SA3s with counts of less than 5 have been suppressed
[150] ** Note 2017-18 figures are preliminary

Figure 80: Proportion of births to women residing in the region by facility, 2015-16 to 2017-18



Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

National core maternity indicators

Antenatal visit

Antenatal visits have a positive effect on health outcomes for both mothers and their babies as they provide care and can identify conditions that may be detrimental to health during pregnancy[151]. They are particularly important to Aboriginal and Torres Strait Islander women who have a greater exposure to additional risk factors including:

- anaemia
- poor nutritional status
- hypertension
- diabetes
- smoking.

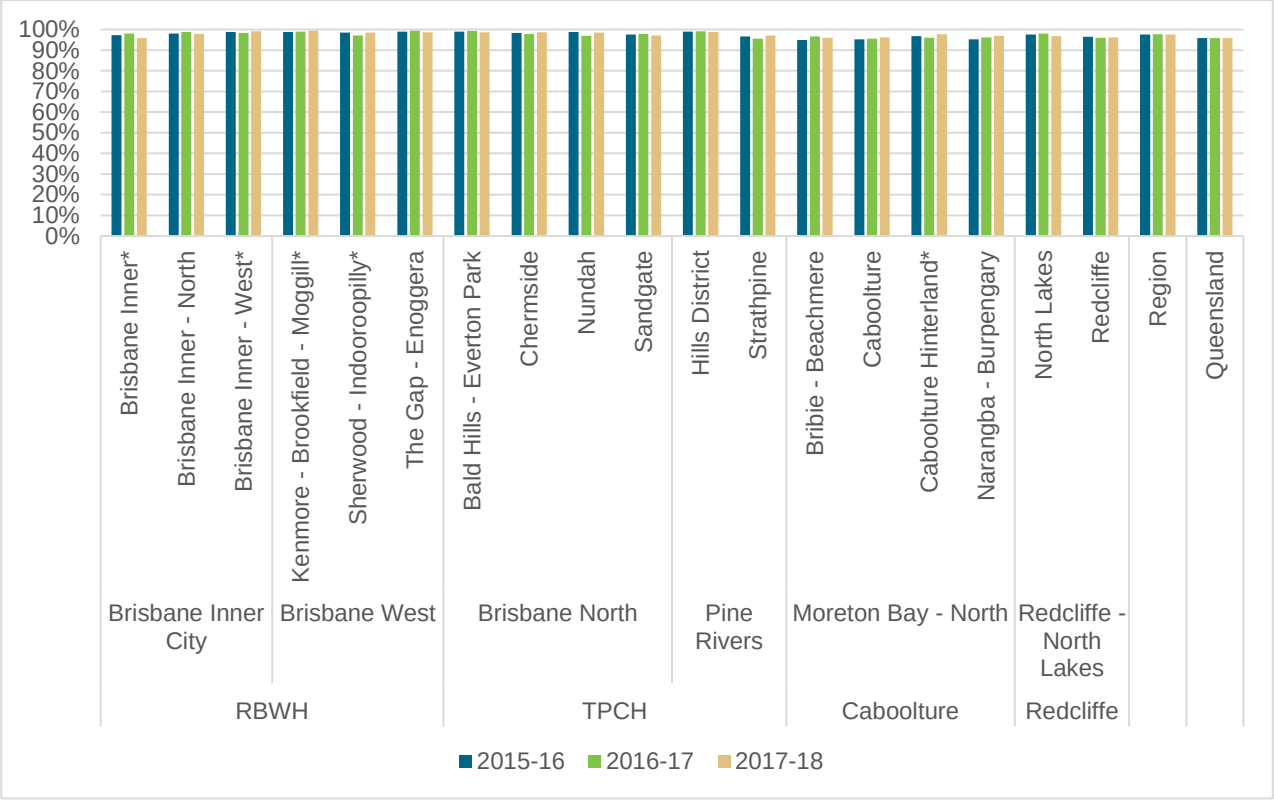
Source: Department of Health, 2012

The Commonwealth Department of Health (2012) recommends that a schedule of ten antenatal visits for a woman's first pregnancy without complications and seven antenatal visits for any subsequent pregnancy are adequate to address a woman's health needs while pregnant. The number of antenatal visits during pregnancy is strongly associated with socioeconomic status. Women residing in areas of high socioeconomic disadvantage are less likely to have five or more antenatal visits throughout the course of their pregnancy.

In 2017-18, 97.6 per cent of women in the region had five or more antenatal visits while pregnant. Women in the region are more likely to have five or more antenatal visits when compared to Queensland (95.8 per cent). Within the region, the proportion of women who had five or more antenatal visits in 2017-18 while pregnant ranged from 95.8 per cent in Brisbane Inner SA3* to 99.5 per cent in Kenmore – Brookfield - Moggill SA3*, as highlighted in Figure 81.

[151] (Commonwealth Department of Health, 2011)

Figure 81: Proportion of women attending five or more antenatal visits by SA3, sub region and hospital catchment, 2015-16 to 2017-18[152][153]



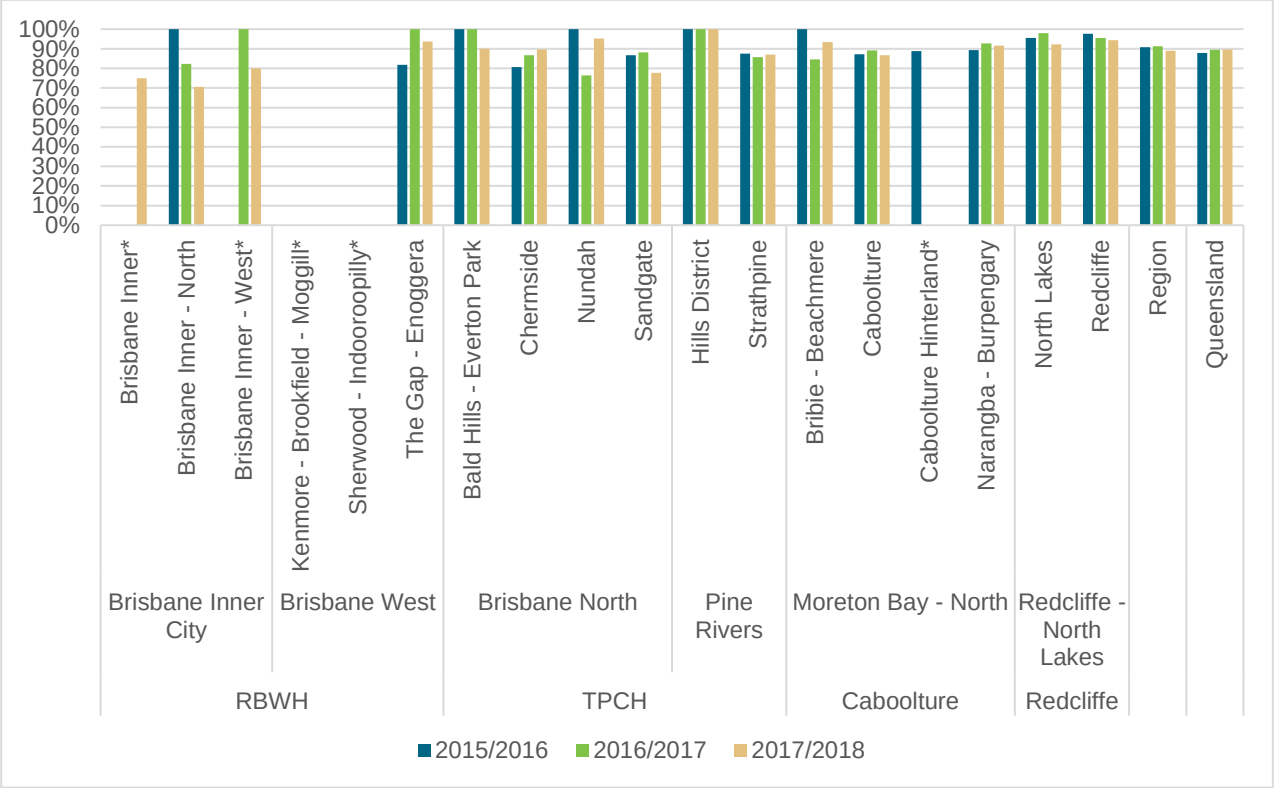
Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

Aboriginal and Torres Strait Islander women are less likely than non-Indigenous women to have five or more antenatal visits during pregnancy. In 2017-18, 88.9 per cent of Aboriginal and/or Torres Strait Islander women in the region had five or more antenatal visits, compared to 97.9 per cent of non-Indigenous women. Within the region, the proportion of Aboriginal and/or Torres Strait Islander women who had five or more antenatal visits while pregnant ranged from 70.6 per cent in Brisbane Inner-North SA3 to 100 per cent in The Hills District SA3.

The proportion of Aboriginal and Torres Strait Islander women who had five or more antenatal visits during pregnancy in the region (88.9 per cent) was similar to the proportion of Aboriginal and Torres Strait Islander women in Queensland (89.6 per cent) as highlighted in

[152] ** Note 2017-18 figures are preliminary
[153] * Includes counts of less than 5 that have been suppressed

Figure 82: Proportion of Aboriginal and Torres Strait Islander women attending five or more antenatal visits by SA3, sub region and hospital catchment, 2015-16 to 2017-18[154] [155]



Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

Smoking during pregnancy

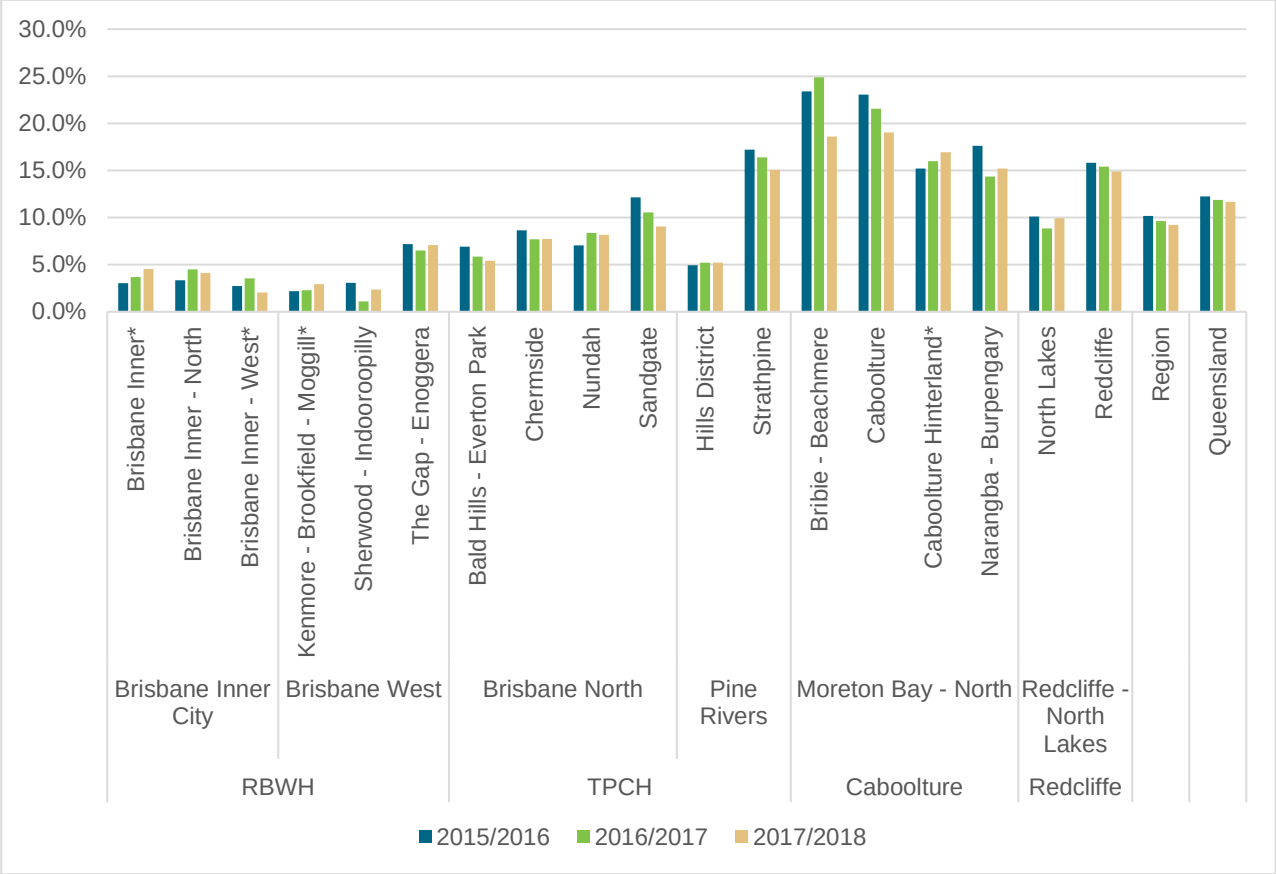
Women who smoke while pregnant are at increased risk of experiencing a wide range of problems including ectopic pregnancy, miscarriage and premature labour[156]. Babies whose mothers smoke during pregnancy are at higher risk of sudden infant death syndrome, decreased lung function and having a low birth weight[157].

In 2017-18, 9.2 per cent of women in the region reported smoking at some stage during pregnancy. This is lower than the Queensland rate of 11.7 per cent. Within the region, there was considerable variation in the proportion of women who reported smoking during pregnancy in 2017-18, ranging from 2.4 per cent of women in Sherwood - Indooroopilly SA3 to 19.0 per cent of women in the Caboolture SA3, as shown in

Figure 83. The Redcliffe, Strathpine, Narangba - Burpengary, Caboolture Hinterland, Bribie - Beachmere and Caboolture SA3s had rates of smoking during pregnancy higher than the average for the region and Queensland. The proportion of women who reported smoking during pregnancy is strongly associated with socioeconomic disadvantage, with much higher rates of smoking during pregnancy reported in areas with higher levels of socioeconomic disadvantage.

[154] * Includes counts of less than 5 that have been suppressed
[155] ** Note 2017-18 figures are preliminary
[156] Department of Health and Human Services, State Government of Victoria 2016
[157] Department of Health and Human Services, State Government of Victoria 2016

Figure 83: Proportion of women who smoked during pregnancy by SA3, sub region and hospital catchment, 2015-16 to 2017-18[158][159]



Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

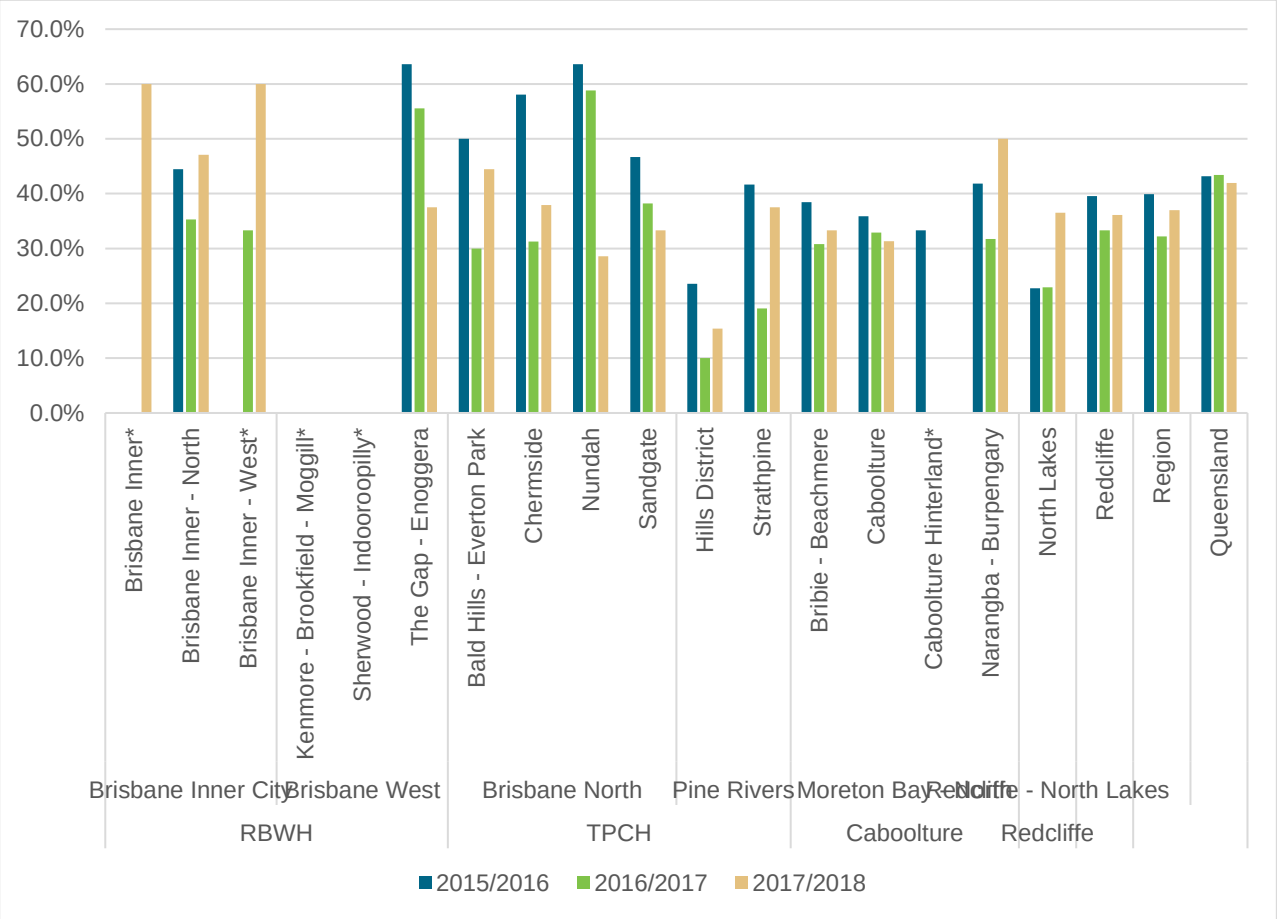
In 2017-18, the rate of Aboriginal and Torres Strait Islander women who smoked during pregnancy was 4.5 times the rate of non-Indigenous women in the region, with 37.0 per cent of Aboriginal and Torres Strait Islander women smoking during pregnancy compared to 8.2 per cent of non-Indigenous women.

Within the region, there was considerable variation in the proportion of Aboriginal and Torres Strait Islander women who reported smoking during pregnancy in 2017-18, ranging from 15.4 per cent in Hills District SA3 to 60.0 per cent in Brisbane Inner and Brisbane Inner-West SA3s.

Of the SA3s with data for the three years 2015-16 to 2017-18, smoking rates during pregnancy decreased in all SA3s except for Brisbane Inner - North (2.9 per cent increase per annum), Narangba - Burpengary (9.3 per cent increase per annum) and North Lakes (26.8 per cent increase per annum). This is highlighted in Figure 84.

[158] * Includes counts of less than 5 that have been suppressed
[159] ** Note 2017-18 figures are preliminary

Figure 84: Proportion of Aboriginal and Torres Strait Islander women who smoked during pregnancy by SA3, sub region and hospital catchment, 2015-16 to 2017-18[160][161]



Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

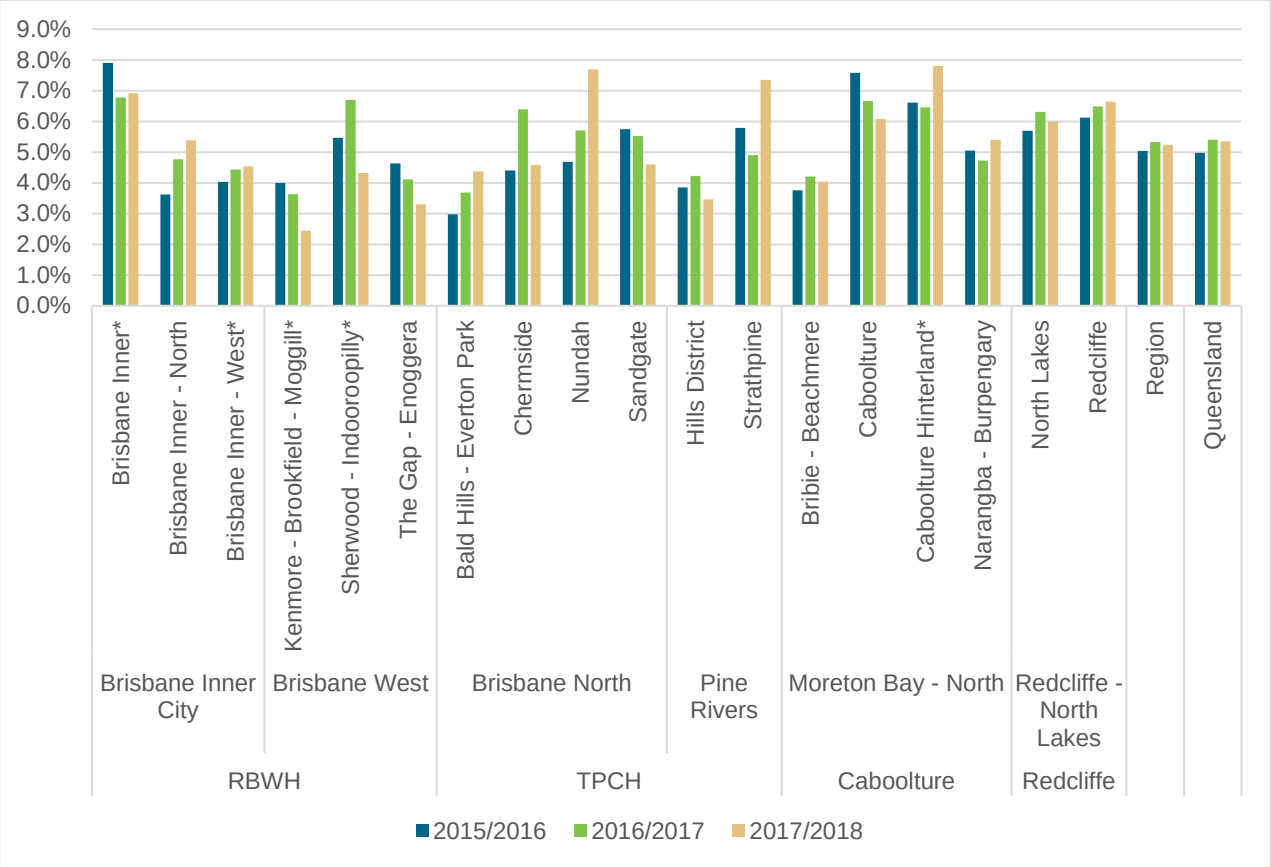
Low birthweight

Low birth weight babies are at greater risk of death and are more vulnerable to infection, breathing difficulties and long-term health problems in adulthood[162]. A baby is defined as having a low birthweight if they are born weighing less than 2500 grams[163].

In 2017-18, 5.2 per cent of babies born in the region had a low birthweight. This is consistent with the Queensland rate of 5.4 per cent. Within the region, the proportion of babies born with a low birthweight ranged from 2.4 per cent in Kenmore – Brookfield - Moggill SA3 to 7.8 per cent in the Caboolture Hinterland SA3, as shown in Figure 85.

[160] * Includes counts of less than 5 that have been suppressed
[161] ** Note 2017-18 figures are preliminary
[162] Department of Health and Human Services, State Government of Victoria 2016
[163] (Australian Bureau of Statistics, 2008)

Figure 85: Proportion of low birthweight babies by SA3, sub region and hospital catchment, 2015-16 to 2017-18[164][165]



Source: Perinatal Data Collection (PDC), Department of Health, Queensland. Extracted on 17 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch.

Aboriginal and Torres Strait Islander babies are more likely to be born underweight than non-Indigenous babies. In 2017-18, 9.3 per cent of Aboriginal and Torres Strait Islander babies (37 out of 400) were born underweight in the region compared to 5.1 per cent of non-Indigenous babies (543 out of 10,683). The figures for the region are consistent with the rates for Queensland where 9.8 per cent of Aboriginal and Torres Strait Islander babies were born underweight compared to 5.0 per cent of non-Indigenous babies.

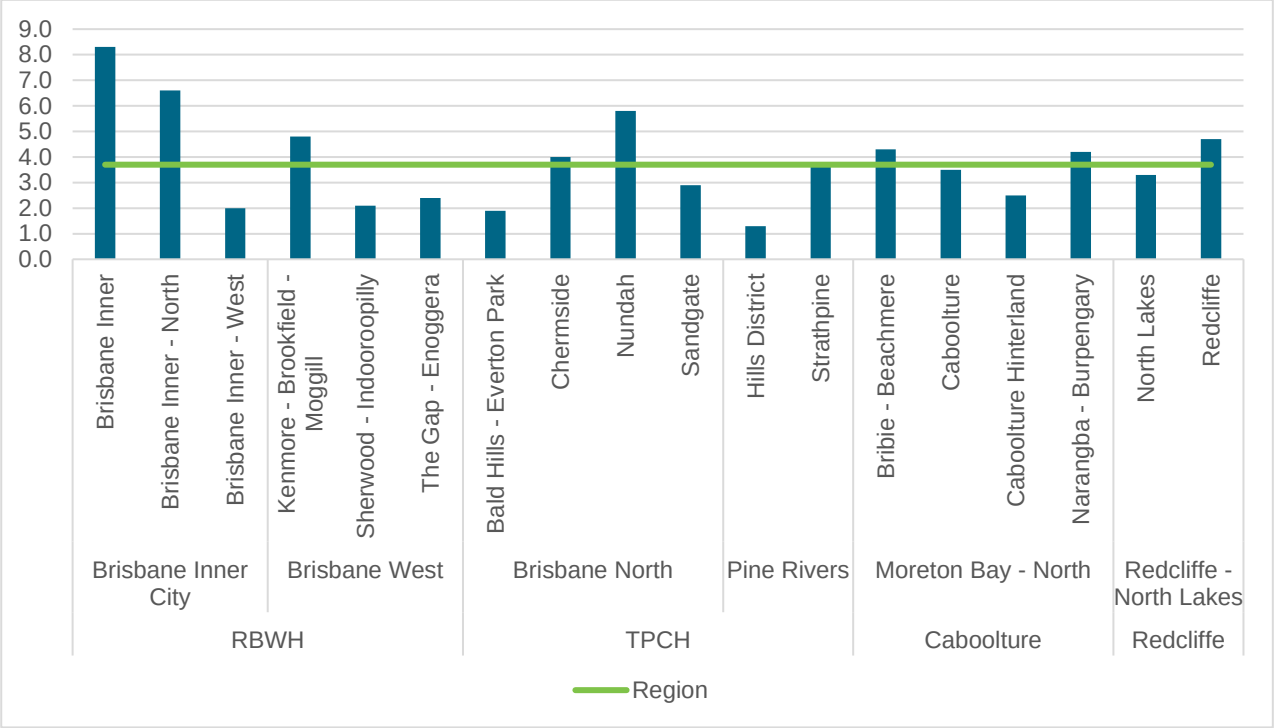
Infant mortality rate

Infant mortality is the number of deaths in the first year of life compared to the number of live births occurring in the same population during the same period of time. In the region, the infant mortality rate was 3.7 per 1000 live births for those aged less than one year old (for the period 2014 - 2016). This was higher than the national infant mortality rate of 3.3 deaths per 1000 live births.

Infant mortality rates in the region ranged from 1.3 per 1000 live births in the Hills District SA3 to 8.3 per 1,000 live births in the Brisbane Inner SA3, as shown in Figure 86.

[164] * Includes counts of less than 5 that have been suppressed
[165] ** Note 2017-18 figures are preliminary

Figure 86: Number of deaths among infants aged less than 1 year per 1,000 live births by SA3, sub region and hospital catchment, 2014-2016



Source: Australian Institute of Health and Welfare 2018, Child and maternal health indicators (updated 25 October 2018).

Communicable diseases

Communicable diseases spread from one person to another or from an animal to a person. The spread often happens through airborne viruses or bacteria, but can also occur through blood or other bodily fluid. For many diseases, various means have been used to control the spread including; vaccines, antibiotics, general hygiene (i.e hand washing) and other sterile techniques[166]. To help control disease spread, it is mandatory for Queensland Health to be notified upon the diagnosis of many of these diseases.

The data in this section was extracted from the Queensland Health notifiable conditions register in December 2018. Table 5 shows the number of notifications of selected communicable diseases for the years 2013 to 2017. There is a general increase in notifications across these years, however this is not necessarily linear nor uniform with notifications of diseases increasing or decreasing between years.

Table 5: Number of notifications of communicable diseases by grouping, region 2013-2017

Group	Communicable Disease	2013	2014	2015	2016	2017
Blood-borne Disease	Hepatitis C	380	379	402	416	347
Gastrointestinal Disease	Campylobacter	882	1349	1589	1477	1606
	Cryptosporidiosis	181	137	332	581	213
	Salmonellosis	622	968	903	860	689
Vaccine Preventable Disease	Influenza	1409	4545	7447	4919	12245
	Measles	20	26	5	5	1
	Mumps	12	15	14	21	30
	Pertussis	688	245	632	472	201
	Rotavirus	277	237	232	279	595
	Rubella	2	0	3	0	1
	Varicella	1557	1482	1698	1819	1813
Sexually Transmitted Infection	Chlamydia	3654	3827	4024	4546	4984
	Gonorrhoea	558	624	673	1054	1551
	Syphilis (Infectious < 2yr Dur)	92	90	143	174	287

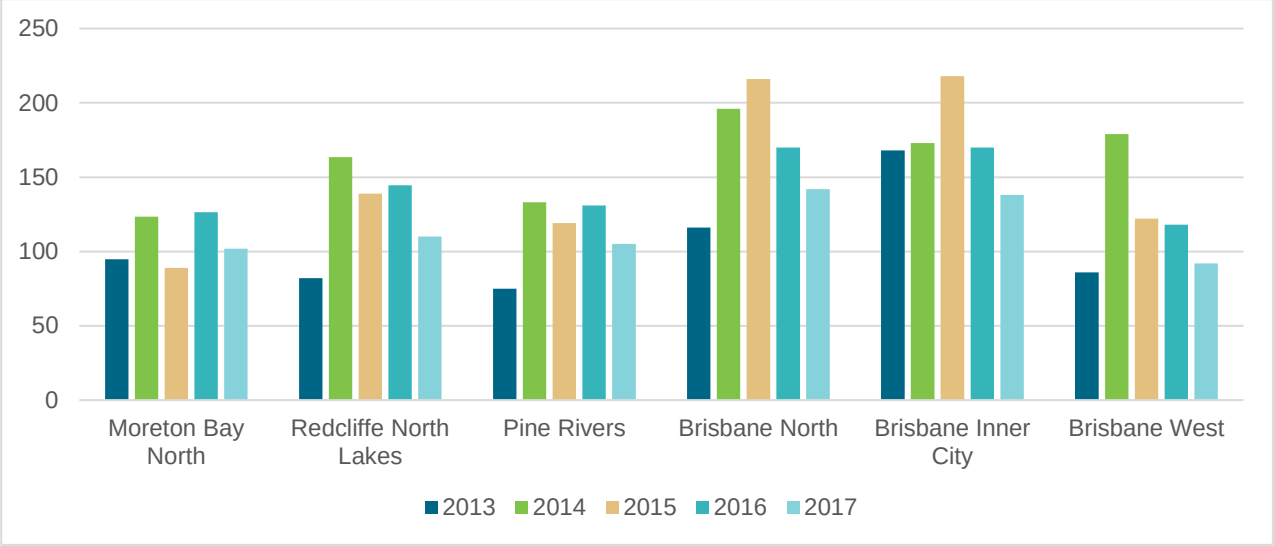
Source: Queensland Health notifiable conditions register

Gastrointestinal Diseases

Campylobacter, salmonella and cryptosporidium are the three most common organisms associated with notified gastrointestinal disease in Queensland. The number of notified cases of salmonella and campylobacter were high in many parts of Queensland during the 2014-2015 summer prompting a significant public health response. This was evident in the region where the number of notified cases were particularly high in the Brisbane North and Brisbane Inner City regions (Figure 87 and Figure 88). In many areas the number of notified cases of campylobacter remained high into 2017.

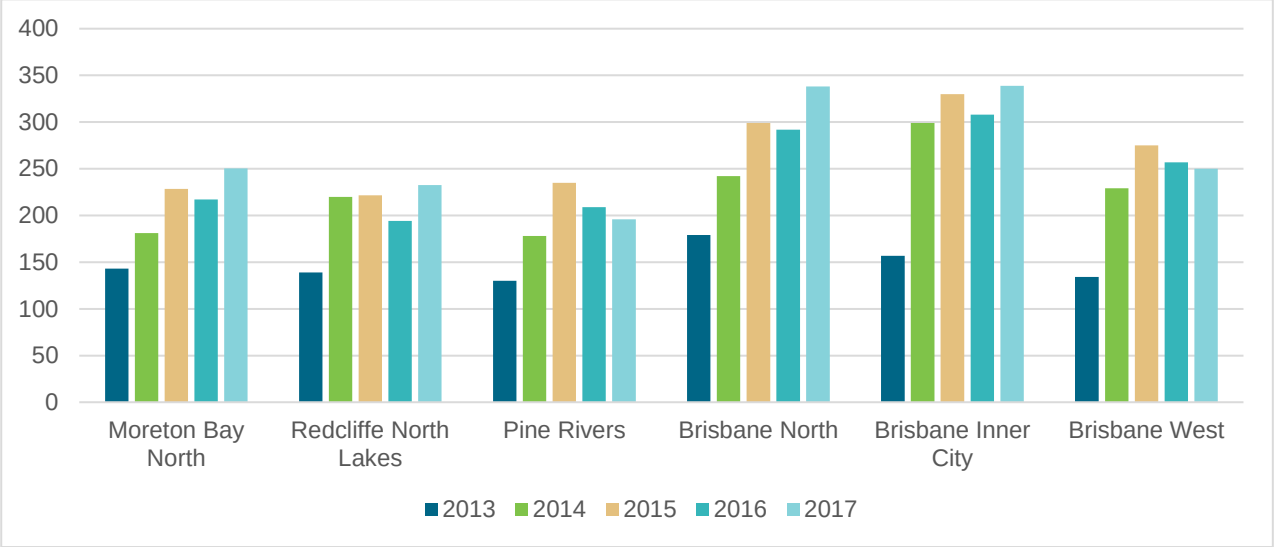
[166] (Queensland Health, 2014)

Figure 87: Number of notifications of salmonellosis by sub region, 2013-2017



Source: Queensland Health notifiable conditions register

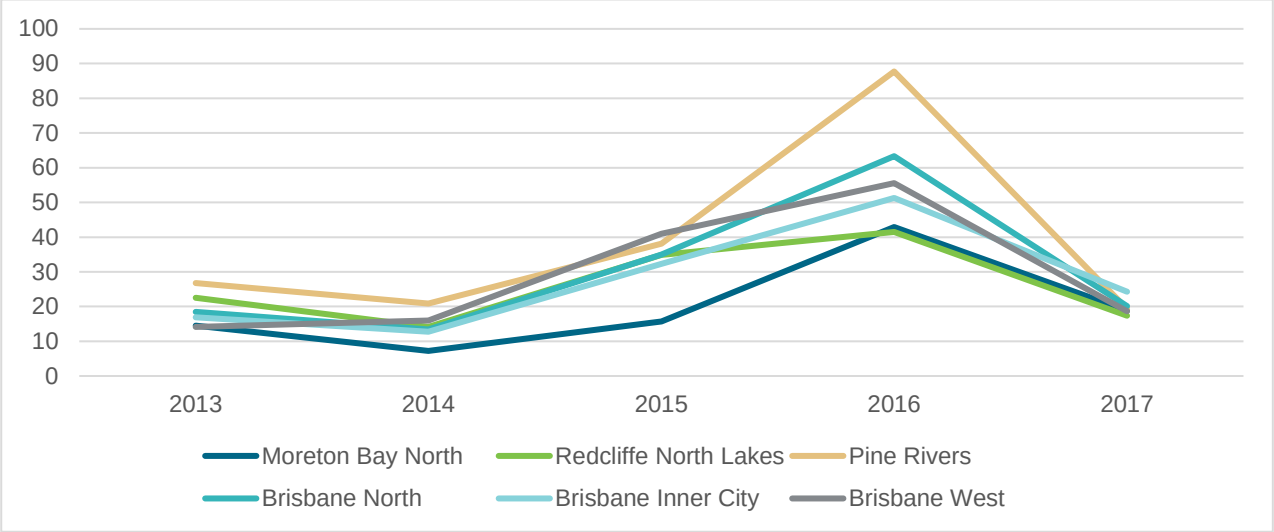
Figure 88: Number of notifications of campylobacter by sub region 2013-2017



Source: Queensland Health notifiable conditions register

In 2016 there was an elevated number of notified cases of cryptosporidiosis across South East Queensland including in the region. Figure 89presents the rates of notifications per 100 000 population by sub region. While numbers of notifications increased across the entire region, Pine Rivers had a larger increase in the rate of cryptosporidiosis notifications compared to the other areas.

Figure 89: Notification rates of cryptosporidiosis per 100 000 population by sub region, 2013-2017



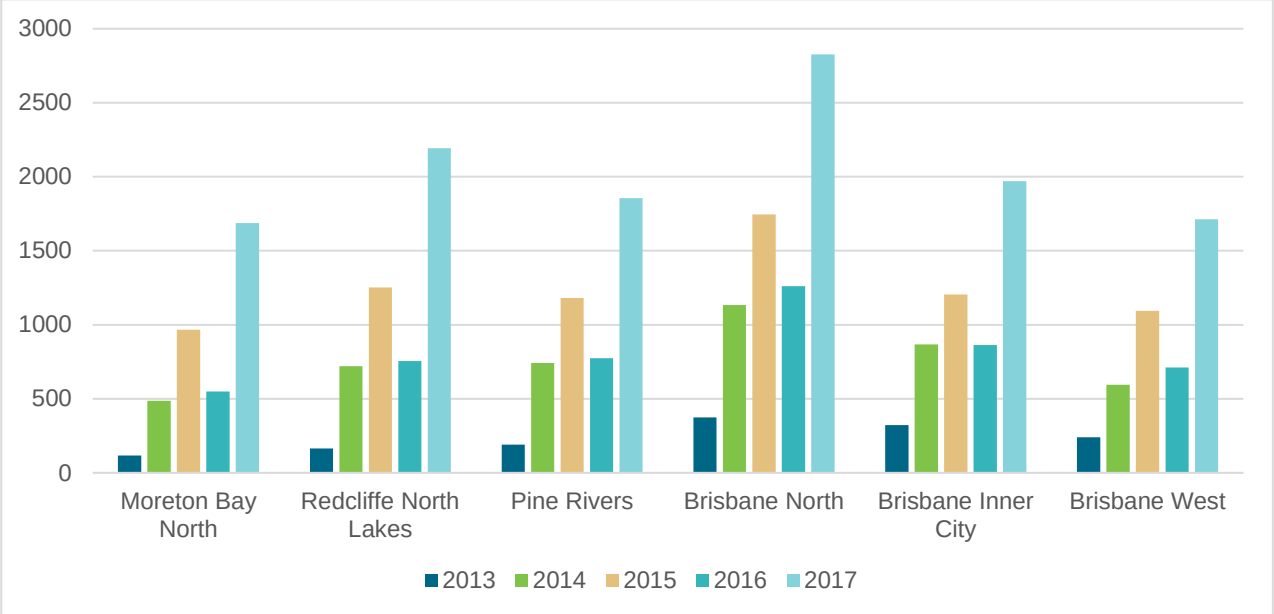
Source: Queensland Health notifiable conditions register

Vaccine Preventable Diseases

A vaccine preventable disease is a disease for which an effective vaccine exists. The numbers of notifications presented in Figure 90suggest good control of many of these diseases including measles, mumps and rubella, however preventing and managing disease outbreaks remain a challenge. Influenza and pertussis continue to contribute a significant burden of disease and there has been a general trend of increasing varicella notifications between 2013 - 2017.

The 2017 flu season saw high levels of activity with a very high number of notified cases of seasonal influenza. This was evident in all sub regions (figure x) although there was some geographic variation. Pine Rivers recorded the highest rate (1435 notifications per 100 000) while Brisbane Inner City had the lowest rate (850 notifications per 100 000).

Figure 90: Number of notifications of influenza by sub region, 2013-2017.



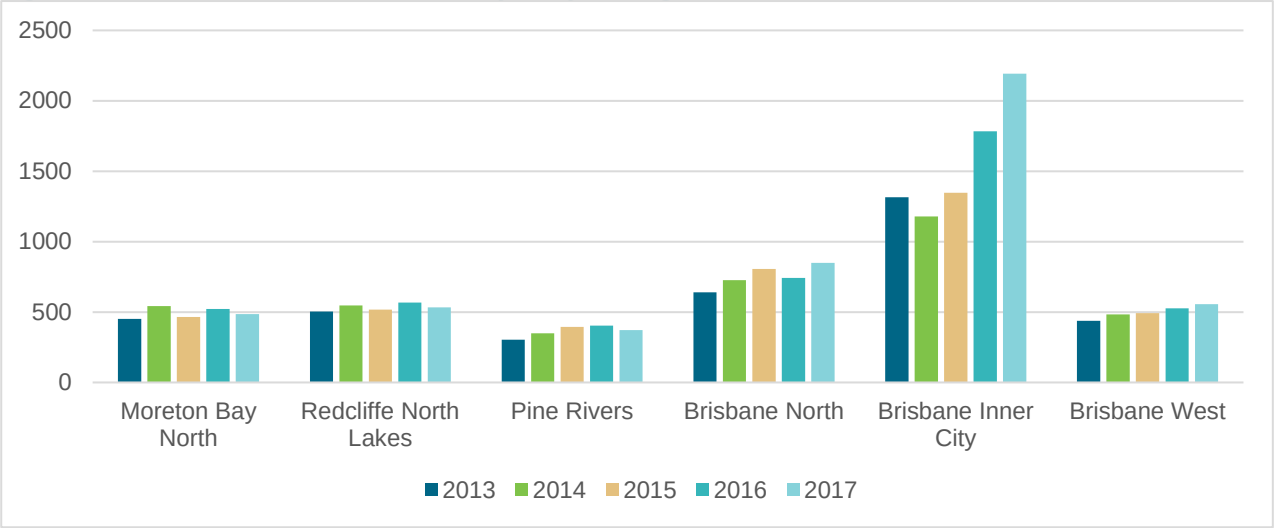
Source: Queensland Health notifiable conditions register

Sexually Transmitted Infections

The general trend of increasing notifications of sexually transmitted infection cases across the region is demonstrated in Table 5. There are important data limitations when reviewing geographic variation of this data as some cases are notified using a clinic address rather than a residential address. Nonetheless, Figure 91 and Figure 92 suggest that the highest rates of notifications are in the Brisbane Inner City region although there is important variation across the region.

Chlamydia is one of the most commonly notified diseases and there are a significant number of notifications throughout the region. This is demonstrated in Figure 91 which shows large numbers of notifications outside of the central areas in Moreton Bay North, Redcliffe – North Lakes and Brisbane West.

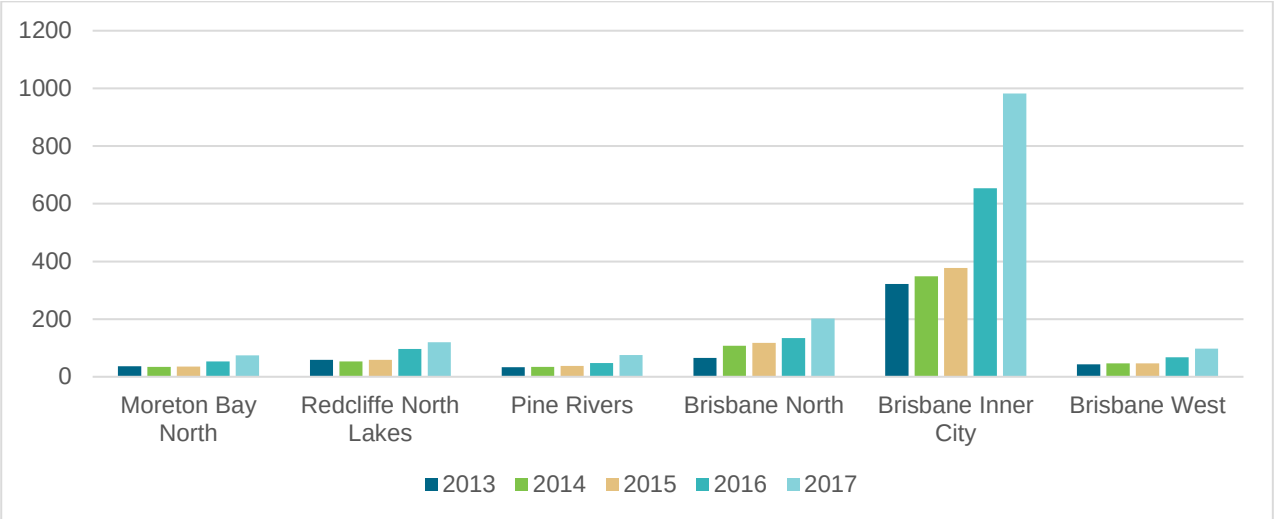
Figure 91: Number of notifications of chlamydia by sub region, 2013-2017



Source: Queensland Health notifiable conditions register

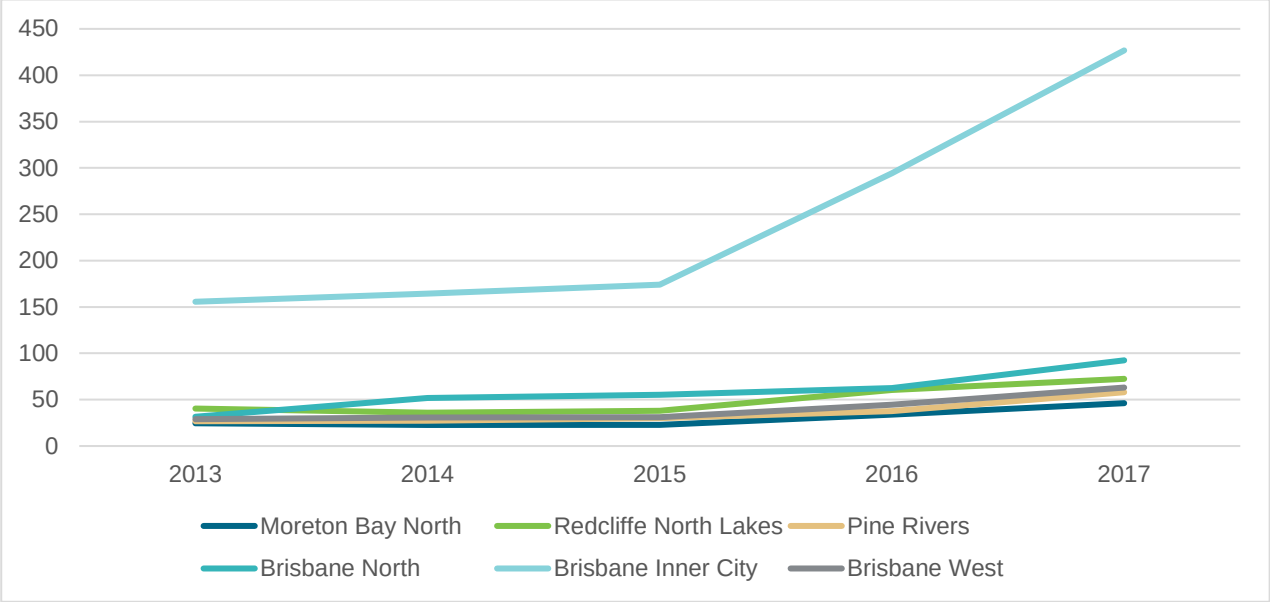
Notification of gonorrhoea are concentrated in the more central areas of the region (Figure 92 and Figure 93). Although there has been an increase in the number of notified cases across the regoin, the largest increase has been in the Brisbane Inner City. In this sub region the number of notifications of gonorrhea cases tripled between 2013 and 2017.

Figure 92: Number of notifications of gonorrhoea by sub region 2013-2017



Source: Queensland Health notifiable conditions register

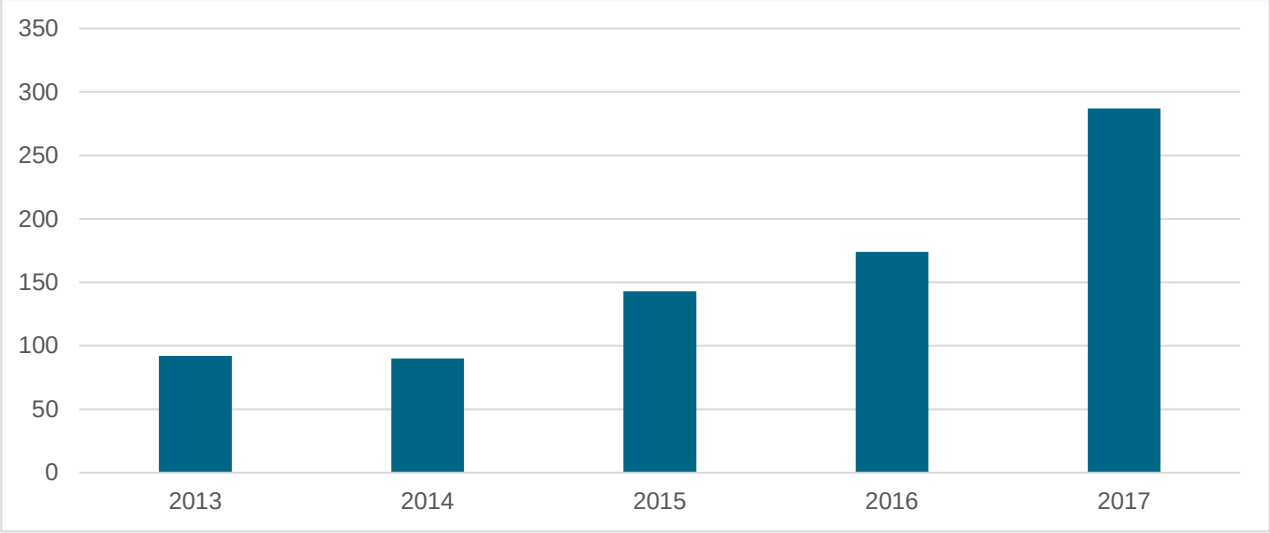
Figure 93: Notification rates of gonorrhoea per 100 000 by sub region, 2013- 2017



Source: Queensland Health notifiable conditions register

The number of notifications of syphilis have also increased significantly (Figure 94). Due to the low numbers of notified cases of syphilis with a non-clinic address, notifications by sub region are unable to be accurately determined. As with other STI's though, the most significant burden is in the inner city.

Figure 94: Number of notifications of syphilis, region, 2013 to 2017



Source: Queensland Health notifiable conditions register

Mental health

Mental health is more than the absence of mental disorders, it is a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community[167]. Mental health difficulties are common, affecting people from all walks of life, ages and backgrounds[168]. Many do not seek or receive the treatment and support they need. This leads to poor outcomes for individuals and families and contributes to a growing social and economic burden for communities[169].

People living with mental health difficulties are also more likely to have other health issues, including increased drug and alcohol use and increased body mass. According to the Commonwealth Department of Health (2010), 73.4 per cent of people who screened positive for psychotic illness reported having a body mass index (BMI) in the overweight or obese range, and 45.1 per cent having a BMI in the obese range[170]. Participants in the *Living with psychosis survey* also reported low levels of physical activity. As a result, people living with psychotic illness are at an increased risk of co-morbid chronic conditions, when compared to the general population.

Physical health of mental health consumers

The life expectancy of people with severe mental illness is approximately 20 per cent (13-32 years) less than that of the general population[171]. The majority of this excess mortality is attributable to treatable physical disease with cardiovascular disease being the leading cause of death in this group. Metabolic changes induced by antipsychotics contribute to weight gain, dyslipidaemia, increased risk of diabetes and to increased cardiovascular disease.

Between January and June 2018, 74 per cent of open Metro North mental health consumers had a body mass index (BMI) of either overweight (>=25 and <30) or obese (>=30), with 91 per cent of this group having a waist measurement above the threshold (>= 94 cm for males and >= 80 cm for females)[172].

Smoking is a major contributor to the health gap between people with mental illness and the general population. People with a mental illness have higher smoking rates, higher levels of nicotine dependence and lower cessation rates than the general population. Smoking-related illnesses contribute to higher rates of morbidity and mortality and smoking contributes to ongoing economic disadvantage.

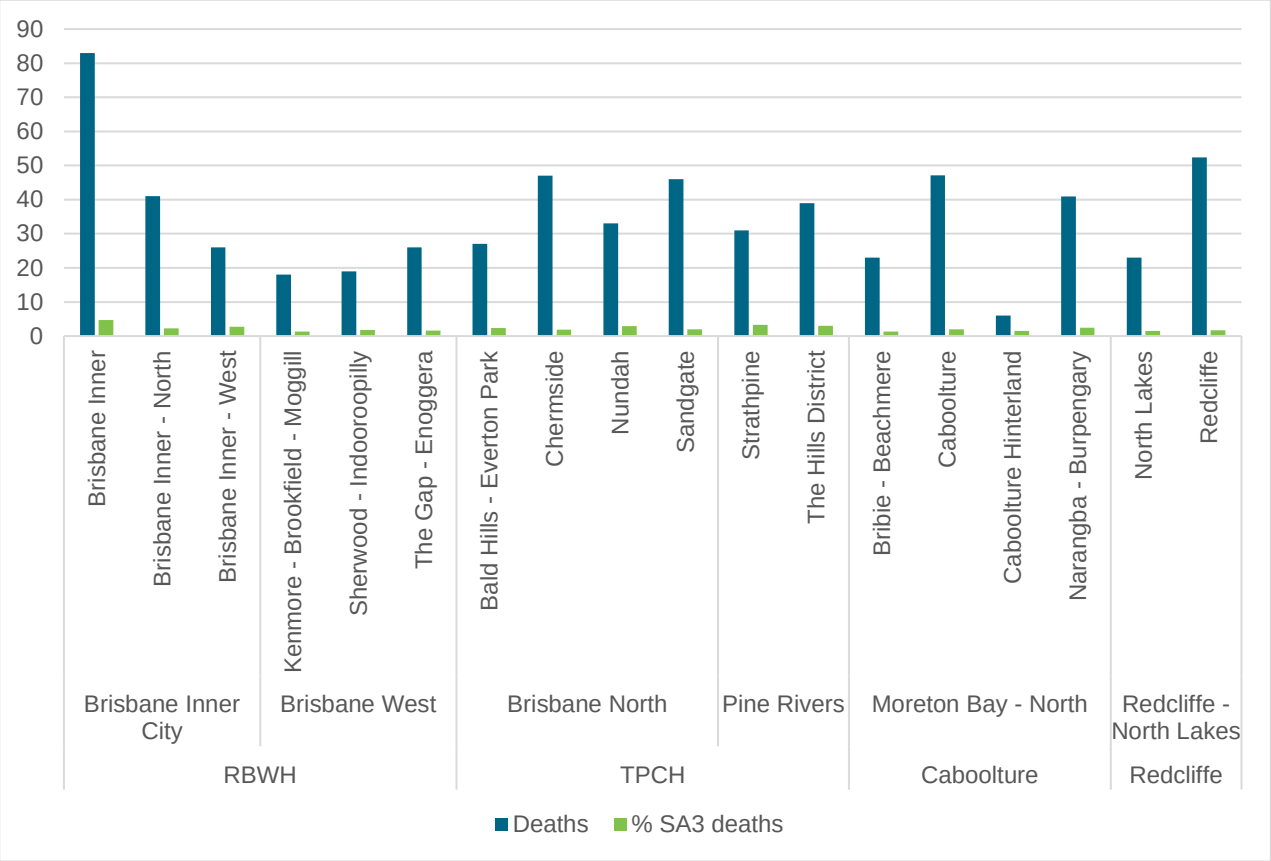
Between June and November 2018, 43 per cent of Metro North mental health inpatients were identified as having smoked within the last 30 days. Between July and December 2018, 52 per cent of Metro North mental health community consumers were identified as having smoked within the last 30 days[173].

[167] (World Health Organization, 2013)
[168] (Queensland Health, 2014)
[169] (Queensland Health, 2014)
[170] (Department of Health, 2010)
[171] (Department of Health, 2010)
[172] Source: Mental Health Clinical Collaborative
[173] Source: Mental Health Clinical Collaborative

Suicide

Between 2012 and 2016 there were 628 suicides among residents of the region. Brisbane Inner SA3 had the highest number of suicides (83), which accounted for 4.7 per cent of all cause deaths in that SA3. Suicide accounted for 3.3 per cent and 3.0 per cent of all cause deaths in Strathpine and The Hills District SA3s, respectively, as shown in Figure 95.

Figure 95: Suicide deaths by SA3 and hospital catchment, 2012-2016



Source: AIHW (Australian Institute of Health and Welfare) 2018. MORT (Mortality Over Regions and Time) books: Statistical Area Level 3 (SA3), 2012–2016. Canberra: AIHW.

Mental and behavioural disorder emergency department presentations

Mental and behaviour disorders emergency department (ED) presentations are defined as patients presenting with a range of mental health and alcohol and other drug related illness having a primary ICD code of mental and behavioural disorders which includes organic mental disorders, mood and neurotic disorders, other mental disorders and schizophrenia. This section outlines trends in ED services provided by Metro North HHS facilities for residents of the region and excludes residents presenting to hospitals outside of the region and private facilities.

Mental and behavioural disorder ED presentations represented 6.4 per cent of all resident ED presentations in the region in 2017-18. This was an increase from 6.2 per cent of all resident ED presentations in 2015-16.

Overall mental and behavioural disorder ED presentations for region residents in Metro North HHS public hospitals increased 3.2 per cent per annum since 2015-16. Child ED presentations increased 9.9 per cent per annum while adult presentations increased 3.0 per cent per annum.

Table 6: Mental and behavioural disorder ED presentations, region residents in region public hospitals, 2015-16 to 2017-18

Adult/ Child	2015-16	2016-17	2017-18	CAGR
Child	518	586	626	9.9%
Adult	15,031	15,203	15,938	3.0%
Total	**15,549**	**15,789**	**16,564**	**3.2%**
% of all ED presentations	**6.2%**	**6.3%**	**6.4%**	

Source: Emergency Department Information System (EDIS), Queensland Health

The most mental and behavioural disorder ED presentations were for residents of the Brisbane North, Brisbane Inner City and the Redcliffe - North Lakes sub regions in 2017-18. The largest increase in mental and behavioural disorder ED presentations were for residents of the Brisbane North sub region with a 5.5 per cent per annum increase since 2015-16, followed by residents of the Redcliffe - North Lakes sub region with a 5.4 per cent per annum increase since 2015-16.

Table 7: Mental and behavioural disorder ED presentations, region residents in region public hospitals by sub region, 2015-16 to 2017-18

Sub region	Hospital Catchment	2015-16	2016-17	2017-18	CAGR
Brisbane North	RBWH	3,137	3,210	3,489	5.5%
Pine Rivers	RBWH	1,459	1,515	1,550	3.1%
Brisbane Inner City	TPCH	3,033	3,114	3,196	2.7%
Brisbane West	TPCH	2,240	2,156	2,295	1.2%
Moreton Bay - North	Caboolture	2,846	2,771	2,885	0.7%
Redcliffe - North Lakes	Redcliffe	2,834	3,023	3,149	5.4%
Grand Total		**15,549**	**15,789**	**16,564**	**3.2%**

Source: Emergency Department Information System (EDIS), Queensland Health

'Suicidal Ideation' was the top diagnosis group for resident ED presentations in 2017-18, increasing 11.5 per cent per annum from 3141 presentations in 2015-16 to 3905 presentations in 2017-18. This is followed by 'Mental disorder, not otherwise specified' and 'Mental and behavioural disorders due to use of alcohol'.

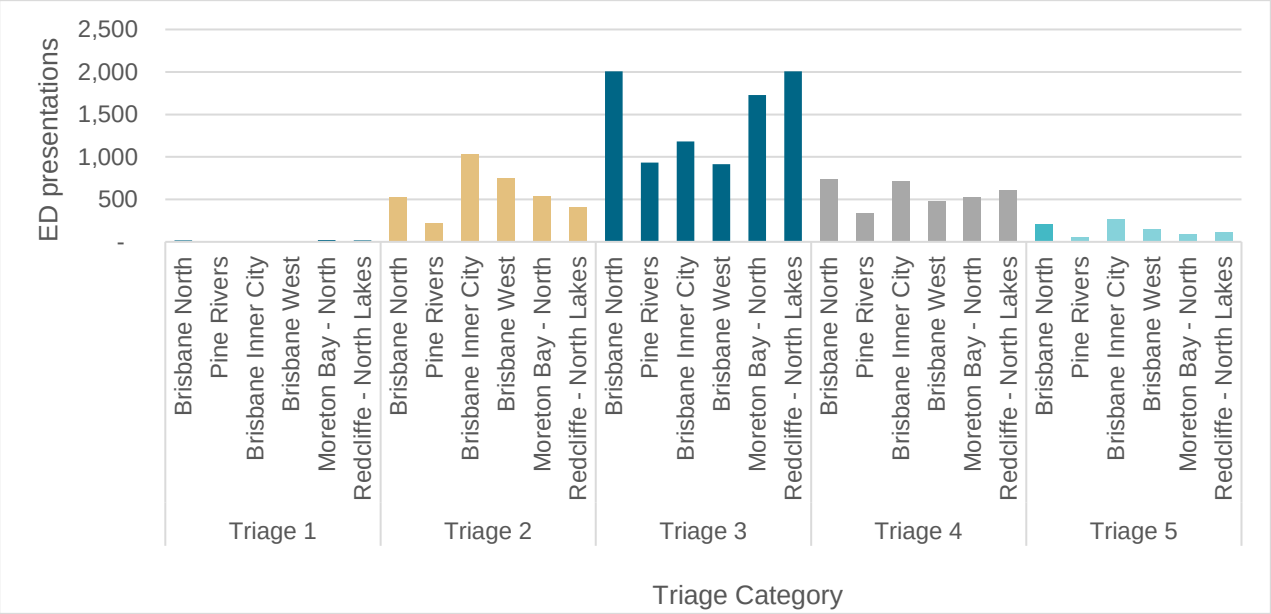
Table 8: Mental and behavioural disorder ED presentations, region residents in region public hospitals by ICD group, 2015-16 to 2017-18

ICD Group	2015-16	2016-17	2017-18	CAGR
R45 Symptoms and signs involving emotional state (Suicidal Ideation)	3,141	3,492	3,905	11.5%
F99 Mental disorder, not otherwise specified	2,257	2,258	2,127	-2.9%
F10 Mental and behavioural disorders due to use of alcohol	1,834	1,911	2,017	4.9%
F41 Other anxiety disorders	1,504	1,411	1,329	-6.0%
Intentional Self Harm	877	832	920	2.4%
F32 Depressive episode	958	932	908	-2.6%
F19 Mental and behavioural disorders due to multiple drug use an	823	733	832	0.5%
F05 Delirium, not induced by alcohol and other psychoactive subs	527	558	641	10.3%
R41 Other symptoms and signs involving cognitive functions	694	709	635	-4.3%
F43 Reaction to severe stress, and adjustment disorders	513	419	578	6.1%
F20 Schizophrenia	526	531	567	3.8%
F29 Unspecified nonorganic psychosis	518	533	499	-1.9%
F09 Unspecified organic or symptomatic mental disorder	169	217	234	17.7%
F50 Eating disorders	144	146	223	24.4%
F91 Conduct disorders	135	171	212	25.3%
F07 Personality and behavioural disorders due to brain disease,	208	207	208	0.0%
F31 Bipolar affective disorder	143	165	179	11.9%
F44 Dissociative [conversion] disorders	159	154	173	4.3%
F03 Unspecified dementia	200	203	167	-8.6%
F60 Specific personality disorders	125	126	115	
F51 Nonorganic sleep disorders	33	38	48	20.6%
F45 Somatoform disorders	46	29	31	-17.9%
F68 Other disorders of adult personality and behaviour		3	7	
Grand Total	15,549	15,789	16,564	3.2%

Source: Emergency Department Information System (EDIS), Queensland Health

A total of 53 per cent of mental and behavioural disorder ED presentations were categorised as triage category 3, followed by triage category 2 (21 per cent), and triage category 4 (20 per cent). ED presentations for Brisbane Inner City and Brisbane West residents had the highest proportion of triage category 2 mental and behavioural disorder ED presentations.

Figure 96: Mental and behavioural disorder ED presentations, region residents in region public hospitals by sub region, 2015-16 to 2017-18



Source: Emergency Department Information System (EDIS), Queensland Health

Mental health hospitalisations

Mental health hospitalisations for residents of the region have increased 7.4 per cent per annum since 2015-16. In 2017-18, there were 30,760 admitted mental health hospitalisations at either a public or private hospital for residents within the region. 'Major Psychiatric Disorder' reported the highest number of hospital separations for adults while 'Other Psychiatry' reported the highest number of hospital separations for children[174]. This was followed by other Designated Mental Health (Not Elsewhere Classified) for both adults and children within the region.

Table 9: Mental health – hospital separations, public and private hospitals, all region residents by age group, 2015-16 to 2017-18

Adult/Child	Enhanced Service Related Group	2015-16	2016-17	2017-18	CAGR
Child	Other Psychiatry	116	151	183	25.6%
	Major Psychiatric Disorder	134	44	56	-35.4%
	Designated Mental Health (Not Elsewhere Classified)	17	22	30	32.8%
Child Total		267	217	269	0.4%
Adult	Major Psychiatric Disorder	20,668	23,091	24,068	7.9%
	Designated Mental Health (Not Elsewhere Classified)	3,189	3,640	3,516	5.0%
	Other Psychiatry	2,531	2,908	2,907	7.2%
Adult Total		26,388	29,639	30,491	7.5%
Grand Total		26,655	29,856	30,760	7.4%

Source: Queensland Health Admitted Patient Data Collection (QHAPDC)

Between 2015-16 and 2017-18, the Brisbane Inner City sub region had the greatest percentage increase in hospitalisations increasing 10.8 per cent per annum followed by the Redcliffe - North Lakes sub region, increasing 9.1 per cent per annum.

Residents of the Pine Rivers and Brisbane West sub regions had the highest proportion of mental health hospitalisations in private hospitals while Brisbane Inner City and Moreton Bay – North sub regions had the highest proportion of mental health hospitalisations in public hospitals.

[174] Child is defined as a person aged below 15 years of age.

Table 10: Mental health – hospital separations, public and private hospitals, by sub region and hospital catchment, 2015-16 to 2017-18

Sub region	Hospital Catchment	Hospital Type	2015-16 Separations	2015-16 %	2016-17 Separations	2016-17 %	2017-18 Separations	2017-18 %	CAGR
Brisbane Inner City	RBWH	Private	3,145	59.0%	3,558	53.7%	3,671	56.1%	8.0%
		Public	2,188	41.0%	3,066	46.3%	2,877	43.9%	14.7%
Brisbane Inner City Total			5,333	20.0%	6,624	22.2%	6,548	21.3%	10.8%
Brisbane West	RBWH	Private	4,400	77.7%	4,297	70.7%	4,723	73.5%	3.6%
		Public	1,260	22.3%	1,778	29.3%	1,704	26.5%	16.3%
Brisbane West Total			5,660	21.2%	6,075	20.3%	6,427	20.9%	6.6%
Brisbane North	TPCH	Private	4,150	69.5%	4,675	69.9%	5,124	72.9%	11.1%
		Public	1,821	30.5%	2,013	30.1%	1,908	27.1%	2.4%
Brisbane North Total			5,971	22.4%	6,688	22.4%	7,032	22.9%	8.5%
Pine Rivers	TPCH	Private	2,934	77.3%	2,961	77.7%	3,209	80.1%	4.6%
		Public	864	22.7%	849	22.3%	799	19.9%	-3.8%
Pine Rivers Total			3,798	14.2%	3,810	12.8%	4,008	13.0%	2.7%
Redcliffe - North Lakes	Redcliffe	Private	1,754	57.2%	2,044	57.2%	2,275	62.3%	13.9%
		Public	1,315	42.8%	1,529	42.8%	1,376	37.7%	2.3%
Redcliffe - North Lakes Total			3,069	11.5%	3,573	12.0%	3,651	11.9%	9.1%
Moreton Bay - North	Caboolture	Private	1,655	58.6%	1,763	57.1%	1,791	57.9%	4.0%
		Public	1,169	41.4%	1,323	42.9%	1,303	42.1%	5.6%
Moreton Bay - North Total			2,824	10.6%	3,086	10.3%	3,094	10.1%	4.7%
Region Total			26,655	100%	29,856	100%	30,760	100%	7.4%

Source: Queensland Health Admitted Patient Data Collection (QHAPDC)

Alcohol and other drug (AOD) hospitalisations

'Alcohol and other drug'[175] hospitalisations for residents of the region have increased 3.6 per cent per annum since 2015-16. In 2017-18, there were 3952 admitted AOD hospitalisations at either a public or private hospital for residents within the region. Of these, 'Alcohol Use and Dependence' reported the highest number of hospital separations for residents while 'Opioid Use and Dependence' reported the highest growth rate, increasing 16.6 per cent per annum from 153 separations in 2015-16 to 208 separations in 2017-18. This was followed by other 'Drug Intoxication and Withdrawal', which increased 8.3 per cent per annum from 167 separations in 2015-16 to 196 separations in 2017-18.

Table 11: Alcohol and other drug (AOD) – hospital separations, public and private hospitals, all region residents, 2015-16 to 2017-18[176]

	2015-16		2016-17		2017-18		
Diagnostic Group	Separations	%	Separations	%	Separations	%	CAGR
Alcohol Use and Dependence	2,614	71.1%	2,242	68.6%	2,819	71.3%	3.8%
Alcohol Intoxication and Withdrawal	589	16.0%	524	16.0%	600	15.2%	0.9%
Opioid Use and Dependence	153	4.2%	165	5.0%	208	5.3%	16.6%
Drug Intoxication and Withdrawal	167	4.5%	159	4.9%	196	5.0%	8.3%
Other Drug Use and Dependence	156	4.2%	180	5.5%	129	3.3%	-9.1%
Region Total	3,679	100%	3,270	100%	3,952	100%	3.6%

Source: Queensland Health Admitted Patient Data Collection (QHAPDC)

Between 2015-16 and 2017-18, the Moreton Bay - North sub region had the greatest percentage increase in AOD hospitalisations increasing 23.2 per cent per annum followed by the Brisbane North sub region, increasing 19.3 per cent per annum.

Residents of the Brisbane West sub regions had the highest proportion of AOD hospitalisations in private hospitals while Redcliffe - North Lakes and Moreton Bay – North sub regions had the highest proportion of AOD hospitalisations in public hospitals.

[175] Excludes Poisoning/Toxic Effects of Drugs and Other Substances
[176] Excludes Poisoning/Toxic Effects of Drugs and Other Substances

Table 12: Alcohol and other drug (AOD) – hospital separations, by sub region, catchment and hospital type, 2015-16 to 2017-18

Sub region	Hospital Catchment	Hospital Type	2015-16 Separations	2015-16 %	2016-17 Separations	2016-17 %	2017-18 Separations	2017-18 %	CAGR
Brisbane Inner City	RBWH	Private	689	72.9 %	568	66.9%	602	67.1%	-6.5%
		Public	256	27.1 %	281	33.1%	295	32.9%	7.3%
Brisbane Inner City Total			945	25.7 %	849	26.0%	897	22.7%	-2.6%
Brisbane West	RBWH	Private	838	83.2 %	635	82.6%	841	86.7%	0.2%
		Public	169	16.8 %	134	17.4%	129	13.3%	-12.6%
Brisbane West Total			1,007	27.4 %	769	23.5%	970	24.5%	-1.9%
Brisbane North	TPCH	Private	424	67.3 %	381	65.5%	622	69.4%	21.1%
		Public	206	32.7 %	201	34.5%	274	30.6%	15.3%
Brisbane North Total			630	17.1 %	582	17.8%	896	22.7%	19.3%
Pine Rivers	TPCH	Private	333	80.2 %	320	81.0%	284	78.0%	-7.6%
		Public	82	19.8 %	75	19.0%	80	22.0%	-1.2%
Pine Rivers Total			415	11.3 %	395	12.1%	364	9.2%	-6.3%
Redcliffe - North Lakes	Redcliffe	Private	183	46.6 %	164	43.0%	151	39.1%	-9.2%
		Public	210	53.4 %	217	57.0%	235	60.9%	5.8%
Redcliffe - North Lakes Total			393	10.7 %	381	11.7%	386	9.8%	-0.9%
Moreton Bay - North	Caboolture	Private	126	43.6 %	143	48.6%	261	59.5%	43.9%
		Public	163	56.4 %	151	51.4%	178	40.5%	4.5%
Moreton Bay - North Total			289	7.9%	294	9.0%	439	11.1%	23.2%
Region Total			3,679	100%	3,270	100%	3,952	100%	3.6%

Source: Queensland Health Admitted Patient Data Collection (QHAPDC)

Table 13: Alcohol and other drug (AOD) – hospital separations, public and private hospitals, by sub region and diagnostic group, 2015-16 to 2017-18

		2015-16		2016-17		2017-18		
Sub region	Diagnostic Group	Number	%	Number	%	Number	%	CAGR
Brisbane Inner City	Alcohol Use and Dependence	691	73.1%	592	69.7%	643	71.7 %	-3.5%
	Alcohol Intoxication and Withdrawal	153	16.2%	129	15.2%	143	15.9 %	-3.3%
	Opioid Use and Dependence	33	3.5%	35	4.1%	51	5.7%	24.3 %
	Drug Intoxication and Withdrawal	34	3.6%	29	3.4%	37	4.1%	4.3%
	Other Drug Use and Dependence	34	3.6%	64	7.5%	23	2.6%	-17.8 %
Brisbane Inner City Total		**945**	**25.7%**	**849**	**26.0%**	**897**	**22.7 %**	**-2.6%**
Brisbane West	Alcohol Use and Dependence	856	85.0%	628	81.7%	844	87.0 %	-0.7%
	Alcohol Intoxication and Withdrawal	90	8.9%	70	9.1%	57	5.9%	-20.4 %
	Other Drug Use and Dependence	18	1.8%	39	5.1%	26	2.7%	20.2 %
	Opioid Use and Dependence	17	1.7%	20	2.6%	23	2.4%	16.3 %
	Drug Intoxication and Withdrawal	26	2.6%	12	1.6%	20	2.1%	-12.3 %
Brisbane West Total		**1,007**	**27.4%**	**769**	**23.5%**	**970**	**24.5 %**	**-1.9%**
Brisbane North	Alcohol Use and Dependence	446	70.8%	378	64.9%	615	68.6 %	17.4 %
	Alcohol Intoxication and Withdrawal	122	19.4%	113	19.4%	155	17.3 %	12.7 %
	Opioid Use and Dependence	5	0.8%	29	5.0%	59	6.6%	243%
	Drug Intoxication and Withdrawal	27	4.3%	31	5.3%	34	3.8%	12.2 %
	Other Drug Use and Dependence	30	4.8%	31	5.3%	33	3.7%	4.9%
Brisbane North Total		**630**	**17.1%**	**582**	**17.8%**	**896**	**22.7 %**	**19.3 %**
Pine Rivers	Alcohol Use and Dependence	313	75.4%	331	83.8%	286	78.6 %	-4.4%
	Alcohol Intoxication and Withdrawal	42	10.1%	30	7.6%	34	9.3%	-10.0 %
	Drug Intoxication and Withdrawal	11	2.7%	12	3.0%	20	5.5%	34.8 %
	Other Drug Use and Dependence	29	7.0%	10	2.5%	19	5.2%	-19.1 %
	Opioid Use and Dependence	20	4.8%	12	3.0%	5	1.4%	-50.0 %
Pine Rivers Total		**415**	**11.3%**	**395**	**12.1%**	**364**	**9.2%**	**-6.3%**
Redcliffe - North Lakes	Alcohol Use and Dependence	214	54.5%	200	52.5%	190	49.2 %	-5.8%
	Alcohol Intoxication and Withdrawal	94	23.9%	95	24.9%	113	29.3 %	9.6%
	Drug Intoxication and Withdrawal	44	11.2%	49	12.9%	49	12.7 %	5.5%

	Other Drug Use and Dependence	25	6.4%	22	5.8%	20	5.2%	-10.6%
	Opioid Use and Dependence	16	4.1%	15	3.9%	14	3.6%	-6.5%
Redcliffe - North Lakes Total		393	10.7%	381	11.7%	386	9.8%	-0.9%
Moreton Bay – North	Alcohol Use and Dependence	94	32.5%	113	38.4%	241	54.9%	60.1%
	Alcohol Intoxication and Withdrawal	88	30.4%	87	29.6%	98	22.3%	5.5%
	Opioid Use and Dependence	62	21.5%	54	18.4%	56	12.8%	-5.0%
	Drug Intoxication and Withdrawal	25	8.7%	26	8.8%	36	8.2%	20.0%
	Other Drug Use and Dependence	20	6.9%	14	4.8%	8	1.8%	-36.8%
Moreton Bay - North Total		289	7.9%	294	9.0%	439	11.1%	23.2%
Grand Total		3,679	100%	3,270	100%	3,952	100%	3.6%

Source: Queensland Health Admitted Patient Data Collection (QHAPDC)

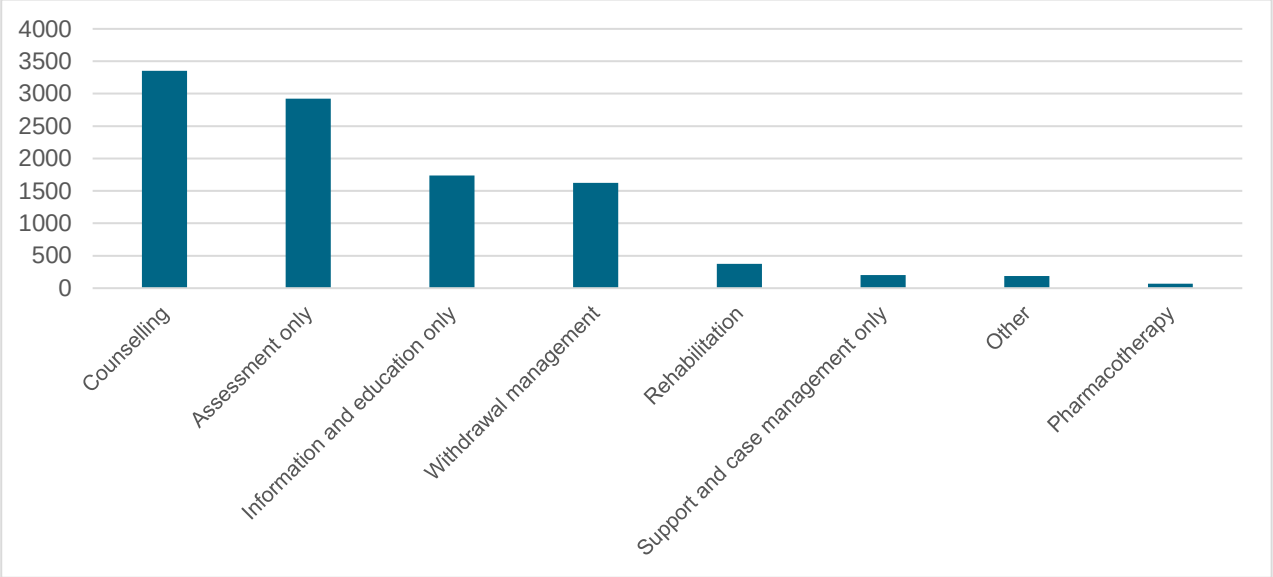
Alcohol and other drug treatment services

Alcohol and other drug treatment consists of a range of services and supports to people who use alcohol and other drugs, their families and friends[177]. Services can be delivered in both residential and community settings, consisting of treatment types such as counselling, pharmacotherapy, rehabilitation and detoxification[178]. The data in this section consists of alcohol and other drug treatment provided by publicly funded agencies in Australia who reported to the Alcohol and Other Drug Treatment Services National Minimum Dataset (AODTS-NMDS) in 2017-18.

In 2017-18, there were 10,479 closed alcohol and other drug treatment episodes in the region[179] [180]. Of these treatment episodes, 'counselling' was the most common treatment type, with 3354 episodes (32 per cent). This was followed by 'assessment only' (2924 episodes or 27.9 per cent) and 'information and education only' (1739 episodes or 16.6 per cent)[181]. Closed treatment episodes by treatment type are shown in Figure 97.

[177] (Australian Institute of Health and Welfare, 2019)
[178] (Australian Institute of Health and Welfare, 2019)
[179] (Australian Institute of Health and Welfare, 2019)
[180] This figure refers to episodes associated with people who reside in the region. Treatment may have bene provided elsewhere.
[181] (Australian Institute of Health and Welfare, 2019)

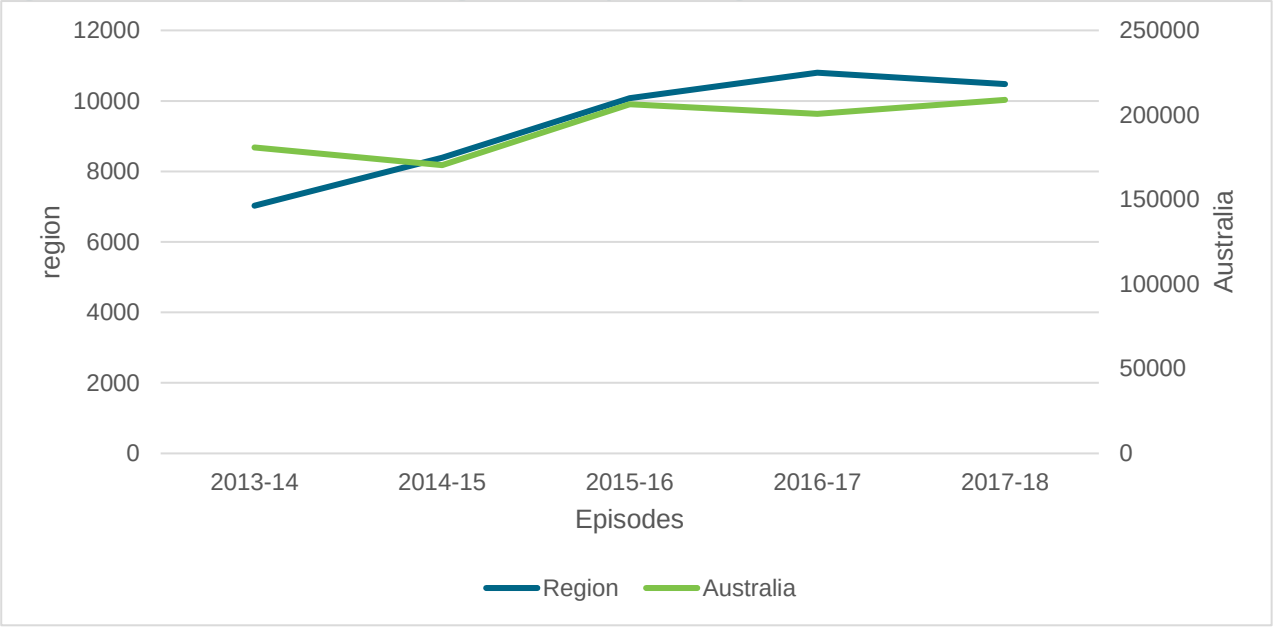
Figure 97: Closed alcohol and other drug treatment episodes by treatment type, region, 2017-18



Source: (Australian Institute of Health and Welfare, 2019)

Between 2013-14 and 2017-18, the number of closed alcohol and other drug treatment episodes in the region increased by 49.1 per cent[182]. This was much higher than the national increase of 15.6 per cent during the same time period. On average, the annual increase of closed treatment episodes was 8.3 per cent in the region, compared to 2.9 per cent nationally. These trends are shown in Figure 98below.

Figure 98: Closed alcohol and other drug treatment episodes, region and Australia, 2013-14 to 2017-18



Source: (Australian Institute of Health and Welfare, 2019)

Principal drug of concern

Of the population in the region who received treatment for their own drug use in 2017-18, alcohol was the most common principal drug of concern (3844 episodes or 37.3 per cent), followed by cannabis (2687 episodes or 26.1 per cent) and amphetamines (2027 episodes or 19.7 per cent).

Between 2013-14 and 2017-18, there were observed increases in the number of people seeking treatment for cocaine, amphetamines, MDMA and alcohol. There was also a large increase in the number of people seeking treatment for substances that were not defined. This is shown in table xx below.

[182] (Australian Institute of Health and Welfare, 2019)

Table 14: Closed alcohol and other drug treatment episodes by principal drug of concern, 2013-14 to 2017-18

Principal drug of concern	2013-14	2014-15	2015-16	2016-17	2017-18	CAGR
Codeine	96	65	60	66	85	-2.4%
Morphine	88	97	89	88	50	-10.7%
Buprenorphine	121	114	98	133	112	-1.5%
Heroin	284	210	187	249	216	-5.3%
Methadone	72	73	58	73	82	2.6%
Oxycodone	112	127	125	116	148	5.7%
Other opioids	41	55	38	34	51	4.5%
Other analgesics	24	18	31	19	23	-0.8%
Alcohol	2508	2875	2823	3826	3844	8.9%
Benzodiazepines	168	185	161	194	184	1.8%
Other sedatives and hypnotics	3	5	2	2	4	5.9%
Amphetamines	820	1179	1443	2037	2027	19.8%
Ecstasy (MDMA)	82	117	176	191	162	14.6%
Cocaine	13	28	21	41	64	37.5%
Nicotine	278	363	1051	384	412	8.2%
Other stimulants and hallucinogens	49	73	71	32	19	-17.3%
Volatile solvents	10	11	18	16	11	1.9%
Cannabis	2074	2431	3182	2914	2687	5.3%
Other	16	194	243	198	103	45.1%
Not stated	6	30	18	6	19	25.9%
Total	6864	8249	9895	10618	10302	8.5%

Source: (Australian Institute of Health and Welfare, 2019)

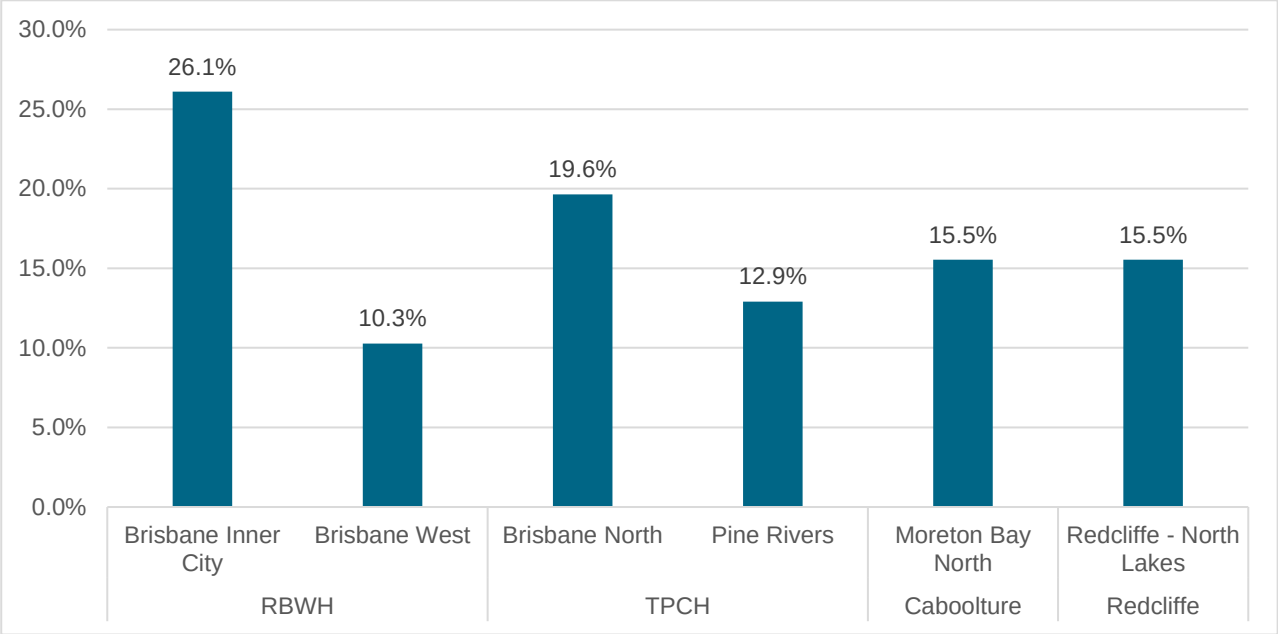
Health service use

Primary healthcare – general practice

General practices comprise the bulk of primary healthcare services within the region and play an important role in the overall health system. General practitioners provide care for short-term illnesses, chronic disease, mental health and preventative health as well as coordinating patient care. As at April 2019, there were 341 general practices in the region[183]. While general practice locations are similarly distributed to the population, they are not distributed according to need. Over one quarter of general practices (26.1 per cent or 89 practices) are located in the Brisbane Inner City sub region, followed by the Brisbane North sub region, with 19.6 per cent (67 practices). This is highlighted in Figure 99.

General practices in the northern areas of the region are smaller and tightly clustered. The disparity in practice locations and expressed needs will be explored throughout the chapter.

Figure 99: Number of general practices by sub region and hospital catchment, 2019



Source: (Brisbane North PHN, 2019)

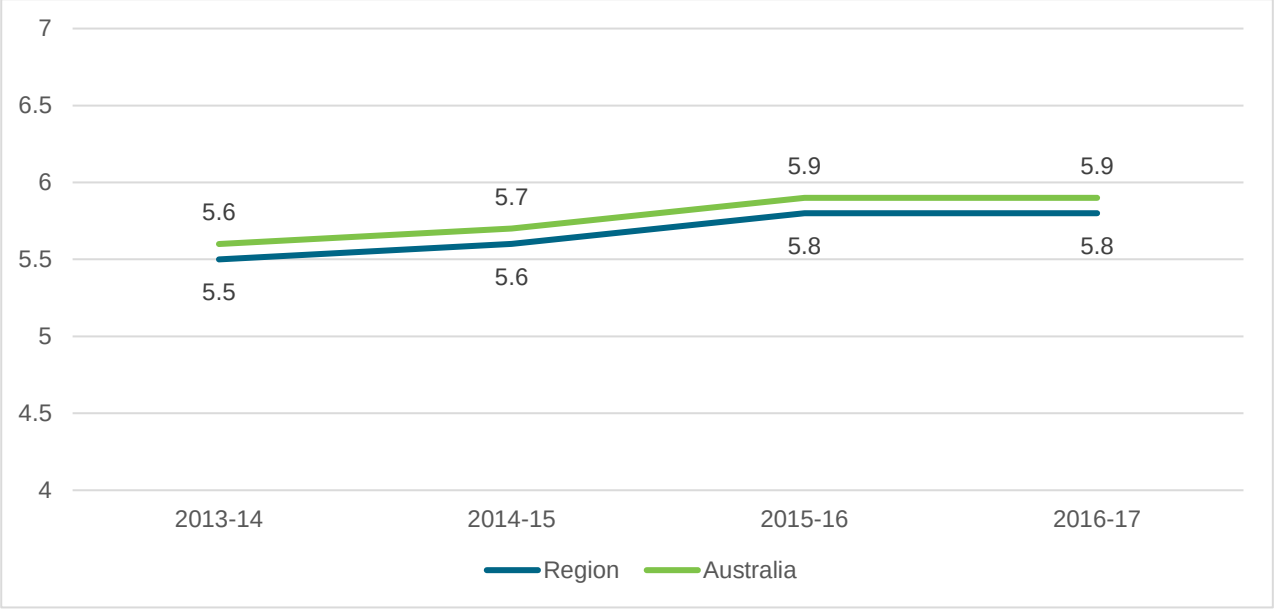
General practice service use and access trends

Analysis of GP access trends provides insight into the health of a population, and is an important service indicator. Low rates of GP attendances coupled with high disease burden may indicate failures within the health system. Similarly, high GP access rates may indicate a number of expressed needs among a population. Similarly, analysis of GP bulk billing may identify access issues and potential barriers, particularly in areas of socioeconomic deprivation.

In the region during 2016-17, the average person visited the GP almost six times (5.8 attendances)[184][185]. This was consistent with the national average of 5.9 GP attendances per person. Between 2013-14 and 2016-17, the average number of GP attendances per person in the region increased by 0.3 attendances per person. This was consistent with national data and can be seen in Figure 100.

[183] (Brisbane North PHN, 2019)
[184] Age standardised rate
[185] (Australian Institute of Health and Welfare, 2018)

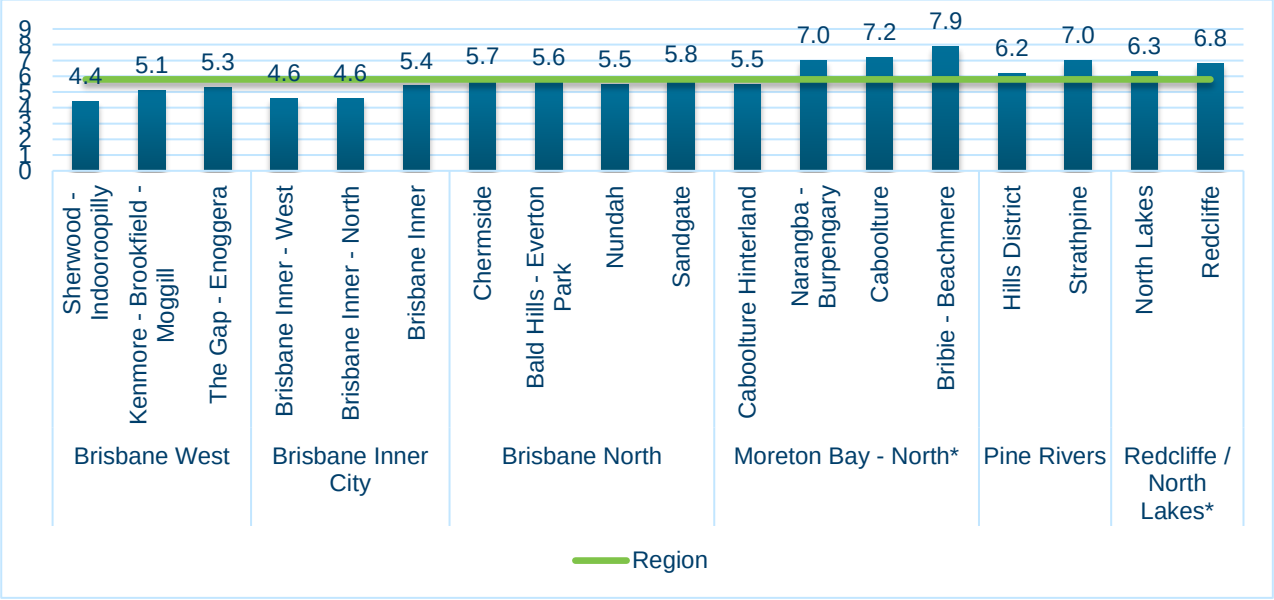
Figure 100: Average number of GP attendances per person, region and Australia, 2013-14 to 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

Within the region, the average number of GP attendances per person varied from 4.4 attendances in Sherwood – Indooroopilly SA3 to 7.9 attendances in the Bribie – Beachmere SA3, a variation of over three GP attendances per person[186]. The average number of GP attendances per person for each SA3 within the region can be seen in Figure 101.

Figure 101: Average number of GP attendances per person, age standardised by statistical area level three and sub region, 2016-17

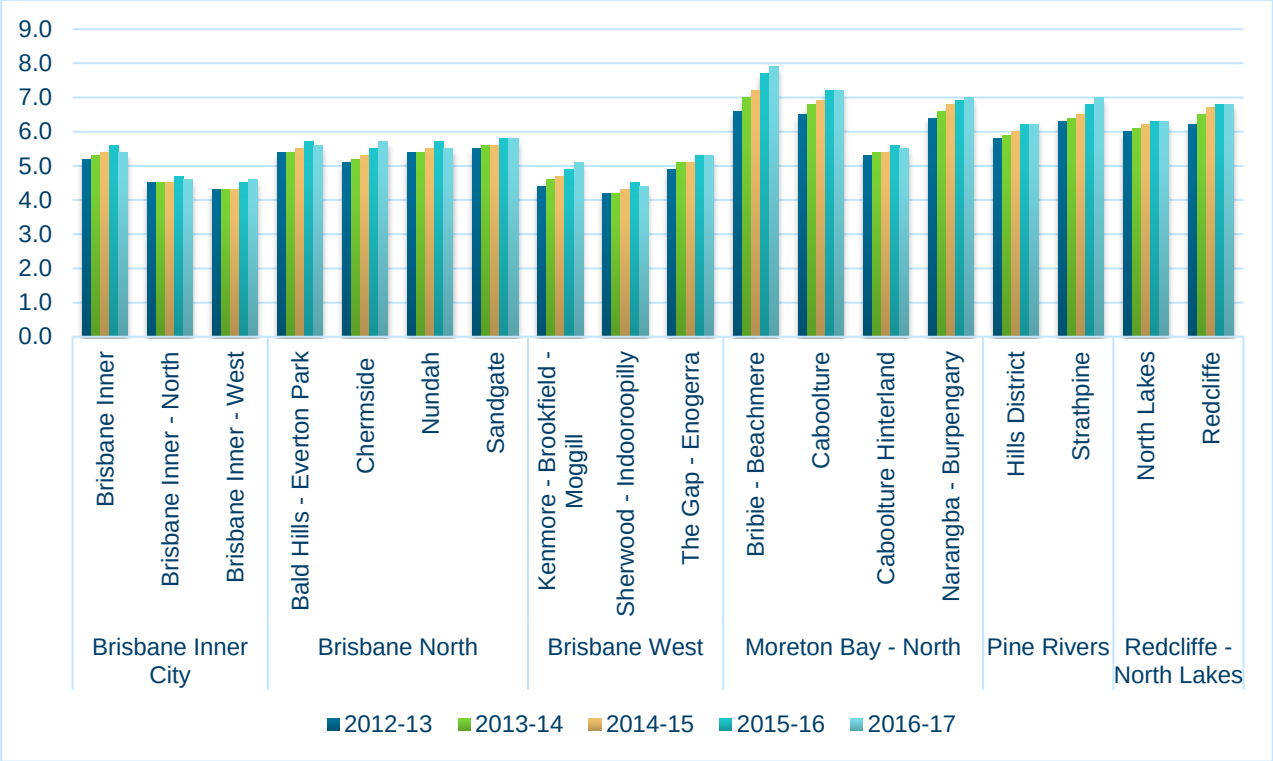


Source: (Australian Institute of Health and Welfare, 2018)

While increases in the average number of GP attendances per person in the whole region were consistent with the national average, there was a significant increase in the Bribie – Beachmere SA3 (6.6 to 7.9)[187]. There are also emerging trends in the Caboolture, Redcliffe, Strathpine and Narangba – Burpengary SA3s, as highlighted in Figure 102.

[186] (Australian Institute of Health and Welfare, 2018)
[187] (Australian Institute of Health and Welfare, 2018)

Figure 102: Average number of GP attendances per person, age standardised by statistical area level three and sub region, 2012-13 to 2016-17

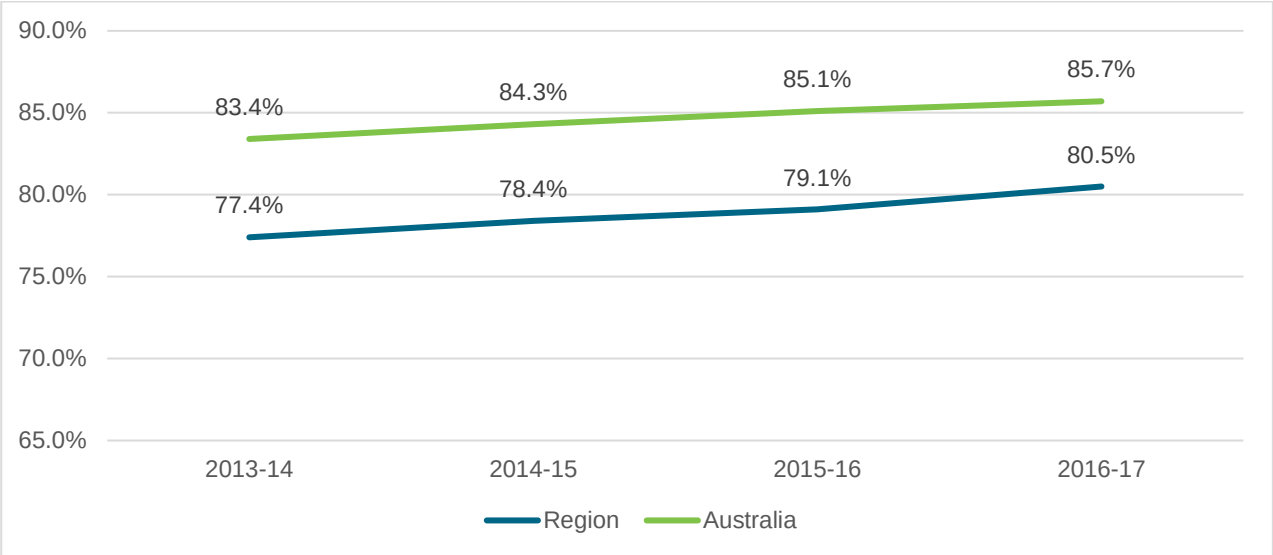


Source: (Australian Institute of Health and Welfare, 2018)

GP bulk billing

In 2016-17, 80.5 per cent of GP attendances in the region were bulk billed, on average. This is less than the national average of 85.7 per cent[188]. Between 2013-14 and 2016-17, the percentage of GP attendances in the region that were bulk billed increased by 3.1 per cent, compared to an increase of 2.3 per cent nationally. This is shown in Figure 103.

Figure 103: Percentage of GP attendances that were bulk billed, region and Australia, 2013-14 to 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

[188] (Australian Institute of Health and Welfare, 2018)

Bulk billing rates varied considerably within the region in 2016-17, ranging from 61.3 per cent in the Brisbane Inner – West SA3 to 94.8 per cent in the Bribie – Beachmere SA3. This represents a variation of 33.5 per cent[189]. Areas in the region with higher bulk billing rates are associated with higher than average GP attendances per person, and poorer social determinants. Bulk billing rates for SA3s within the region are highlighted in Figure 104.

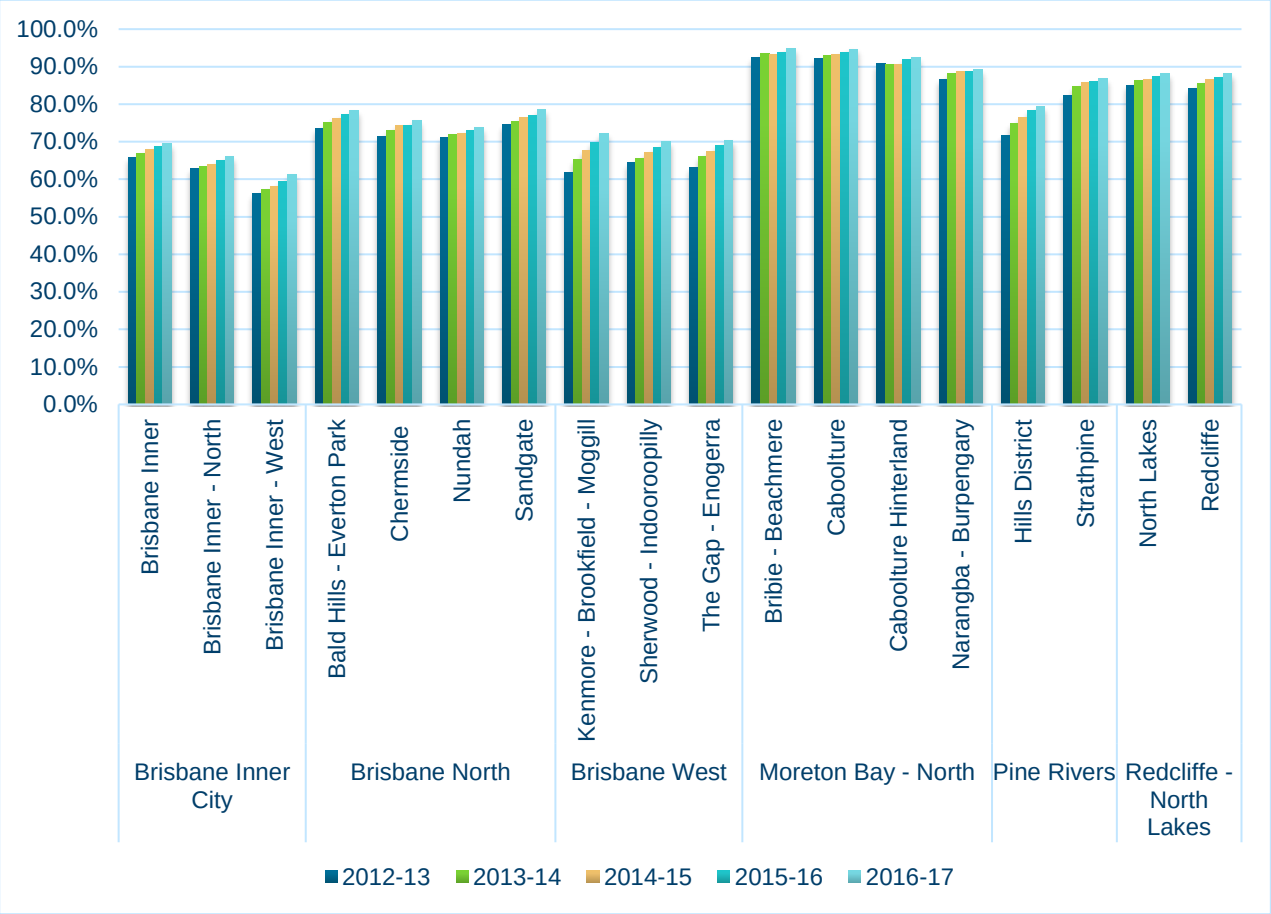
Figure 104: Percentage of GP attendances that were bulk billed by statistical area level three and sub region, 2016-17

Source: (Australian Institute of Health and Welfare, 2018)

Within the region, bulk billing rates varied considerably between 2012-13 and 2016-17. Increases in the percentage of GP attendances that were bulk billed ranged from a 1.6 per cent increase in the Caboolture Hinterland SA3 to 10.3 per cent in the Kenmore – Brookfield – Moggill SA3. There were also high increases in the Hills District (7.7 per cent) and The Gap – Enoggera (7.1 per cent) SA3s. Trends in the percentage of GP attendances that were bulk billed are shown in Figure 105.

[189] (Australian Institute of Health and Welfare, 2018)

Figure 105: Percentage of GP attendances that were bulk billed by statistical area level three and sub region, 2012-13 to 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

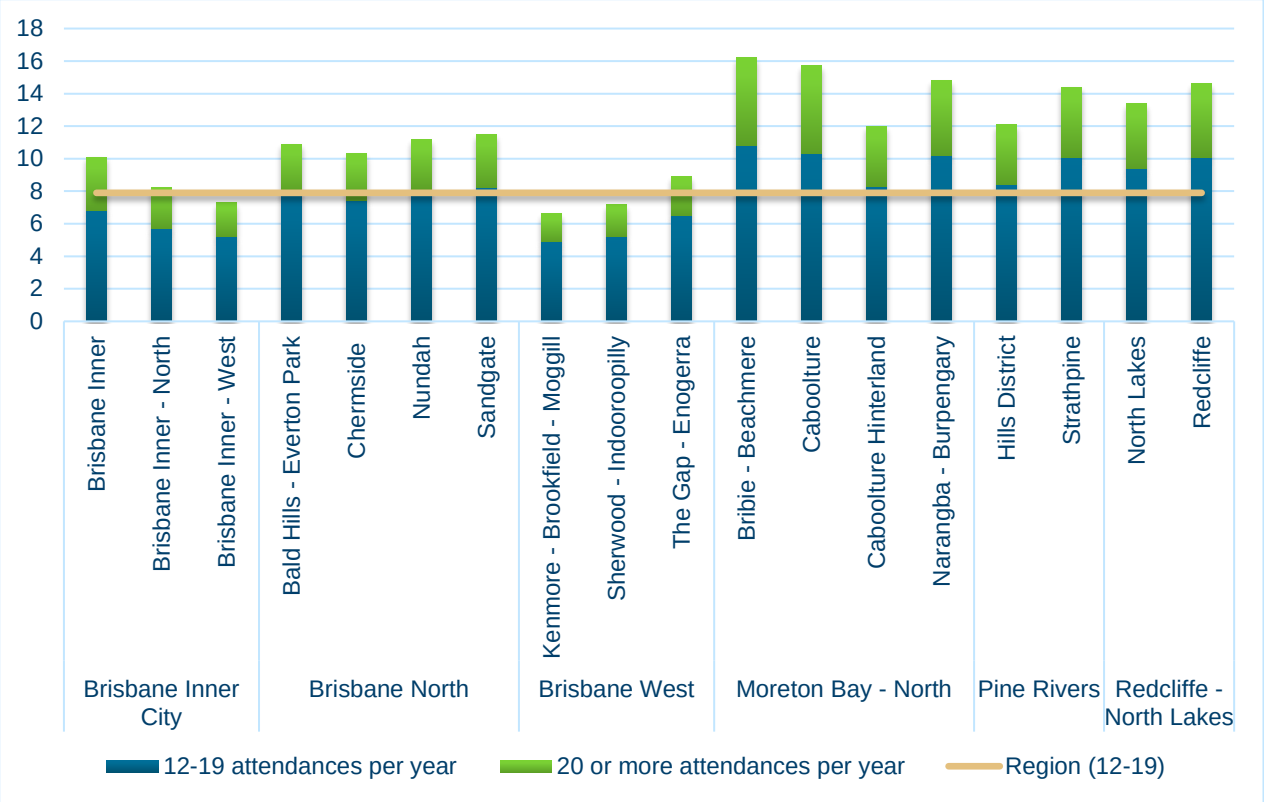
Frequent GP attenders

People are considered very high GP attenders if during one year they visited a GP 20 or more times. Frequent GP attenders are people who visited a GP 12 – 19 times per year[190]. Nationally, very high and frequent GP attenders accounted for 41 per cent of all non-hospital Medicare expenditure during 2012 – 2013[191].

In the region, nearly eight per cent of the population attended the GP between 12 to 19 times during the 2012-13 financial year. This is consistent with national averages. Just over three per cent of the population in the region attended the GP 20 or more times during the 2012-13 financial year[192]. Higher GP attendances are associated with higher levels of social deprivation within the region, and indicate areas of higher need. This is highlighted in Figure 106.

[190] (National Health Performance Authority, 2015)
[191] (National Health Performance Authority, 2015)
[192] (National Health Performance Authority, 2015)

Figure 106: Frequent and very high GP attenders by statistical area level three and sub region, 2012-13



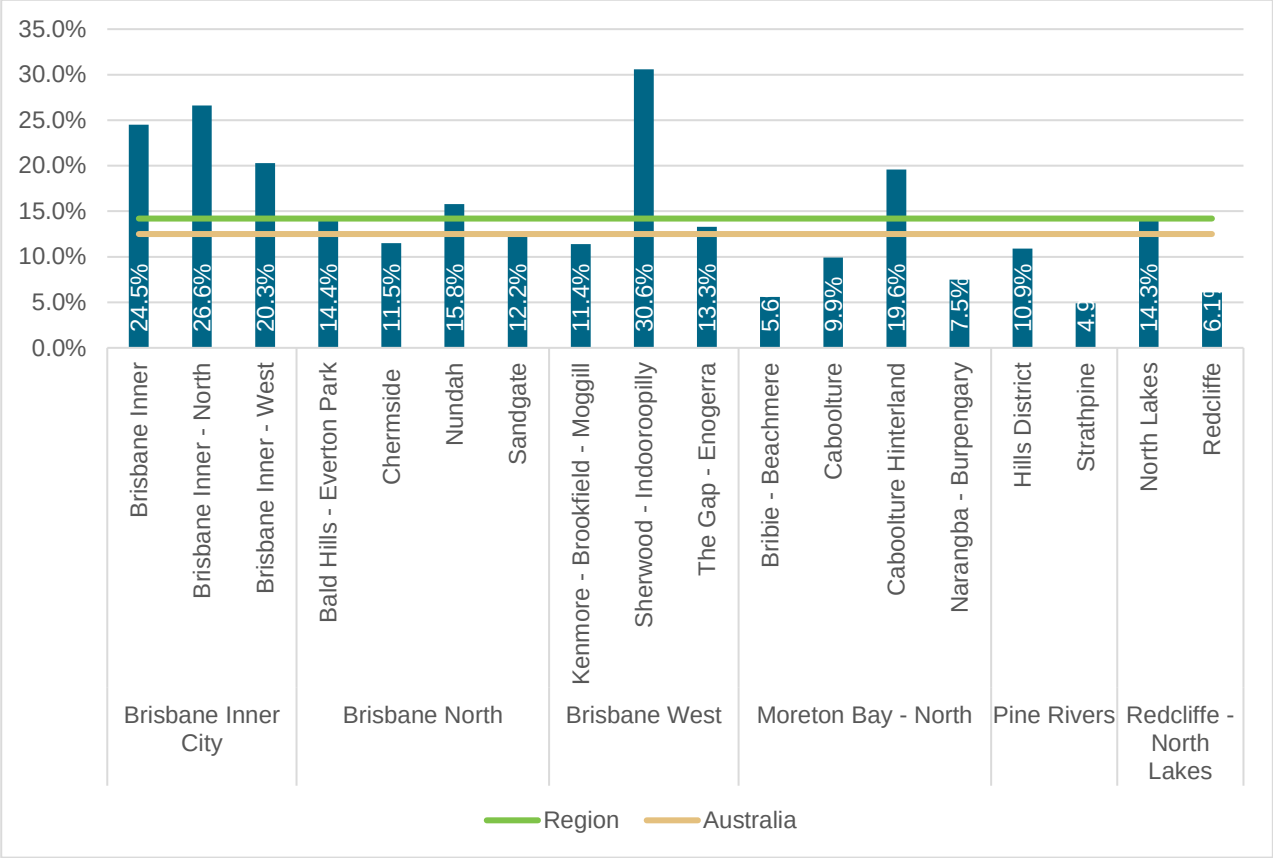
Source: (Australian Institute of Health and Welfare, 2015)

Percentage of the population that did not see a GP

In 2016-17, an estimated one in seven people (14.2 per cent) in the region did not see a GP[193]. Nationally, one in eight people (12.5 per cent) did not see a GP in 2016-17[194]. Within the region, the percentage of the population that did not see a GP in 2016-17 ranged from 4.9 per cent in the Strathpine SA3 to 30.6 per cent of the population residing in the Sherwood – Indooroopilly SA3. This is highlighted in Figure 107.

[193] (Australian Institute of Health and Welfare, 2018)
[194] (Australian Institute of Health and Welfare, 2018)

Figure 107: Percentage of the population that did not see a GP by statistical area level three and sub region, 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

Non- hospital specialists

Average number of specialist attendances[195]

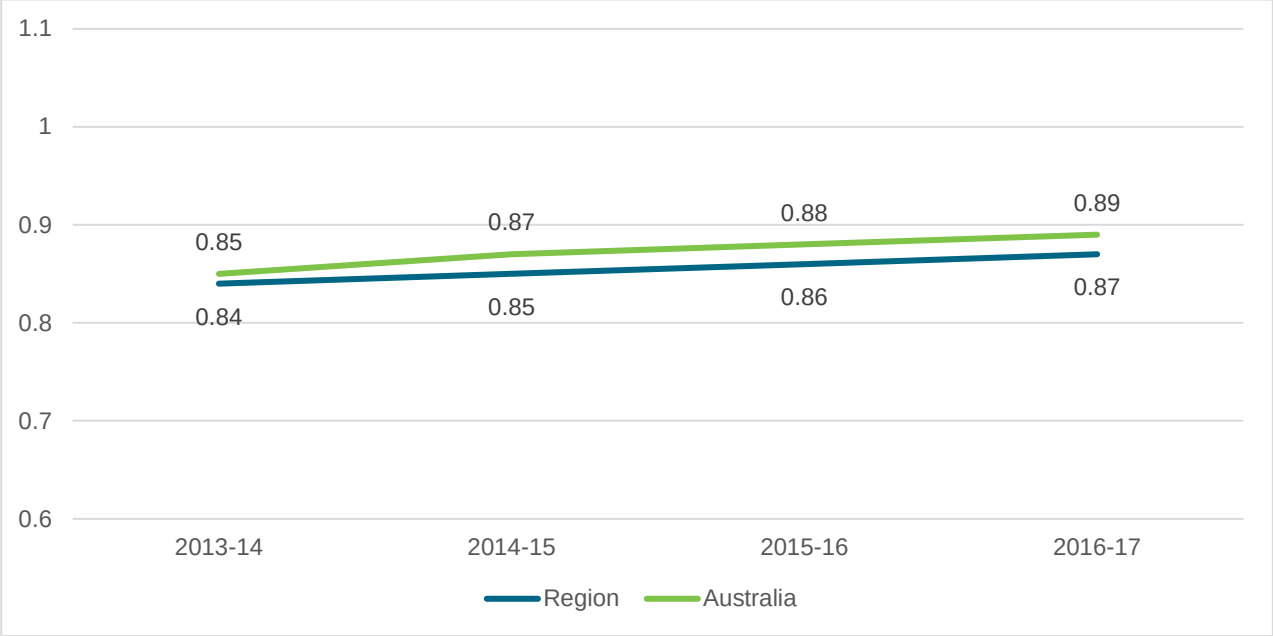
In 2016-17, on average there was almost one specialist attendance per person[196] in the region (0.87 per person). This is consistent with the national average of 0.89 specialist attendances per person[197]. Between 2013-14 and 2016-17, the average number of specialist attendances per person in the region increased steadily. This increase was coupled with an increase in the average Medicare benefits expenditure (per person) on specialist attendances during the same time period ($72.29 to $75.59). This increase was consistent with increases in the average number of specialist attendances per person nationally. The trends for specialist attendances are shown in Figure 108 below.

[195] Specialist attendances are Medicare benefits-funded referred patient/doctor encounters, such as visits, consultations, and attendances by video conference, involving medical practitioners who have been recognised as specialists or consultant physicians for Medicare benefits purposes. Specialist attendances include: consultant physician attendances; consultant psychiatrist attendances; other specialist attendances; specialist case conferences; and all anaesthesia consultations, whether provided by general practitioners or specialists. Specialist attendances do not count attendances in a hospital setting.

[196] Age standardised rate

[197] (Australian Institute of Health and Welfare, 2018)

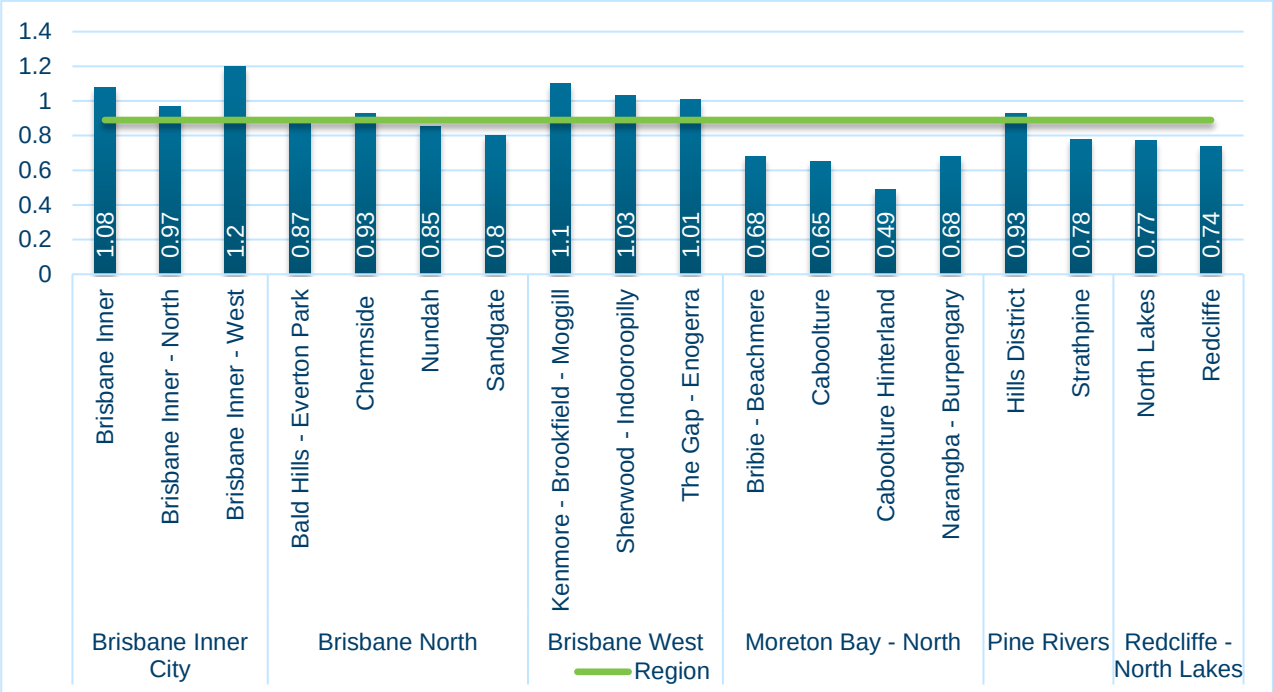
Figure 108: Average number of specialist attendances per person, Region and Australia, 2013-14 to 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

Within the region, higher rates of specialist attendances are associated with areas of higher socioeconomic status. A person living in the Brisbane Inner – West is over two times as likely to visit a specialist compared to a person residing in the Caboolture Hinterland area (1.2 attendances per person and 0.5 attendances per person respectively)[198]. This is highlighted in Figure 109.

Figure 109: Average number of specialist attendances per person by statistical area level three and sub region, 2016-17



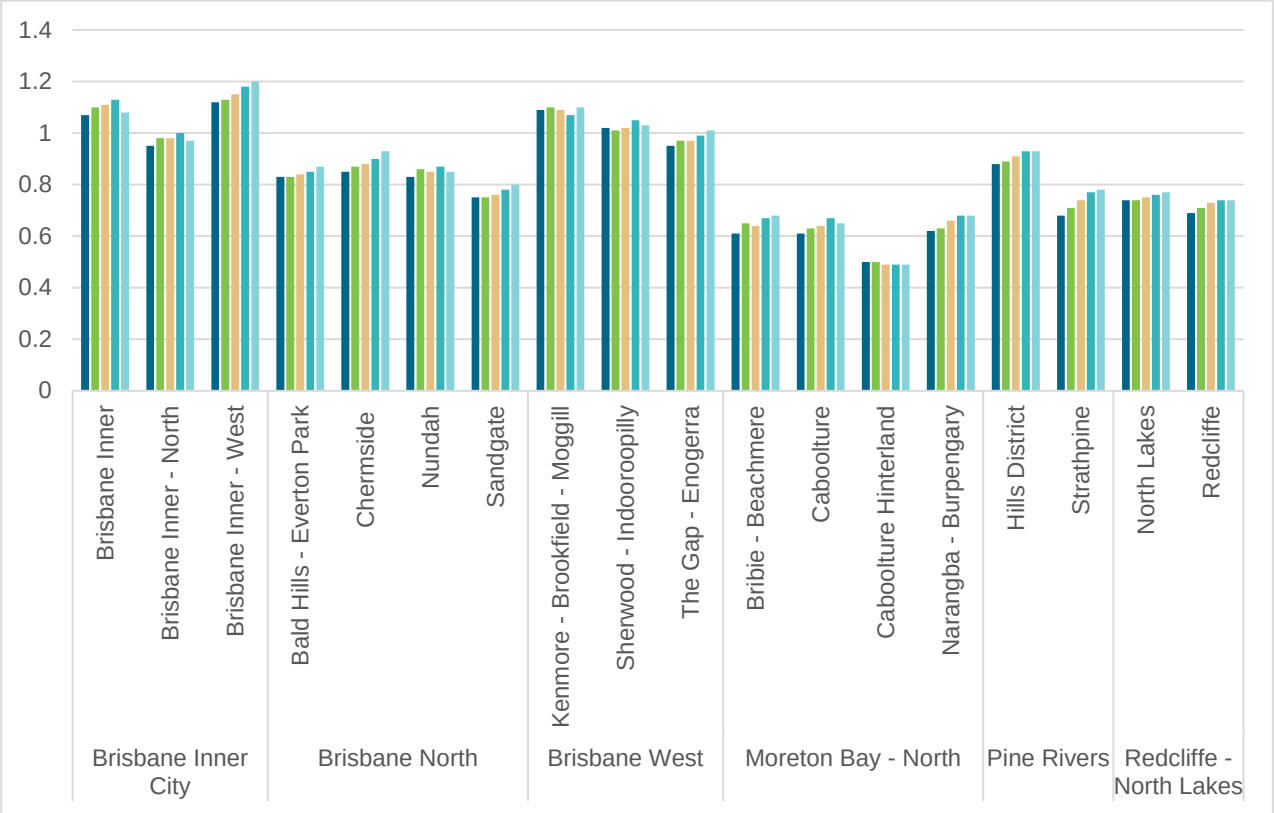
Source: (Australian Institute of Health and Welfare, 2018)

Between 2012-13 and 2016-17, trends in the average number of specialist attendances per person varied within the region. A consistent increase in the average number of specialist attendances per person was observed in the Brisbane Inner – West, Chermside, Hills District and Strathpine SA3s. There were

[198] (Australian Institute of Health and Welfare, 2018)

fluctuations observed in the Brisbane Inner, Brisbane Inner – North and Nundah SA3s, and an observed decrease in the Caboolture Hinterland SA3. Trends in the average number of specialist attendances per person between 2012-13 and 2016-17 are shown in Figure 110.

Figure 110: Average number of specialist attendances per person by statistical area level three and sub region, 2012-13 to 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

The higher rate of specialist attendances in the Brisbane Inner and Inner – West SA3s may be linked to a range of factors, including cost and availability. According to the Australian Institute of Health and Welfare (2015), there was a large variation in specialist workforce within the region. In 2014, almost one third of the total workforce in the region was located within the Brisbane Inner, Brisbane Inner – West and Brisbane Inner – North SA3s. The lack of specialists in higher needs areas may indicate a significant service gap in the region.

Aboriginal and Torres Strait Islander primary health access

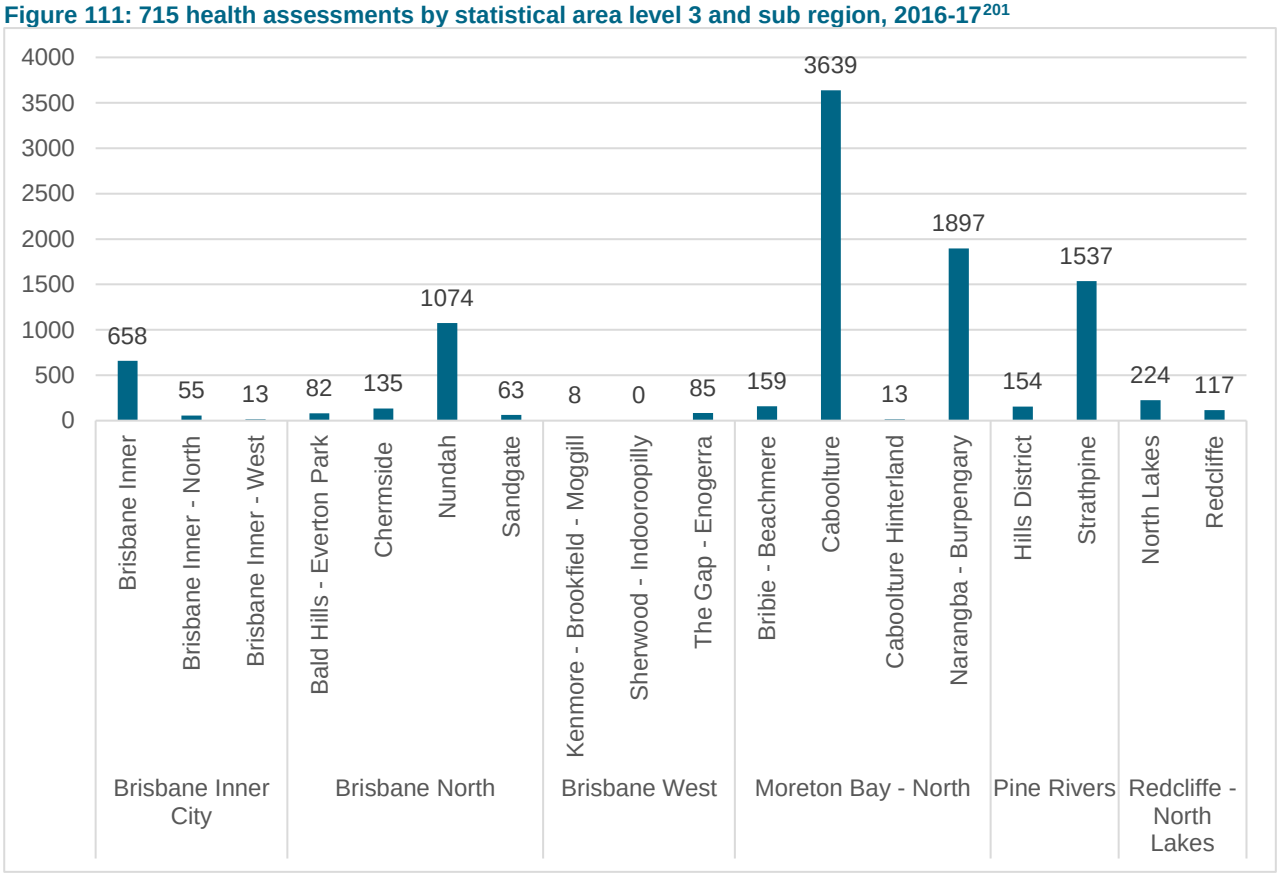
Aboriginal and Torres Strait Islander people typically die at much younger ages than other Australians and are more likely to experience disability and reduced quality of life because of ill health. One important contributor to health and wellbeing is access to culturally appropriate health services[199]. An effective way to measure the health of Aboriginal and Torres Strait Islander people is to conduct an Aboriginal and Torres Strait Islander health assessment.

Aboriginal and Torres Strait Islander health assessments (Item 715)

The aim of health assessment for Aboriginal and Torres Strait Islander people is to help ensure that Aboriginal and Torres Strait Islander people receive primary healthcare matched to their needs on an annual basis. This is achieved by encouraging early detection, diagnosis and intervention for common and treatable conditions that cause morbidity and early mortality.

In 2016-17, there were 9275 Aboriginal and Torres Strait Islander health assessments delivered in the region[200]. Within the region, 715 health assessments are more likely to be delivered in areas where the Aboriginal and Torres Strait Islander population is higher. This includes the Caboolture and Nundah SA3s and are associated with the location of the Aboriginal and Torres Strait Islander Community Controlled Health Service locations (Figure 111).

Figure 111: 715 health assessments by statistical area level 3 and sub region, 2016-17[201]

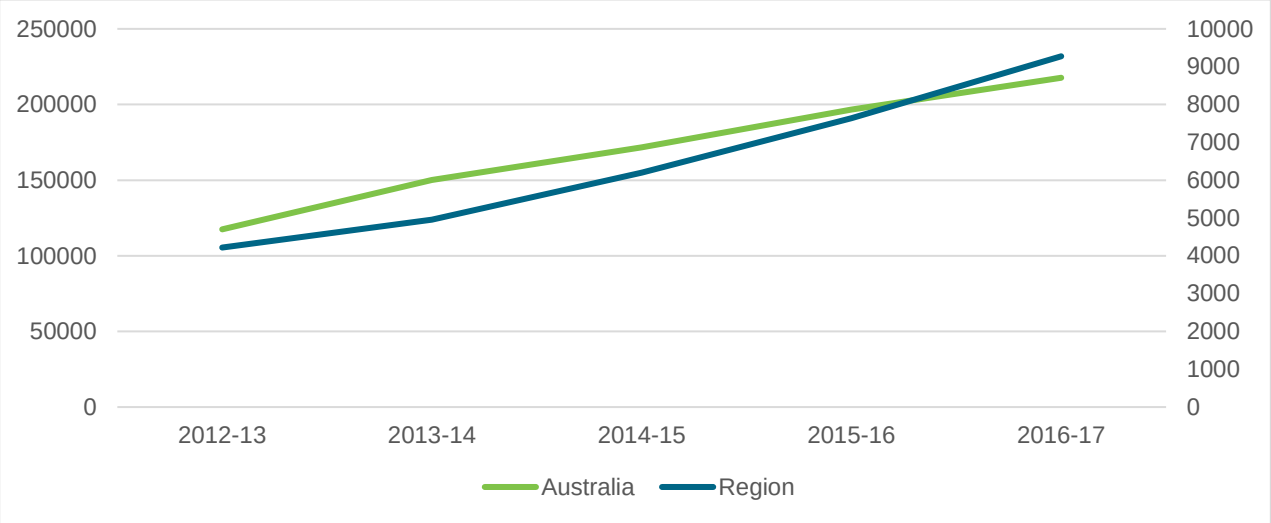


Source: (Commonwealth Department of Health, 2018)

Between 2012-13 and 2016-17 there was a 119.8 per cent increase in the number of Aboriginal and Torres Strait Islander health assessments delivered in the region. This is higher compared to the national increase of 85.3 per cent during the same time period. These trends are shown in Figure 112.

[199] Australian Institute of Health and Welfare, 2011a
[200] (Commonwealth Department of Health, 2018)
[201] Due to calculation methods, SA3 totals do not sum to Region total

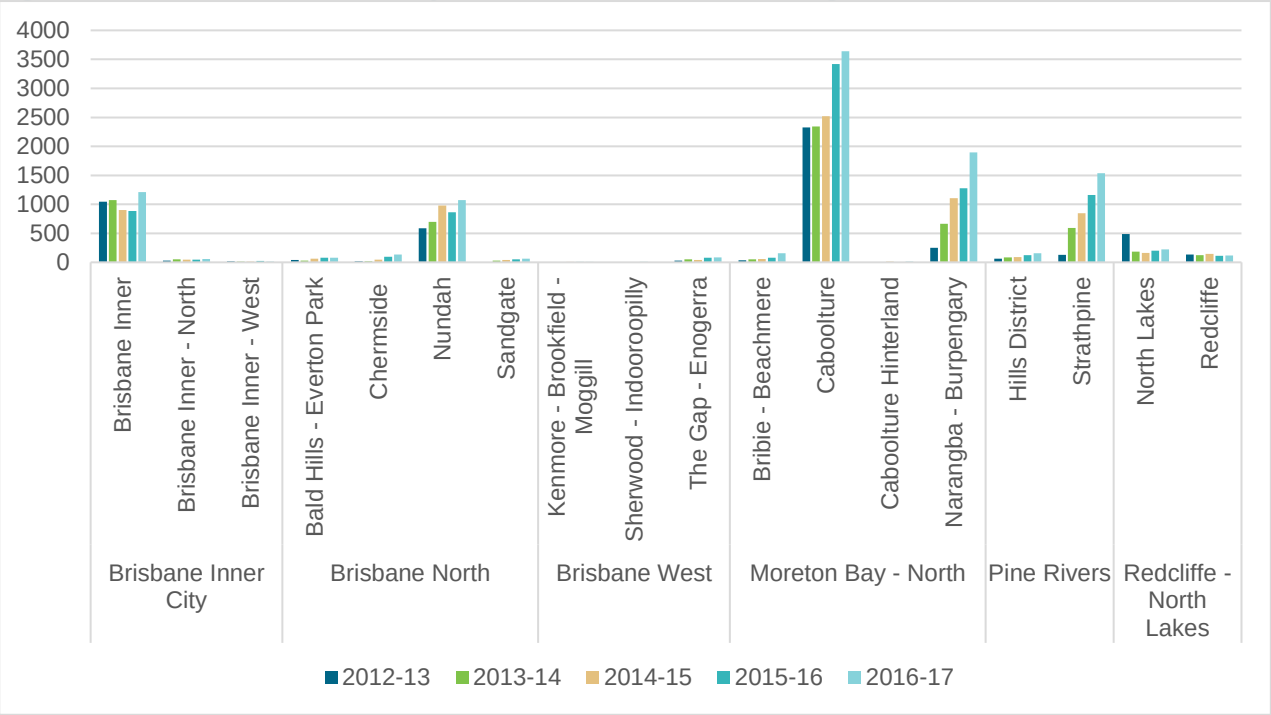
Figure 112: 715 health assessments, region and Australia, 2012-13 to 2016-17[202]



Source: (Commonwealth Department of Health, 2018)

Within the region, there were considerable increases in the number of 715 health assessments delivered in the Narangba - Burpengary and Strathpine SA3s. These increases may be attributable to the emphasis that the Department of Health has placed on 715 health checks, the ongoing *Deadly Choices* program and location of Aboriginal Medical Services in the region. These trends are shown in Figure 113.

Figure 113: 715 health assessments by statistical area level 3 and sub region, 2012-13 to 2016-17



Source: (Commonwealth Department of Health, 2018)

[202] Region is shown on the secondary axis.

After-hours service use and access

Average number of after-hours GP attendances per person

After-hour services refers to the provision of primary healthcare services where patients can access GPs, allied health and diagnostic services. After-hours is defined as:

- outside 8am to 6pm weekdays
- outside 8am to 12pm on Saturday
- all day on Sunday and public holidays.

The complete after-hours period is broken into:

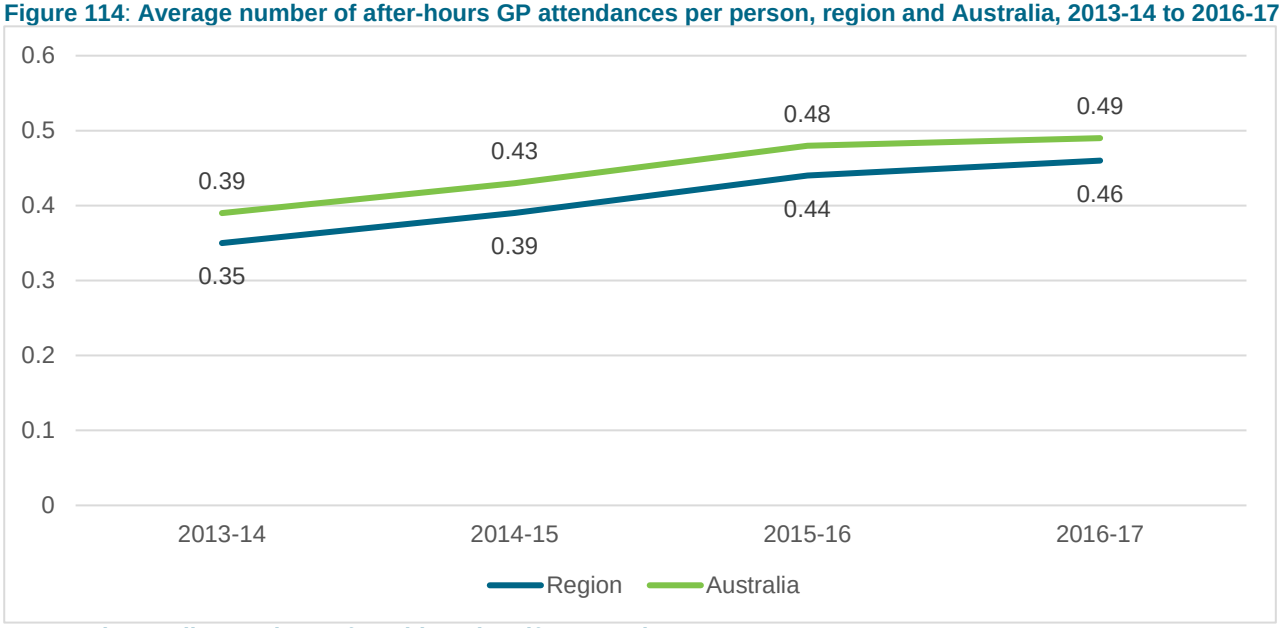
- sociable after-hours period: 6pm to 11pm weeknights
- unsociable after-hours period: 11pm to 8am weekdays, hours outside of 8am and 12pm Saturdays, and all day Sundays and public holidays.

Source: Commonwealth Department of Human Services, 2015

Some evidence links the availability of after-hour GP services to reduced rates of after-hours emergency department presentations in the same area. However, other factors contribute to emergency department presentations including patient perception of urgency or seriousness of the problem[203].

During 2016-17, there was an average of 0.46 after-hours GP attendances per person[204][205]. This indicates that people tend to not visit a GP after-hours and therefore may be presenting at other health service providers. This was slightly lower than the national figure of 0.49 after-hours GP attendances per person[206]. Between 2013-14 and 2016-17, the average number of after-hours GP attendances per person in the region increased by 0.11. This was similar to increases nationally and can be seen in Figure 114.

Figure 114: Average number of after-hours GP attendances per person, region and Australia, 2013-14 to 2016-17

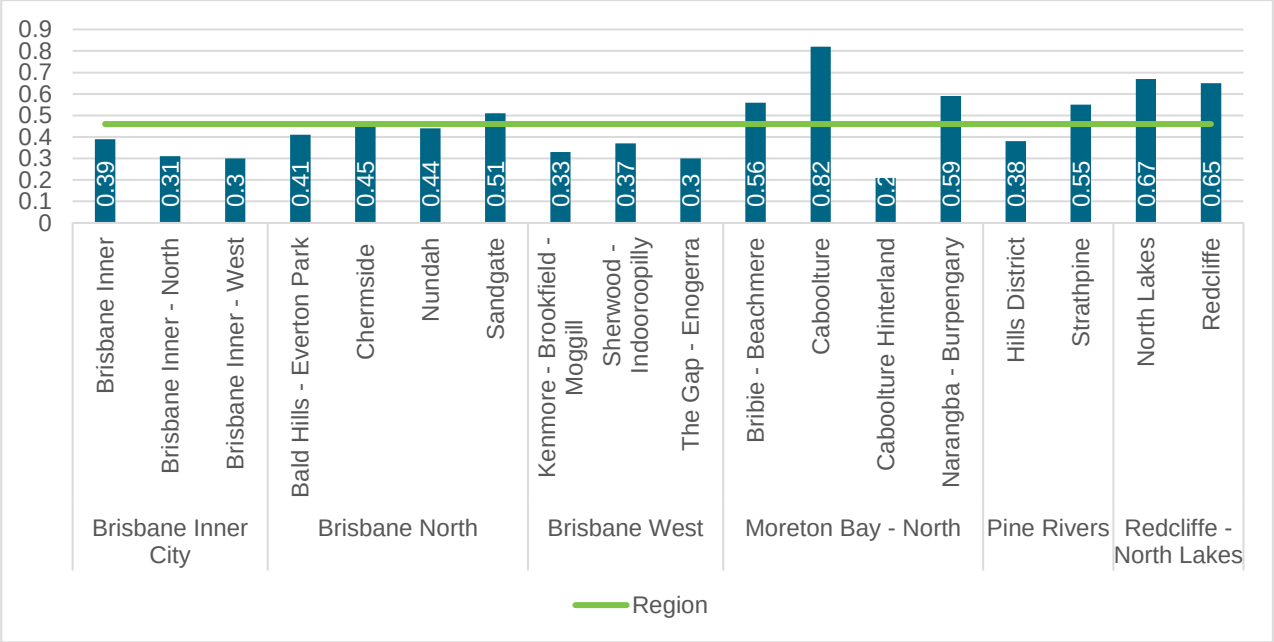


Source: (Australian Institute of Health and Welfare, 2018)

Within the region, the highest number of average after-hours GP attendances in 2016-17 occurred in the Caboolture and North Lakes SA3s, with 0.82 and 0.67 attendances respectively[207].

[203] (Australian Institute of Health and Welfare, 2014a)
[204] Age standardised rate
[205] (Australian Institute of Health and Welfare, 2018)
[206] (Australian Institute of Health and Welfare, 2018)
[207] (Australian Institute of Health and Welfare, 2018)

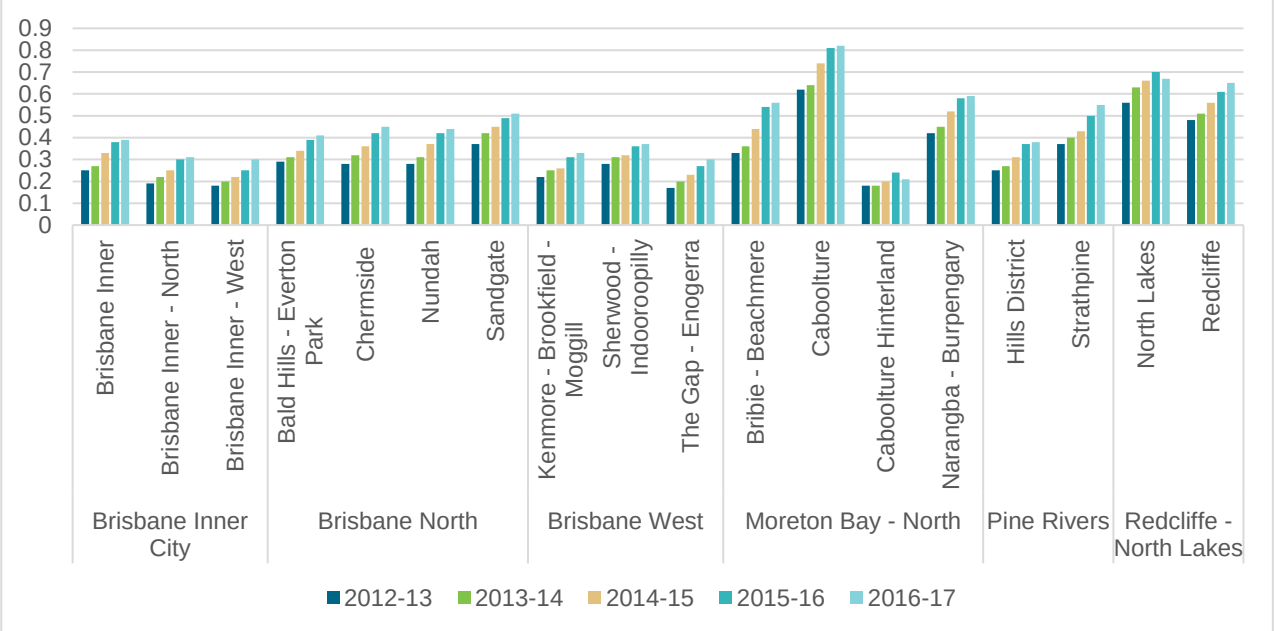
Figure 115: Average number of after-hours GP attendances by statistical area level three and sub region, 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

Between 2012-13 and 2016-17, there were observed increases in the average number of after-hours GP attendances per person in the Bribie – Beachmere, Caboolture, Strathpine and Chermside SA3s. Consistent increases were also observed in the Narangba – Burpengary and Sandgate SA3s. These trends can be seen in Figure 116.

Figure 116: Average number of after-hours GP attendances by statistical area level three and sub region, 2012-13 to 2016-17



Source: (Australian Institute of Health and Welfare, 2018)

Potentially preventable hospitalisations

Potentially preventable hospitalisations (PPH) are an admission to hospital for a condition where the hospitalisation could have potentially been prevented. This is through the provision of appropriate individualised preventative health interventions and early disease management, usually delivered in primary care and community-based care settings (including general practitioners, medical specialists, dentists, nurses and allied health professionals)[208].

There are three types of potentially preventable hospitalisations:

- acute: conditions for which hospitalisations should not be necessary if people receive timely and adequate access to primary healthcare
- chronic: conditions which may be managed in a primary healthcare setting to prevent the condition worsening and requiring hospitalisation
- vaccine preventable: conditions which are considered preventable rather than hospitalisation (e.g. influenza and other vaccine-preventable conditions).

Table 15: Selected potentially preventable hospitalisations, Australia, 2015 provides a full list of potentially preventable hospitalisations by type as per the National Healthcare Agreement.

Table 15: Selected potentially preventable hospitalisations, Australia, 2015

Vaccine Preventable	Acute	Chronic
• **Other vaccine preventable conditions** • **Pneumonia and influenza**	• Cellulitis • Convulsions and epilepsy • Dental conditions • Ear, nose and throat infections • Eclampsia • Gangrene • Pelvic inflammatory disease • Perforated/bleeding ulcer • Pneumonia (not vaccine preventable) • Urinary tract infections, including pyelonephritis	• Angina • Asthma • Bronchiectasis • COPD • Congestive cardiac failure • Diabetes complications • Hypertension • Iron deficiency anaemia • Nutritional deficiencies • Rheumatic heart disease

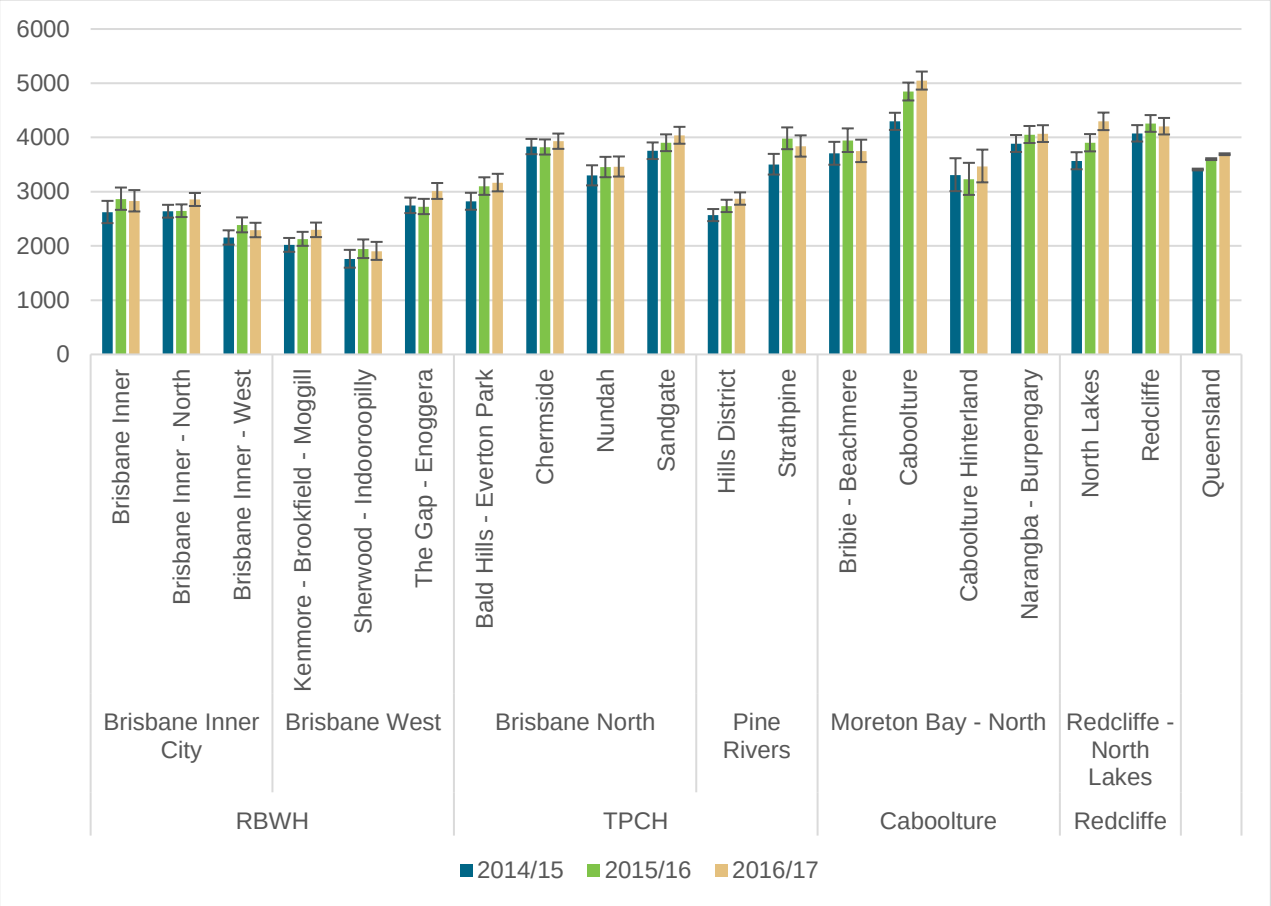
Source: Australian Institute of Health and Welfare, 2016

[208] Australian Institute of Health and Welfare 2015e

Total potentially preventable hospitalisations

There were 100,016 potentially preventable hospitalisations in the region from 2014-15 to 2016-17. In 2016-17 the age standardised rate of potentially preventable hospitalisations varied across the region from 1903.8 per 100,000 (CI 1743.1-2075 per 100,000) in Sherwood – Indooroopilly SA3 to 5047.3 per 100,000 (CI 4883.2-5215.5 per 100,000) in Caboolture SA3. This compared to an age standardised rate of 3691.5 per 100,000 (CI 3674.9-3708.1 per 100,000) for Queensland. The Caboolture SA3 had the highest age standardised rate of potentially preventable hospitalisations over the two years 2015-16 to 2016-17 as shown in Figure 117. High rates of potentially preventable hospitalisations generally occur in areas of higher social disadvantage and may indicate an unmet need or a health service gap.

Figure 117: Age standardised rates of potentially preventable hospitalisations by SA3, sub region and hospital catchment, 2014-15 to 2016-17.



Source: Queensland Hospital Admitted Patient Data Collection (QHAPDC), Department of Health, Queensland. Extracted on 15 January 2019 by Statistical Analysis and Linkage Unit, Statistical Services Branch

Aboriginal and Torres Strait Islander residents within the region experienced potentially preventable hospitalisations at double the rate of non-Indigenous residents (ASR 6598.3 per 100,000 (CI 6312.9-6891.6 per 100,000) compared to 3292.1 per 100,000 (3712.9-4199.4 per 100,000)).

For vaccine preventable conditions, the age standardised rate for Aboriginal and Torres Strait Islander residents was three times higher than non-Indigenous residents as shown in Table 16.

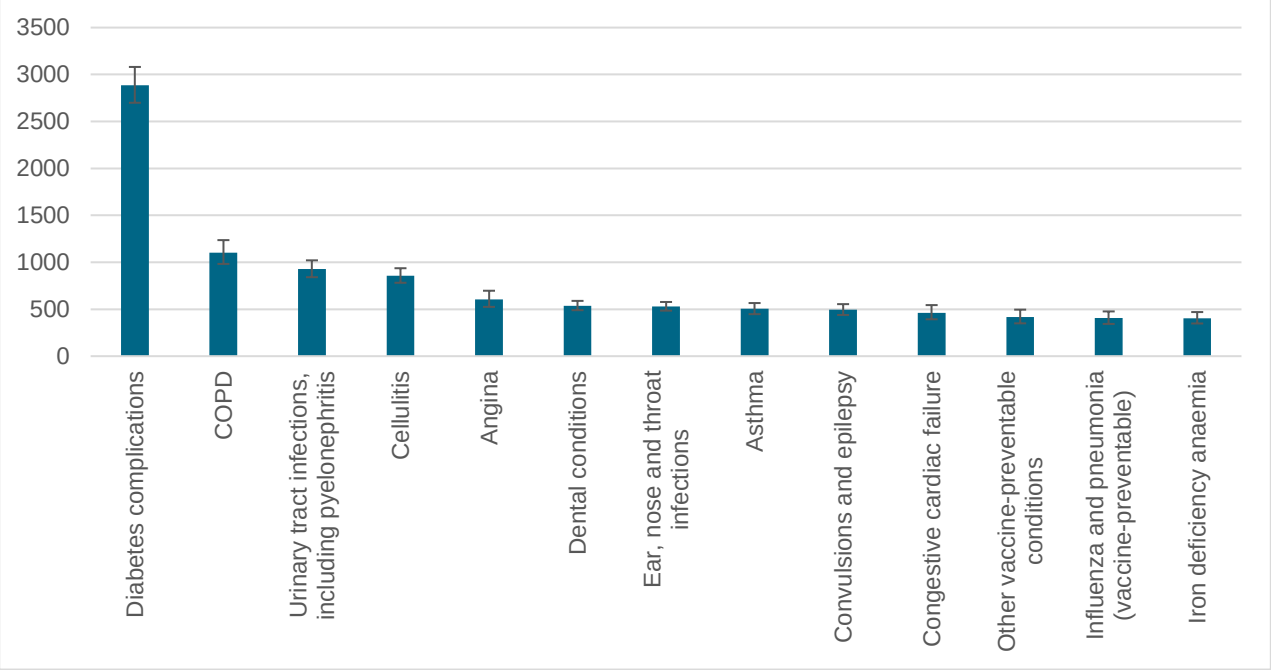
Table 16: Age standardised rates of potentially preventable hospitalisations in the region by Indigenous status, 2014-15 to 2016-17

Condition	Indigenous status	ASR	Lower 95% CI	Upper 95% CI
Total Vaccine-preventable	Non-Indigenous	197.1	192.0	202.2
	Indigenous	619.6	531.2	716.9
Total Acute	Non-Indigenous	1367.5	1353.9	1381.1
	Indigenous	2238.5	2101.4	2381.2
Total Chronic	Non-Indigenous	1768.3	1753.3	1783.4
	Indigenous	3951.3	3712.9	4199.4
Total PPH	Non-Indigenous	3292.1	3271.3	3312.9
	Indigenous	6598.3	6312.9	6891.6

Source: Queensland Hospital Admitted Patient Data Collection (QHAPDC), Department of Health, Queensland. Extracted on 6 November 2018 by Statistical Analysis and Linkage Unit, Statistical Services Branch

The leading condition in the region for potentially preventable hospitalisations over the three years 2014-15 to 2016-17 was diabetes complications. Figure 118: Age standardised rates of potentially preventable hospitalisations for selected conditions in the region, 2014-15 to 2016-17 reports the rate for selected conditions for 2014-15 to 2016-17 for the region.

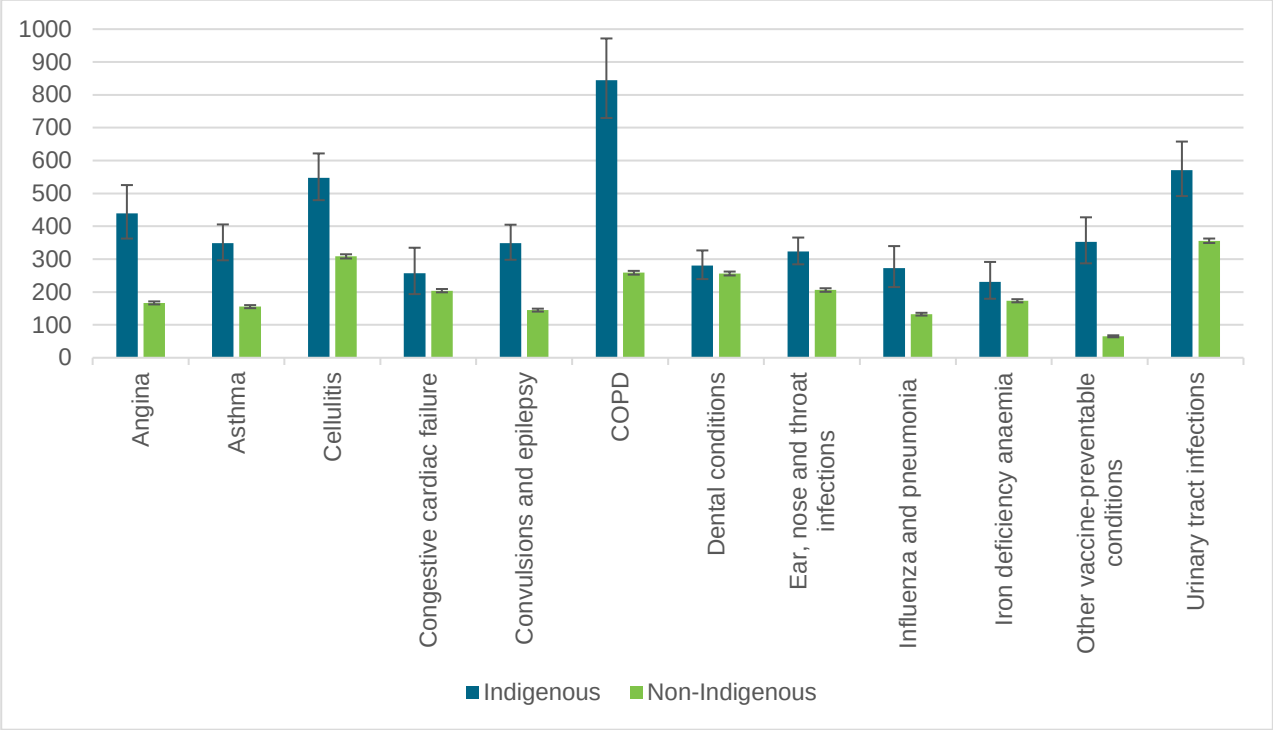
Figure 118: Age standardised rates of potentially preventable hospitalisations for selected conditions in the region, 2014-15 to 2016-17



Source: Queensland Hospital Admitted Patient Data Collection (QHAPDC), Department of Health, Queensland. Extracted on 6 November 2018 by Statistical Analysis and Linkage Unit, Statistical Services Branch

For non-Indigenous residents the age standardised rate for diabetes complications was 810 per 100,000 (CI 799.9-820). For Aboriginal and Torres Strait Islander residents, the age standardised rate was 2.5 times higher at 2074.7 per 100,000 (CI 1899.3-2260). Figure 119: Age standardised rates for potentially preventable hospitalisations for selected conditions in the region by Indigenous status, 2014-15 to 2016-17 reports the age standardised rate for selected conditions in the region from 2014-15 to 2016-17 by Indigenous status.

Figure 119: Age standardised rates for potentially preventable hospitalisations for selected conditions in the region by Indigenous status, 2014-15 to 2016-17



Source: Source: Queensland Hospital Admitted Patient Data Collection (QHAPDC), Department of Health, Queensland. Extracted on 6 November 2018 by Statistical Analysis and Linkage Unit, Statistical Services Branch

Frequent visitors to public hospitals

The term 'frequent visitors' refers to individuals who have more than five overnight hospitalisations within a financial year. Frequent visitors refer to patients, as opposed to hospital separations.

Frequent visitors are high utilisers of health services and therefore targeting this cohort of patients may indicate opportunities for better case management of chronic conditions and thus opportunities for efficiency gains. Because of this, a number of service related groups that naturally require a high number of visitors were excluded from the analysis.

The above qualifiers remove the following patients from the frequent visitor dataset:

- patients who are admitted as same-day patients such as those receiving chemotherapy, haemodialysis and day surgery procedures (as examples)
- patients who are occupying an inpatient bed for the purposes of rehabilitation, geriatric evaluation and management, maintenance, boarding, organ procurement, palliative care or psychogeriatric care
- patients who are admitted for mental health treatment.

Based on these parameters, there were 1,640 individual frequent visitors to the region's public hospitals during the 2017-18 financial year. Overall, the frequent visitor cohort generated 9,991 separations (9.5 per cent of total separations) and occupied 55,344 bed days (13.0 per cent of total OBDs); generating an average length of stay of 5.54 days. This is higher than the average length of stay of 3.91 days for overnight separations.

Respiratory conditions were the most common service group for frequent visitors with patients admitted for diagnostic groups such as chronic obstructive airways disease, cystic fibrosis, respiratory infections and respiratory system disorders. Admissions for respiratory conditions accounted for 14.9 per cent of frequent visitor separations (1,491 separations) and 15.6 per cent of hospital bed days occupied by frequent visitors (8,608 bed days).

Cardiology was the second most common service group for frequent visitors representing 11 per cent of all separations with a total of 1,164 separations and 5,709 bed days in 2017-18. This included diagnostic groups such as chest pain and heart failure and shock.

Table 17: Total separations and bed days for frequent visitors by top ten diagnostic related groups, 2017-18

	Separations		Bed days	
Service Related Group	**Number**	**Proportion**	**Number**	**Proportion**
Respiratory Medicine	1,491	14.9%	8,608	15.6%
Cardiology	1,164	11.7%	5,709	10.3%
Non Subspecialty Surgery	839	8.4%	4,052	7.3%
Immunology & Infections	605	6.1%	3,731	6.7%
Non Subspecialty Medicine	585	5.9%	2,236	4.0%
Neurology	540	5.4%	2,605	4.7%
Orthopaedics	494	4.9%	3,927	7.1%
Endocrinology	353	3.5%	1,226	2.2%
Urology	351	3.5%	1,352	2.4%
Haematology	344	3.4%	2,268	4.1%
Other	3,225	32.3%	19,630	35.5%
Total	**9,991**		**55,344**	

Source: HBCIS 2018

Frequent visitors to public hospitals tend to be older, with 77 per cent of frequent visitors to public hospitals in 2017-18 aged 50 years and over. Over two in five (43 per cent) frequent visitors to public hospitals are aged 70 years and over, as indicated in Table 18.

Table 18: Age profile of frequent visitors to public hospitals, region, 2017-18

Age Strata	No. of Patients	No. of SEPs	No. of Bed Days
Under 16	25	141	382
16-19	17	105	535
20-29	82	584	2,829
30-39	114	731	4,286
40-49	145	884	5,115
50-59	241	1,487	8,119
60-69	317	2,006	12,080
70-79	376	2,245	12,176
80-89	267	1,514	8,483
>90	56	294	1,339
Total	**1,640**	**9,991**	**55,344**

Source: HBCIS 2018

Approximately 36 per cent of total separations of frequent visitors to public hospitals occurred at the Royal Brisbane and Women's Hospital with 3,641 separations in 2017-18. This was followed by The Prince Charles Hospital with 2,955 separations in 2017-18. The Royal Brisbane and Women's Hospital also has the highest total bed days (23,012 days) and the longest average length of stay, excluding Kilcoy (6.32 days). The average length of stay is shortest at the Caboolture Hospital (4.33 days), as shown in Table 19.

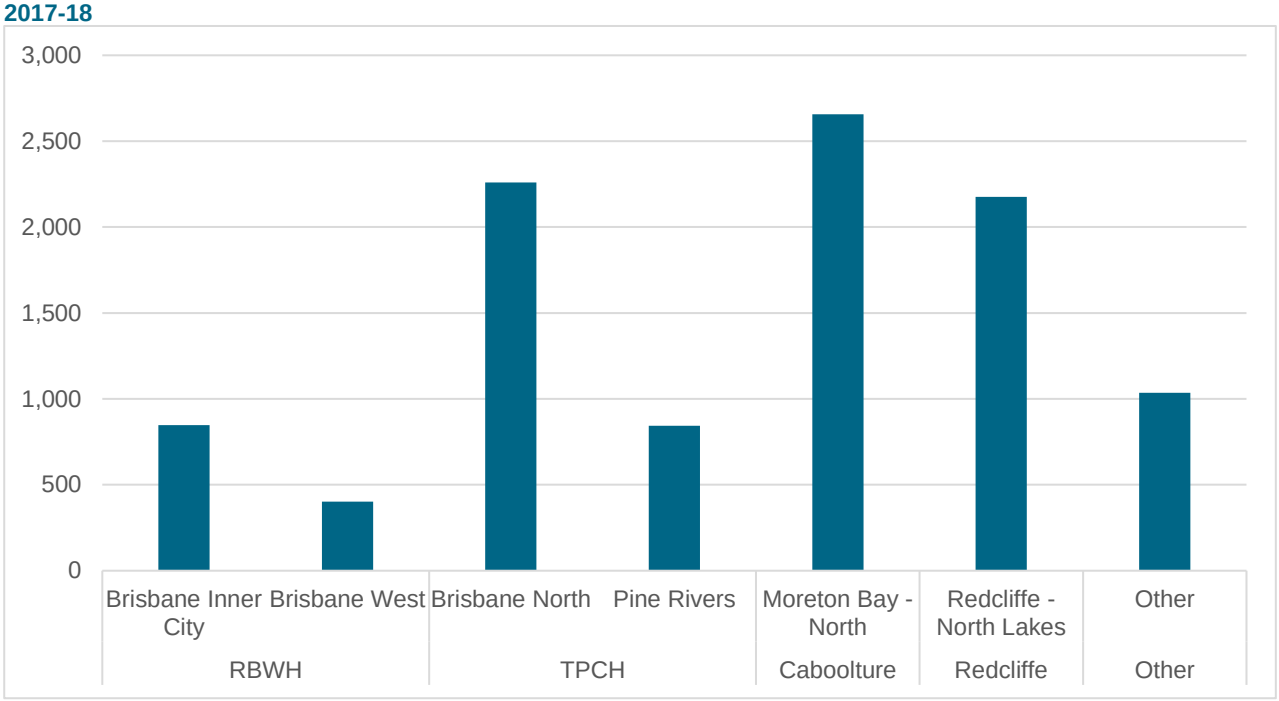
Table 19: Frequent visitors to public hospitals by facility, region, 2017-18

Hospital	Total separations of frequent visitors	Total bed days of frequent visitors	Average length of stay (ALOS)
Caboolture	1,622	6,622	4.08 days
Redcliffe	1,724	7,507	4.35 days
TPCH	2,955	17,860	6.04 days
RBWH	3,641	23,012	6.32 days
Kilcoy	49	343	7.00 days
Total	**9,991**	**55,344**	**5.54 days**

Source: HBCIS 2018

Figure 120 indicates that there are a higher number of frequent visitors to public hospitals residing in the Moreton Bay – North, Brisbane North and Redcliffe – North Lakes sub regions compared to all other areas in 2017- 2018.

Figure 120: Number of frequent presentations for chronic conditions by sub region and hospital catchment, 2017-18



Source: HBCIS 2018

Oral health

Metro North Oral Health Service (MNOHS) differs from the broader suite of community and acute hospital services provided by MNHHS in that oral health services are targeted to an eligible population rather than providing universal access.

Services include oral health promotion, preventive care, oral hygiene, general practice dentistry, pain and trauma management, emergency care, denture services and specialist services.

Services are provided through a network of facilities including hospital-based clinics, community clinics, school-based clinics, mobile dental clinics and specialist clinics at the Oral Health Centre (OHC) and Queensland Children's Hospital (QCH).

As at 2017, 42.9% of the Region's total population (429,121 residents) were eligible for public funded oral health services. The eligibility criteria for adults, children and young people are endorsed by Commonwealth and State governments.

Metro North Oral Health Service is a collection of the following divisions:

1. Children's Oral Health Service (COHS) – Child Specialist Services (CSS) and Child and Adolescent Oral Health Service (CAOHS)
2. General Practice Oral Health Services (GPOHS)
3. Oral Health Centre (OHC) and Adult Specialist Services

Metro North Hospital and Health Service (MNHHS) and the University of Queensland (UQ) have entered an Alliance to integrate oral health education, research and clinical services at the Oral Health Centre (OHC), Herston. Services available at the OHC include general dentistry, endodontics, periodontics, oral and maxillofacial surgery, prosthodontics, special needs dentistry, oral medicine, maxillofacial radiology, paediatric dentistry and orthodontics.

1. Consumer Liaison and Advisory Service (CLAS)
2. Oral Health Directorate
3. Oral Health Support Services.

Activity by service catchment versus patient resident catchment

In 2017-18, 160,215 occasions of service (OOS) were provided to residents within the region[209], broken down as follows:

- RBWH catchment residents - 95.0 per cent of OOS (33,723) occurred in the RBWH catchment, followed by 4.7 per cent (1,667 OOS) in the TPCH catchment
- TPCH catchment residents - 43.1 per cent of OOS (23,884) occurred in the TPCH catchment, followed by 53.8 per cent (29,834 OOS) in the RBWH catchment
- Redcliffe catchment residents – 54.0 per cent of OOS (13,349) occurred in the Redcliffe Hospital catchment, followed by 26.5 per cent (6,553 OOS) in the RBWH catchment
- Caboolture catchment residents – 71.6 per cent of OOS (31,875) occurred in the Caboolture Hospital catchment, followed by 21.0 per cent (9,336 OOS) in the RBWH catchment.

[209] Variations exist with defined catchments for oral health services versus hospital catchments. Redcliffe catchment includes Redcliffe/Sandgate, TPCH catchment includes Stafford/Pine Rivers.

Table 20: MNOHS OOS by service provision catchment versus patient resident catchment, 2017-18

		Service provision									
Resident catchment	Age group	RBWH	%	TPCH	%	Redcliffe	%	Caboolture	%	Grand total	%
Herston	0-16	3,869	74.2	1,337	25.6	4	0.1	5	0.1	5,215	100
	17-64	17,223	98.2	212	1.2	34	0.2	68	0.4	17,537	100
	65+	12,631	99.0	118	0.9	7	0.1	5	0.0	12,761	100
Herston resident catchment total		33,723	95.0	1,667	4.7	45	0.1	78	0.2	35,513	22.2
Stafford/Pine Rivers	0-16	5,329	30.0	11,917	67.1	286	1.6	233	1.3	17,765	100
	17-64	14,432	68.3	5,989	28.4	463	2.2	234	1.1	21,118	100
	65+	10,073	60.7	5,978	36.0	430	2.6	102	0.6	16,583	100
Stafford/Pine Rivers resident catchment total		29,834	53.8	23,884	43.1	1,179	2.1	569	1.0	55,466	34.6
Redcliffe/Sandgate	0-16	2,065	19.7	489	4.7	5,988	57.1	1,945	18.5	10,487	100
	17-64	3,150	38.0	1,135	13.7	3,585	43.2	428	5.2	8,298	100
	65+	1,338	22.6	668	11.3	3,776	63.6	151	2.5	5,933	100
Redcliffe/Sandgate resident catchment total		6,553	26.5	2,292	9.3	13,349	54.0	2,524	10.2	24,718	15.4
Caboolture/Kilcoy	0-16	3,209	15.6	990	4.8	874	4.2	15,533	75.4	20,606	100
	17-64	4,242	29.7	351	2.5	474	3.3	9,199	64.5	14,266	100
	65+	1,885	19.5	185	1.9	433	4.5	7,143	74.1	9,646	100
Caboolture/Kilcoy resident catchment total		9,336	21.0	1,526	3.4	1,781	4.0	31,875	71.6	44,518	27.8
Grand total		79,446		29,369		16,354		35,046		160,215	100

Source: ISOH dataset 2015-16 to 2017-18, extracted July 2018 by the Office of the Chief Dental Officer

Activity by GPOHS clinic

General Practice Oral Health Services provides publicly funded consultation, diagnostic and ranges of oral health treatments to eligible adults. There are dental clinics at North Lakes, Pine Rivers, Sandgate, Redcliffe Hospital, Caboolture and Stafford, in addition to an East Side Oral Health Priority Populations Service and Northern Outreach Oral Health Program.

Between 2015-16 and 2017-18, the overall OOS provided by GPOHS decreased by 9,623 from 84,692 OOS to 75,069 OOS (5.9 per cent per annum decrease).

The highest volume decrease in OOS (n=6,285) was recorded at the Redcliffe Dental Clinic which decreased from 16,406 OOS in 2015-16 to 10,121 OOS in 2017-18. In 2017-18, the highest volume of OOS (n=15,132) was recorded at the Caboolture Dental Clinic followed by 14,829 OOS at the Stafford Dental Clinic.

Table 21: GPOHS OOS by clinic, 2015-16 to 2017-18

	2015-16 OOS		2016-17 OOS		2017-18 OOS		Change from 2015-16 to 2017-18	
GPOHS	n	%	n	%	n	%	n	CAGR %
Caboolture Dental Clinic	23,438	27.7	16,576	21.6	15,132	20.2	-8,306	-19.6
Indooroopilly Dental Clinic	3,626	4.3	2,928	3.8	1,317	1.8	-2,309	-39.7
Kilcoy Dental Clinic*	-	-	353	0.5	600	0.8	600	n/a
Pine Rivers Dental Clinic	10,079	11.9	8,529	11.1	6,468	8.6	-3,611	-19.9
Redcliffe Dental Clinic	16,406	19.4	11,116	14.5	10,121	13.5	-6,285	-21.5
Sandgate Dental Clinic	10,401	12.3	9,096	11.9	9,729	13.0	-672	-3.3
Stafford Dental Clinic	17,377	20.5	15,313	20.0	14,829	19.8	-2,548	-7.6
Woodford Correctional Centre	1,520	1.8	2,078	2.7	2,055	2.7	535	16.3
Mobile Community Dental Clinic 04	1,845	2.2	1,213	1.6	1,638	2.2	-207	-5.8
Private Providers (Outsourcing)	-	-	9,467	12.3	13,180	17.6	13,180	n/a
Grand total	84,692	100.0	76,669	100.0	75,069	100.0	-9,623	-5.9

Source: ISOH dataset 2015-16 to 2017-18, extracted July 2018 by the Office of the Chief Dental Officer

Activity by CAOHS team and clinic

General oral health care is provided onsite at schools through fixed or mobile dental clinics by CAOHS. No specialist treatments are provided; children requiring specialist care are referred to COHS-CSS or privately.

Between 2015-16 and 2017-18, the overall OOS provided by CAOHS decreased by 460 from 43,138 OOS to 42,678 OOS (0.5 per cent per annum decrease). Whilst the overall OOS decreased between 2015-16 and 2017-18, the recorded OOS in the Redcliffe and Caboolture teams increased by 2,228 OOS and 1,689 OOS respectively.

Both the Central and Kallangur teams recorded decreases in volume and per annum growth between 2015-16 and 2017.

Table 22: CAOHS OOS by team, 2015-16 to 2017-18

	2015-16 OOS		2016-17 OOS		2017-18 OOS		Change from 2015-16 to 2017-18	
CAOHS team	n	%	n	%	n	%	n	CAGR %
Caboolture	14,280	33.1	12,691	32.5	15,969	37.4	1,689	5.7
Central	8,114	18.8	7,063	18.1	6,156	14.4	-1,958	-12.9
Kallangur	13,451	31.2	11,550	29.6	11,032	25.8	-2,419	-9.4
Redcliffe	7,293	16.9	7,728	19.8	9,521	22.3	2,228	14.3
Grand total	43,138	100.0	39,032	100.0	42,678	100.0	-460	-0.5

Source: ISOH dataset 2015-16 to 2017-18, extracted July 2018 by the Office of the Chief Dental *Officer*

Emergency department presentations for dental related conditions

Of the total patients presenting to an emergency department within the region between 2015-16 and 2017-18, between 0.6 to 0.7 per cent had a primary diagnosis of a dental related condition.

The top three primary diagnosis presentations for a dental related condition has remained consistent between 2015-16 and 2017-18. In 2017-18, the top three primary diagnoses were 'abscess – dental' (37.9 per cent, 704 presentations), 'toothache' (31.7 per cent, 588 presentations) and 'dental caries' (7.2 per cent, 134 presentations).

Table 23: Emergency department presentations at Metro North HHS hospitals to resident and non-resident patients with a primary diagnosis of a dental related condition, by hospital and resident catchment, 2015-16 to 2017-18

		2015-16		2016-17		2017-18		Change from 2015-16 to 2017-18	
Hospital	Resident catchment	n	%	n	%	n	%	n	CAGR %
RBWH	RBWH	241	39.1	203	35.5	212	35.6	-29	-6.2
	TPCH	159	25.8	179	31.3	161	27.1	2	0.6
	Redcliffe	38	6.2	31	5.4	41	6.9	3	3.9
	Caboolture	25	4.1	29	5.1	29	4.9	4	7.7
	Other HHS or jurisdiction	154	25.0	130	22.7	152	25.5	-2	-0.7
RBWH total		617	30.6	572	30.0	595	32.0	-22	-1.8
TPCH	RBWH	39	8.4	32	7.4	44	10.4	5	6.2
	TPCH	347	75.1	345	80.0	325	76.8	-22	-3.2
	Redcliffe	38	8.2	33	7.7	21	5.0	-17	-25.7
	Caboolture	10	2.2	9	2.1	13	3.1	3	14.0
	Other HHS or jurisdiction	28	6.1	12	2.8	20	4.7	-8	-15.5
TPCH total		462	22.9	431	22.6	423	22.8	-39	-4.3
Redcliffe Hospital	RBWH	2	0.4	1	0.2	2	0.5	-	-
	TPCH	53	11.4	56	12.6	43	10.6	-10	-9.9
	Redcliffe	359	77.4	346	77.8	317	78.5	-42	-6.0
	Caboolture	25	5.4	22	4.9	26	6.4	1	2.0
	Other HHS or jurisdiction	25	5.4	20	4.5	16	4.0	-9	-20.0
Redcliffe Hospital total		464	23.0	445	23.3	404	21.8	-60	-6.7
Caboolture Hospital	RBWH		-	1	0.2	2	0.5	2	
	TPCH	7	1.5	15	3.4	6	1.5	-1	-7.4
	Redcliffe	22	4.8	21	4.8	22	5.5	-	-
	Caboolture	390	85.9	377	86.5	333	83.9	-57	-7.6
	Other HHS or jurisdiction	35	7.7	22	5.0	34	8.6	-1	-1.4
Caboolture Hospital total		454	22.5	436	22.8	397	21.4	-57	-6.5
Kilcoy Hospital	TPCH	1	5.6		-		-	-1	-100.0
	Redcliffe		-	2	8.0		-	-	
	Caboolture	12	66.7	21	84.0	31	81.6	19	60.7
	Other HHS or jurisdiction	5	27.8	2	8.0	7	18.4	2	18.3
Kilcoy Hospital total		18	0.9	25	1.3	38	2.0	20	45.3
Grand Total		2,015	100.0	1,909	100.0	1,857	100.0	-158	-4.0

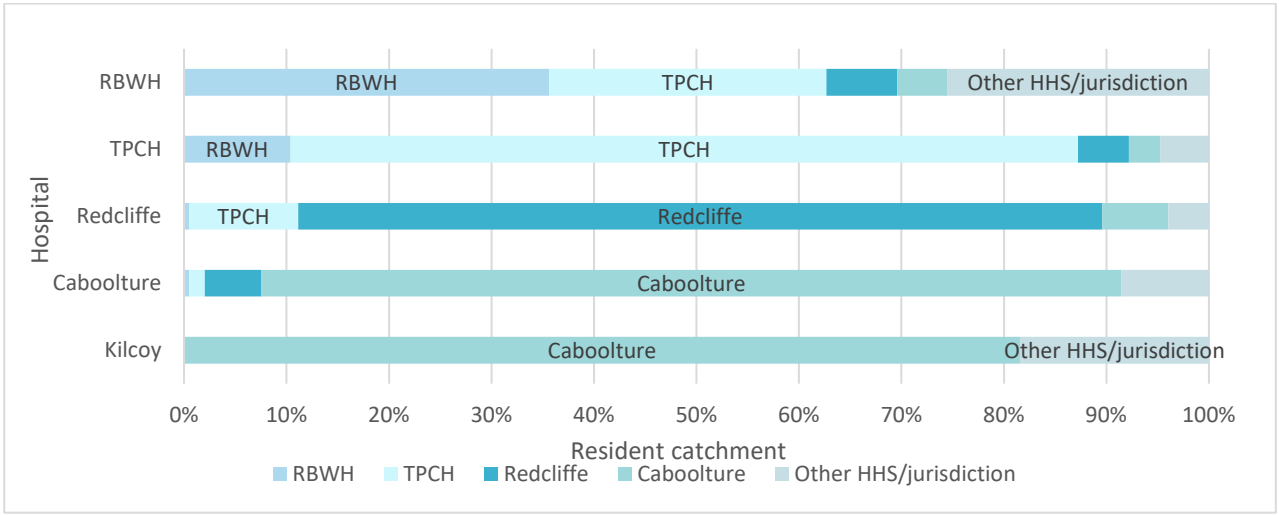
Source: EDIS detailed dataset 2015-16 to 2017-18, 2018-17 extracted July 2018 (excludes presentations 'dead on arrival)

Presentations for dental related conditions by hospital catchment and patient resident catchment

This section identifies patient resident flows for each Metro North emergency department (ED). In 2017-18:

- 35.6 per cent of patients residing in the RBWH catchment presented to the RBWH ED, followed by 27.1 per cent of patients that resided in the TPCH catchment
- 76.8 per cent of patients residing in the TPCH catchment presented to the TPCH ED, followed by 10.4 per cent of patients that resided in the RBWH catchment
- 78.5 per cent of patients residing in the Redcliffe catchment present to the Redcliffe Hospital ED, followed by 10.6 per cent of patients that resided in the TPCH catchment
- 83.9 per cent of patients residing in the Caboolture catchment presented to the Caboolture Hospital ED, followed by 8.6 percent of patients that resided in other HHSs or jurisdictions
- 12.3 per cent of patients presenting to an ED within the region were from another HHS or jurisdiction.

Figure 121: MNOHS presentations for dental related conditions by hospital catchment and patient resident catchment



Source: EDIS detailed dataset 2015-16 to 2017-18, 2018-19 extracted July 2018 (excludes presentations 'dead on arrival)

Potentially preventable hospitalisations for dental related conditions

A high rate of potentially preventable hospitalisations for dental related conditions may indicate an increased prevalence of the conditions in the community, poorer functioning of the non-hospital care system or an appropriate use of the hospital system to respond to greater need[210]. Admitted separation rates, or rates of completed episodes of care for dental related PPHs, therefore provide an indicator of potential inadequacy of dental care in the community.

Between 2015-16 and 2017-18, admitted separations with a primary diagnosis relating to a dental condition increased 2.2 per cent per annum (n=38), from 838 admitted separations to 876 admitted separations.

During the same period, the largest volumes of PPHs related to the primary diagnoses of K02 dental caries, K04 diseases of pulp and periapical tissues and K12 stomatitis and related lesions. These top three PPHs represent more than 70 per cent of the total admitted separations for a dental related condition.

Table 24: Total admitted separations for PPH dental related conditions (primary diagnosis), Metro North residents in public and private hospitals, 2015-16 to 2017-18

	2015-16		2016-17		2017-18		Change from 2015-16 to 2017-18	
Principal diagnosis by ICD group	n	%	n	%	n	%	n	CAGR%
K02 Dental caries	311	37.1	338	38.1	291	33.2	-20	-3.3
K04 Diseases of pulp and periapical tissues	244	29.1	213	24.0	234	26.7	-10	-2.1
K12 Stomatitis and related lesions	90	10.7	106	11.9	130	14.8	40	20.2
K13 Other diseases of lip and oral mucosa	52	6.2	70	7.9	76	8.7	24	20.9
K08 Other disorders of teeth and supporting structures	45	5.4	71	8.0	52	5.9	7	7.5
K05 Gingivitis and periodontal diseases	54	6.4	41	4.6	43	4.9	-11	-10.8
K09 Cysts of oral region not elsewhere classified	24	2.9	24	2.7	38	4.3	14	25.8
K03 Other diseases of hard tissues of teeth	9	1.1	11	1.2	8	0.9	-1	-5.7
K06 Other disorders of gingiva and edentulous alveolar ridge	9	1.1	14	1.6	4	0.5	-5	-33.3
Grand total	838	100.0	888	100.0	876	100.0	38	2.2

Source: DSS Activity Based Funding Cubes

[210] Australian Institute of Health and Welfare, 2012

Emergency Department (ED) presentations

Emergency Department data presented in this section is for the period of July 2015 to June 2018, and includes:

- Caboolture Hospital
- Kilcoy Hospital
- Redcliffe Hospital
- Royal Brisbane and Women's Hospital
- The Prince Charles Hospital.

The Australasian triage scale (ATS) classification system includes a determination of the urgency of a patient's condition with categories one to three having the highest urgency whilst categories four and five the least.

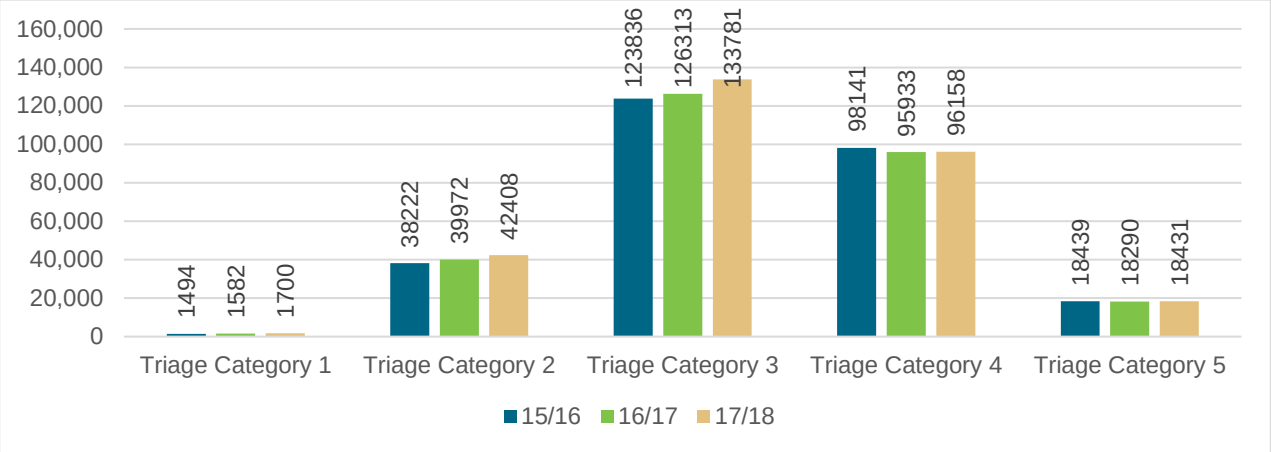
Table 25: Australasian triage scale (ATS) classification system

Triage category	Australasian Triage Scale (ATS)	Treatment Acuity (maximum waiting time)
Triage category 1	Resuscitation	Immediate
Triage category 2	Emergency	Minutes (within 10 minutes)
Triage category 3	Urgent	Half hour (within 30 minutes)
Triage category 4	Semi-urgent	One hour (within 60 minutes)
Triage category 5	Non-urgent	Two hours (within 120 minutes)

Presentations not allocated to a triage category have been excluded from this analysis. Data captured on presentations, may also capture a single person more than once. Presentations by residents at EDs located outside the region have been excluded from the analysis.

There were approximately 292,500 ED presentations in 2017-18, a 4.4 per percent increase over the last two years. Triage category three represented the highest proportion of emergency presentations with 45.7 per cent of all presentations in 2017-18, followed by triage category four with 32.9 per cent of all presentations. As Figure 122 shows, the lesser triage categories (category four and category five) remained stable between 2015-16 and 2017-18. However, total presentations increased during the same time period.

Figure 122: ED presentations by triage category, 2015-16 to 2017-18



Source: Emergency Department Information System

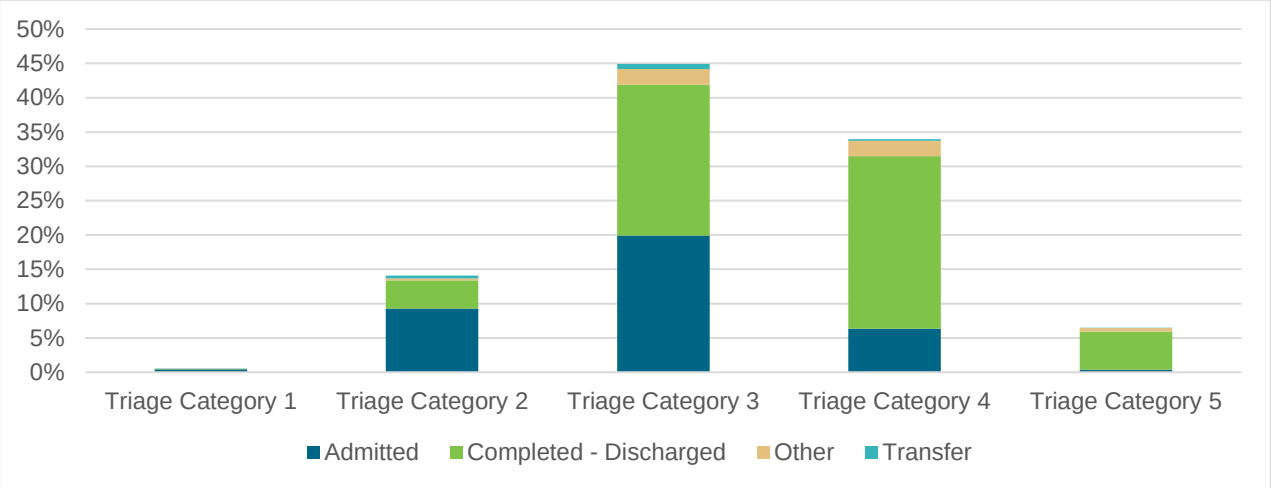
Potentially unnecessary ED presentations

Public hospital data was analysed to identify ED presentations that were potentially unnecessary and could have been managed by a GP. In keeping as close as possible to the Australian Institute of Health and Welfare definition of GP type ED presentations, the following filters were applied to ED data:

- triage category four and five, and
- were not admitted to hospital, not referred to hospital, or did not die.

From July 2015 to June 2018, 33.7 per cent of all ED presentations were considered potentially unnecessary. Triage category four and five presentations that were either completed and discharged represented nearly one-third of all presentations, while triage category four and five presentations where the patient did not wait or left before completion of treatment represented an additional 3.0 per cent of all presentations as reported in Figure 123.

Figure 123: Potentially unnecessary ED presentations by ED discharge and triage category, July 2015 – June 2018



Source: Emergency Department Information System

Mode of arrival

While the criteria provides a good indicator of GP type ED presentations, not all presentations in this category may have been unnecessary. Arrival transport mode is another variable used to categorise potential primary care type ED presentations. The Royal Australian College of General Practitioners (RACGP) specifically excludes patients transported by ambulance to define primary care type ED presentations.

Between July 2015 and June 2018, 64 per cent of patients arrived at the emergency department via private or public transport with 33.5 per cent arrived by ambulance and less than one per cent arrived by police. 79.1 per cent of non-admitted category four and five presentations arrived via private or public transport with 20.2 per cent arriving by ambulance. Less than one per cent non-admitted category four and five presentations arrived by police.

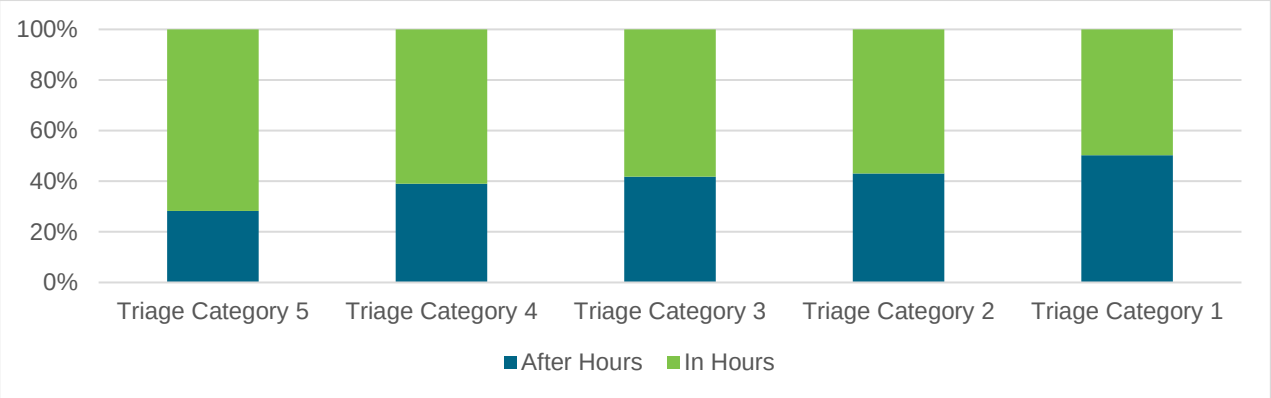
This is also supported by the fact that 90.8 per cent of patients were either self-referred or by family or friends. Just over five per cent (5.2 per cent) of referrals were from a GP.

Time of presentation

Between July 2015 and June 2018, there were 287,833 total ED after-hours (6pm to 7am) presentations in the region. Of these presentations, 77,156 presentations were category four and five presentations that were not admitted (approximately 27 per cent).

Figure 124 demonstrates that the greatest number of triage category four and five ED presentations occur within normal operating hours. As the triage priority increases so too does the demand on after-hours ED services.

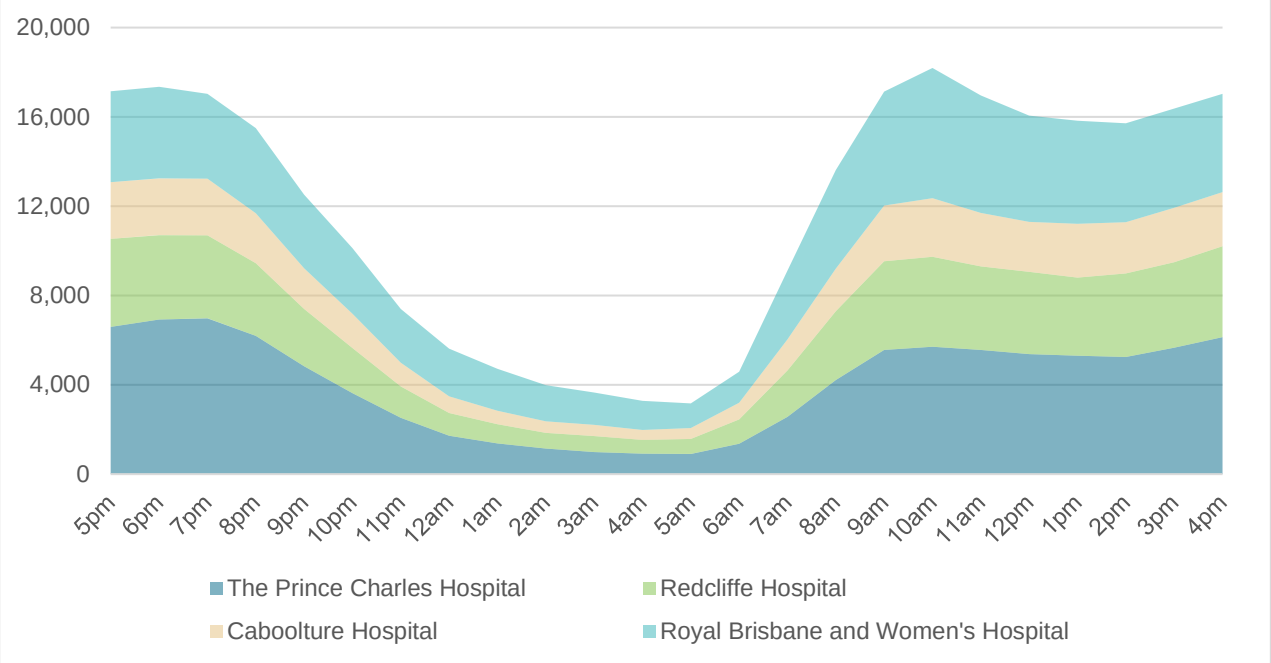
Figure 124: Time of ED presentation by triage category, July 2015 – June 2018



Source: Emergency Department Information System

For all public hospitals in the region, the total category four and five presentations trend at or above 16,000 between the hours of 9am and 9pm with elevated activity occurring in the mid-morning between 9am and 12pm and in the early evening between 4pm and 8pm. As shown in Figure 125 this evening period accounts for nearly one quarter (24.3 per cent) of non-admitted category four and five presentations which declines quickly to less than 4,000 presentations between 2am and 6am.

Figure 125: Non-admitted after-hours category four and five ED presentations, July 2015 – June 2018



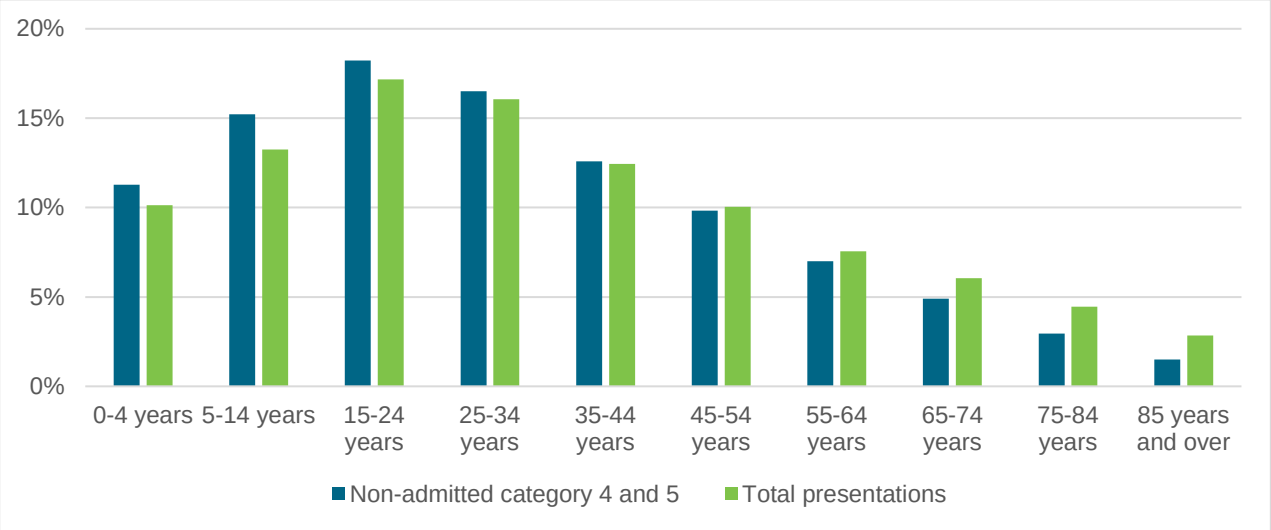
Source: Emergency Department Information System

Demographics

The majority of presenters to EDs in the region were aged under 35 years of age with children aged under 15 years representing 23.4 per cent of all presentations (

Figure 126). Non-admitted category four and five presentations tended to be represented by the younger age groups when compared to total presentations. Presenters aged between 15-24 years and 25-34 years represented 18.2 per cent and 16.5 per cent of all non-admitted category four and five presentations respectively. Children aged 5-14 years represented 15.2 per cent of all non-admitted category four and five presentations.

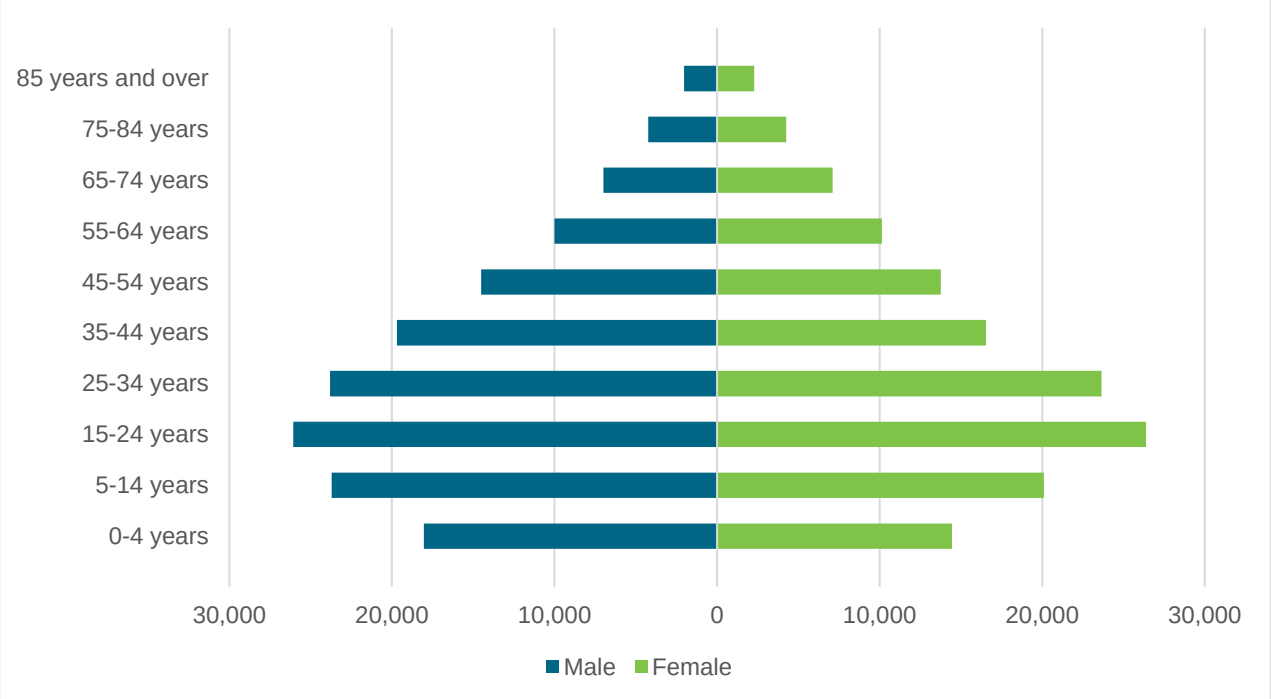
Figure 126: ED presentations and non-admissions by age, July 2015 – June 2018



Source: Emergency Department Information System

Rates of presentation were similar for both males and females, although males are more likely than females to present to the ED, across all age groups. This is reflected in overall proportions with 52 per cent of presenting identifying as male compared to 48 per cent as female as seen in Figure 127.

Figure 127: ED presentations by age and gender, July 2015 – June 2018

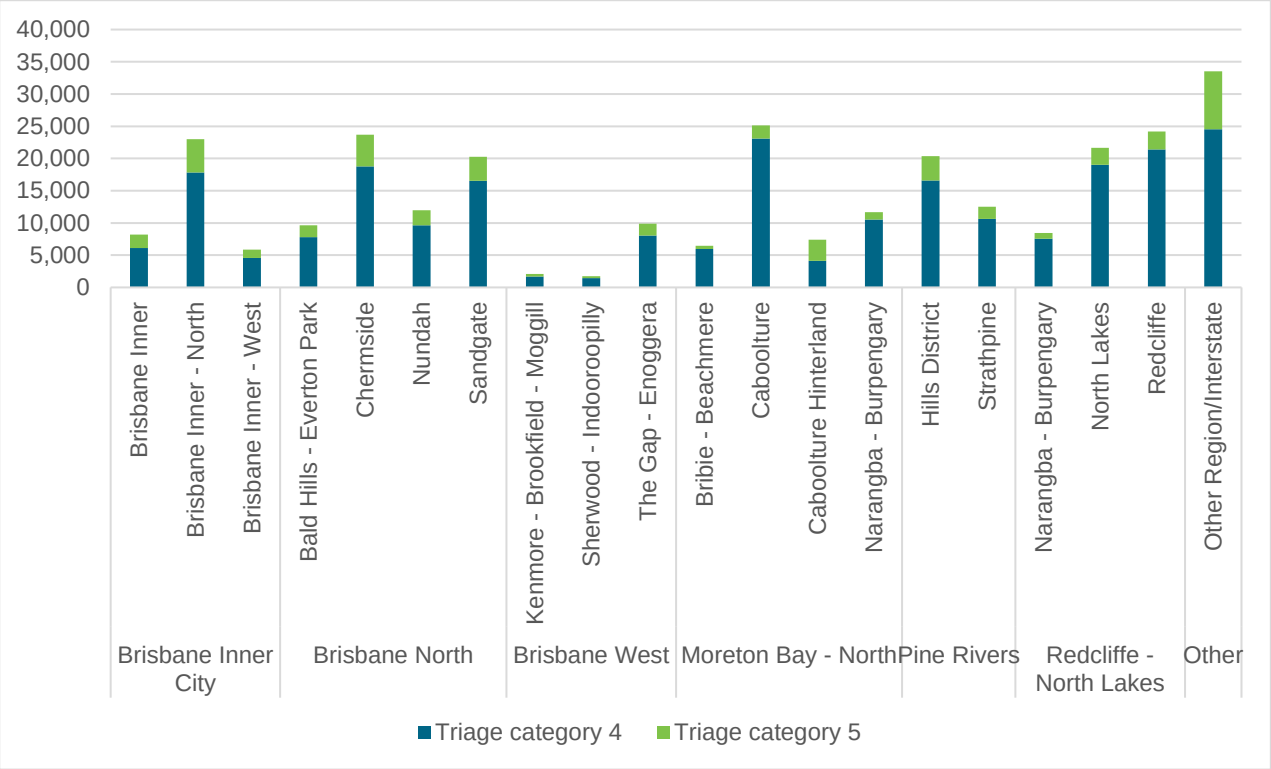


Source: Emergency Department Information System

A considerable proportion of category four and five non-admitted ED presenters live in the northern parts of the region, with a large cohort residing in the areas of Redcliffe, Caboolture, Hills District and North Lakes as shown in

Figure 128. Nearly 12% of presentations are from people who reside outside the region with these presentations overwhelmingly occurring at the Royal Brisbane and Women's Hospital.

Figure 128: Non-admitted category four and five ED presentations by statistical area level three and sub region, July 2015 – June 2018

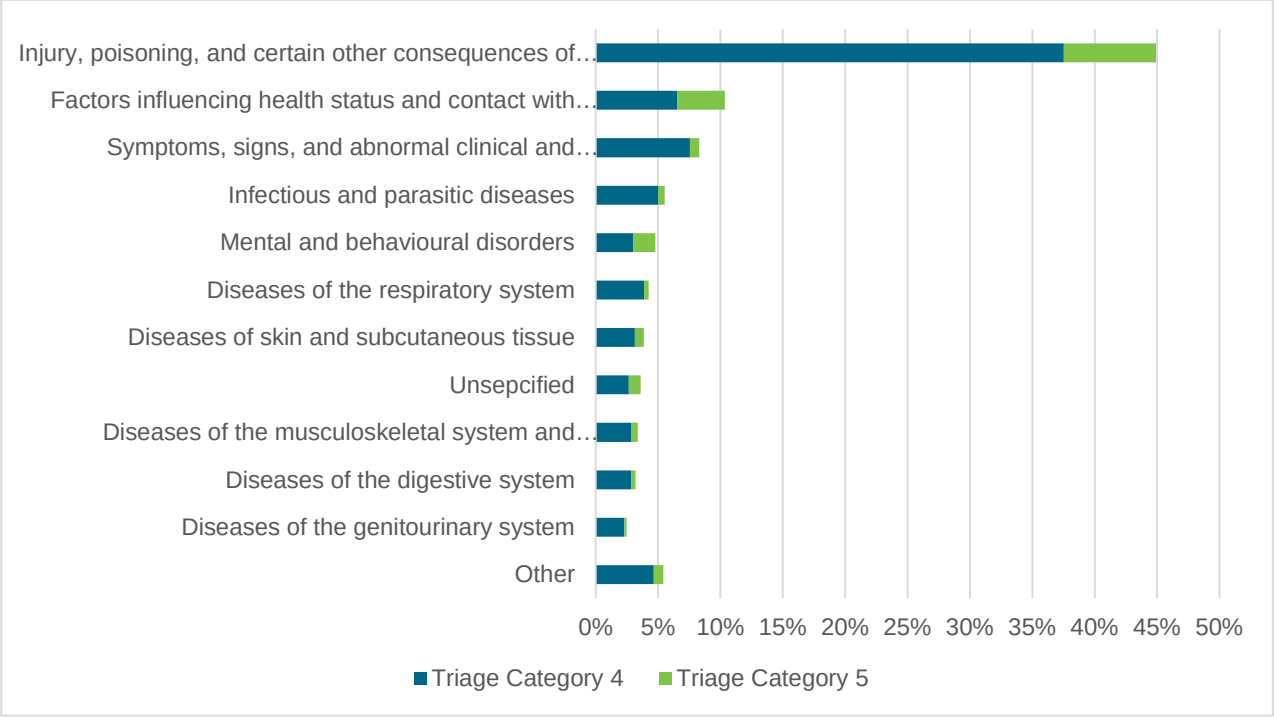


Source: Emergency Department Information System

Diagnosis

Injury, poisoning and certain other consequences of external causes including burns represented the principal diagnosis category of non-admitted category four and five ED presentations (44.9 per cent). This is followed by factors influencing health status and contact with health services (10.4 per cent), symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (8.3 per cent), certain infectious and parasitic diseases (5.5 per cent) and mental and behavioural disorders (4.8 per cent) as reported in Figure 129.

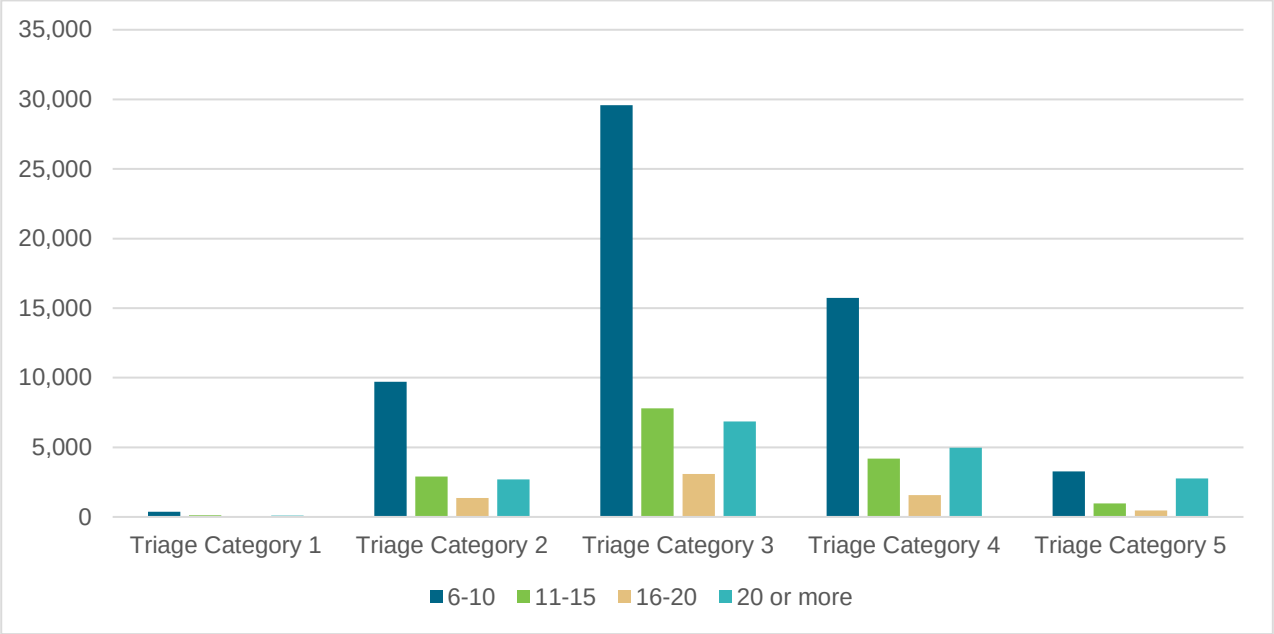
Figure 129: Top diagnosis (description) non-admitted category four and five ED presentations, July 2015 – June 2018



Source: Emergency Department Information System

A frequent attender was defined as a patient who presented to ED six or more times in a year. Approximately 12 per cent of all emergency presentations are from patients who meet this criterion. The largest cohort of frequent attenders had a frequency of six to ten presentations in a year and represented approximately 60 per cent of frequent attendances. Attendances by frequent attenders presenting to emergency departments were mostly triaged as a category three presentation as shown in Figure 130.

Figure 130: ED presentations by frequent ED attenders, by triage category July 2015 – June 2018



Source: Emergency Department Information System

Hospital service use

Inpatient or admitted hospital activity is defined as a patient who is admitted to a hospital (either overnight or same day) through a formal admission process while receiving medical care or treatment. As a metropolitan centre with a number of secondary, tertiary and quaternary hospitals, the region is relatively self-sufficient in providing admitted hospital care. In 2017-18, there were 439,658 admitted hospital separations[211] from Queensland public and private hospitals for the region's residents. Of these resident separations, 87.1 per cent occurred in public and private hospitals within the region.

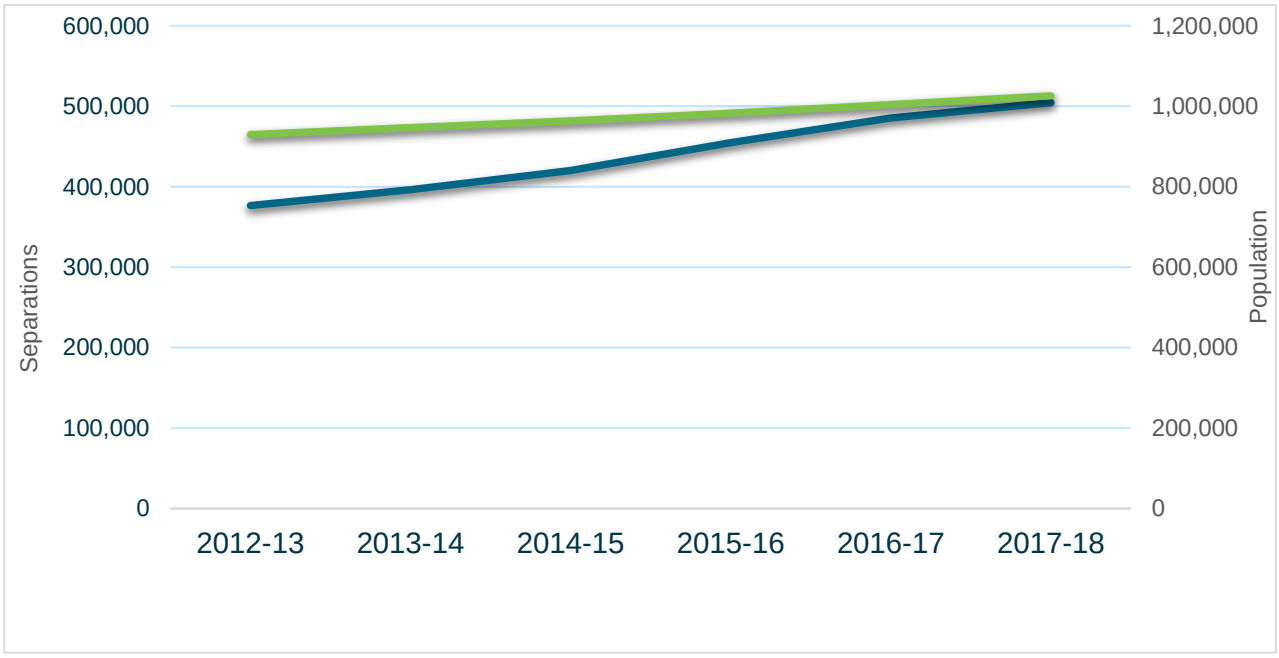
Table 26: Total admitted patient hospital episodes for all conditions, public and private hospitals, 2017-18

Resident separations within region - public or private hospitals	439,658	87.1%
Resident separations outside region - public or private hospitals	64,887	12.9%
Total	**504,545**	**100%**

Source: Queensland Health Admitted Patient Data Collection, QHAPDC, 2019

Over the last five years, hospital separations for residents of the region increased by 27.4 per cent (n=108,397), or 2.4 per cent per annum (Figure 131). During this same period the region's population increased by 8.0 per cent or 2.0 per cent per annum.

Figure 131: Total admitted hospital episodes (overnight and same day) for all conditions, region residents, public and private hospitals, 2013-14 to 2017-18

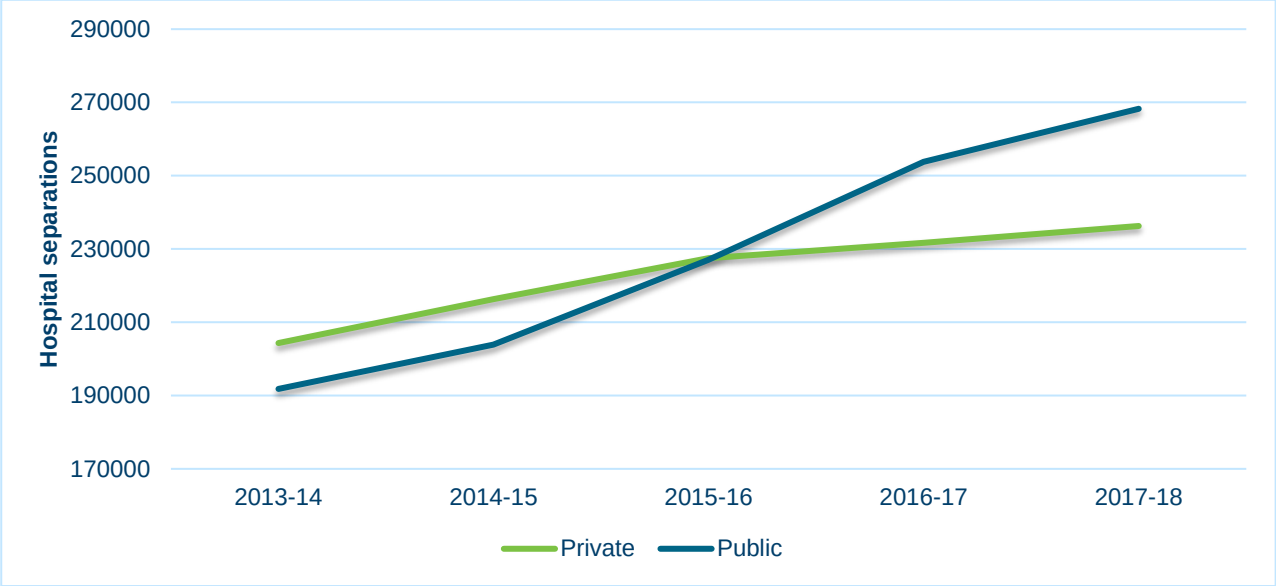


Source: Queensland Health Admitted Patient Data Collection, QHAPDC, 2018

Between 2013-14 to 2017-18 there was an increase in both public and private hospital admitted patient separations with growth in public hospitals (76,452 separations, 3.4 per cent per annum) higher than private hospitals (31,945 separations, 1.5 per cent per annum) (Figure 132). These different growth rates changed the distribution of service utilisation from majority private in 2013-14 (51.6 per cent private versus 48.4 per cent public) to majority public in 2017-18 (53.2 per cent public versus 46.8 per cent private).

[211] Hospital separations refer to the cessation of an admitted patient episode. There are two types of separations, formal and statistical (Australian Institute of Health and Welfare, 2015). Analysis of hospital separations during a given time period provide insight into hospital load and capacity, while providing a context potential health issues impacting upon a population. Hospital separations capture episodes of admitted patient care, rather than individuals. As such, more than one separation may be attributable to an individual if they are admitted and discharged from hospital multiple times during a given reporting period.

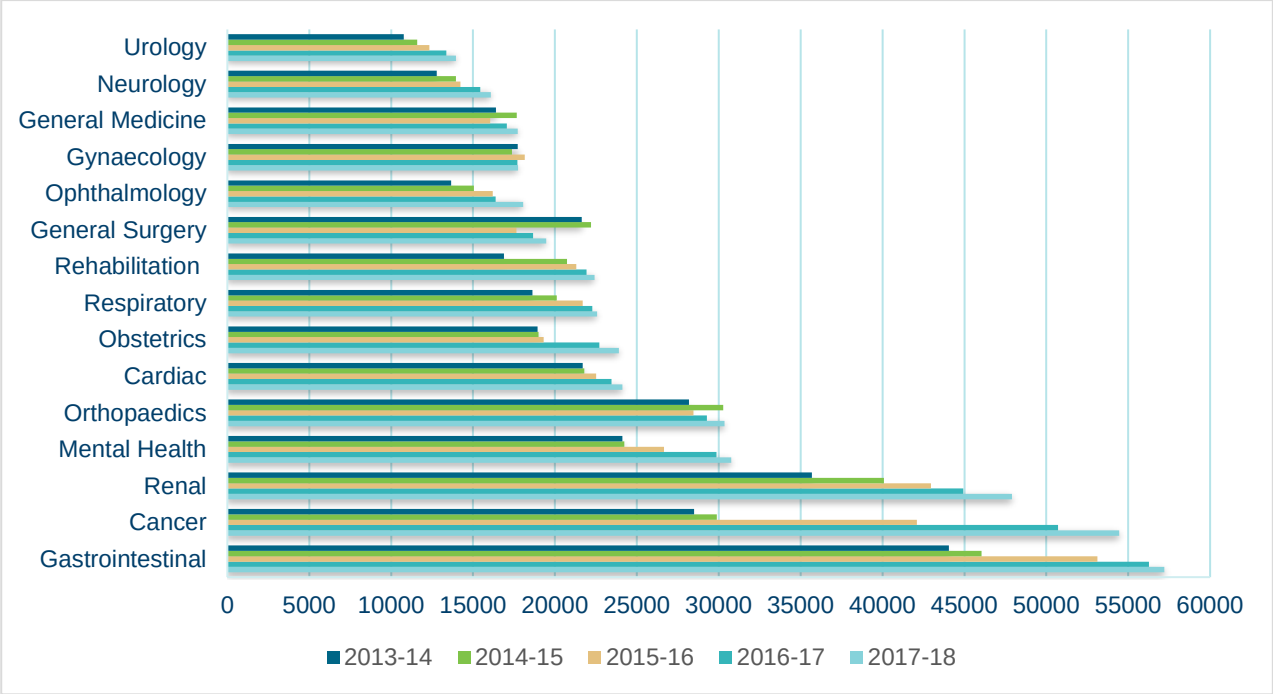
Figure 132: Total hospital separations for all conditions, region residents, public and private hospitals, 2013-14 to 2017-18



Source: Queensland Health Admitted Patient Data Collection, QHAPDC, 2018

In 2017-18, admitted patient activity (public and private hospital) for the region was highest in the service related groups related to gastrointestinal conditions (including diagnostic GI endoscopy, gastroenterology, and upper GI surgery), cancer (chemotherapy, haematological surgery, haematology, and medical oncology), and renal conditions (renal medicine and renal dialysis) (Figure 133).

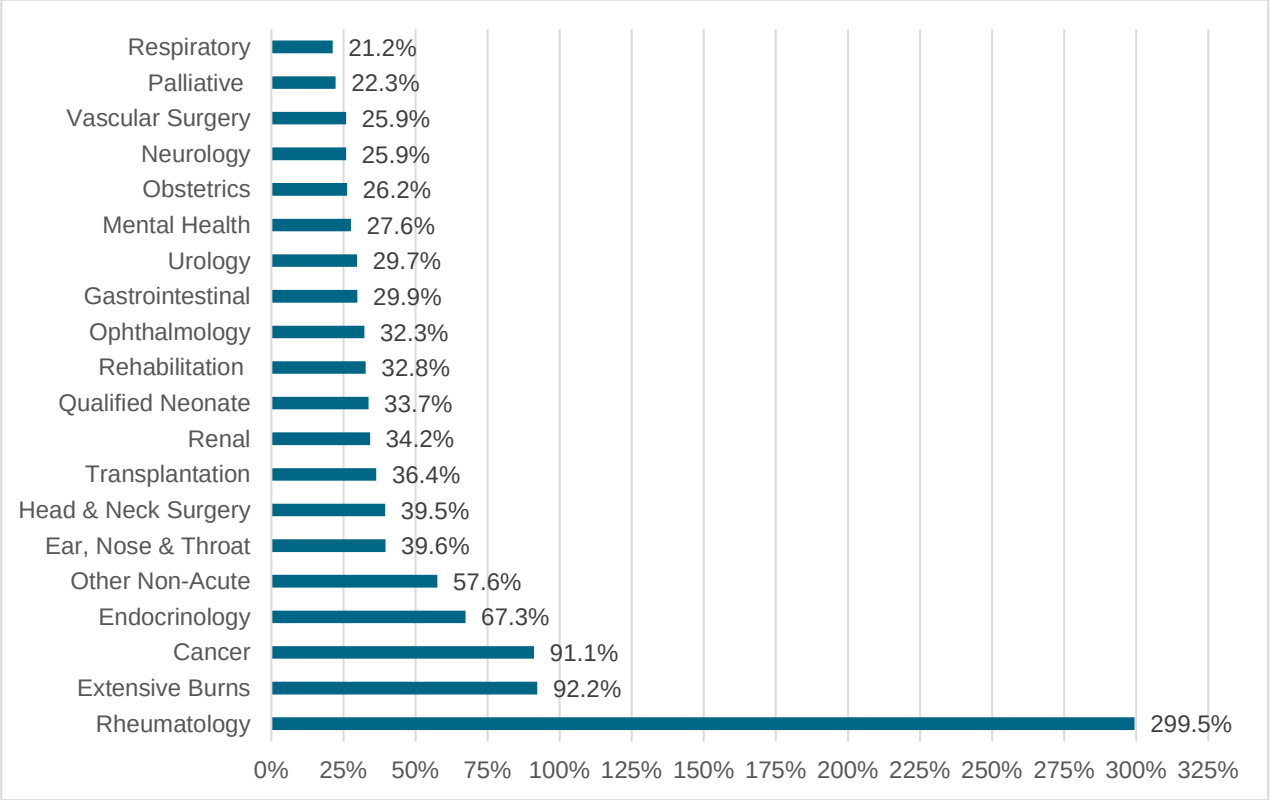
Figure 133: Top service related group, public and private hospital resident separations, 2013-14 to 2017-18



Source: Queensland Health Admitted Patient Data Collection, QHAPDC, 2018

Rheumatology was the fastest growing service related group for residents admitted to hospital increasing 299.5 per cent between 2013-14 and 2017-18. The next fastest growing areas were extensive burns (92.2 percent), cancer (91.1 per cent), and endocrinology (67.3 per cent).

Figure 134: Top service related groups, percentage growth in separations, public and private hospitals, 2013-14 to 2017-18



Source: Queensland Health Admitted Patient Data Collection, QHAPDC, 2018

Relative utilisation of admitted services

Relative utilisation is the ratio of the number of admissions to hospital for residents of a region (regardless of where they were admitted) to the expected number of admissions for those residents based on state admission rates. The state average is reflected as a score of 100. Relative utilisation is adjusted for age and sex and is impacted by many local factors such as:

- models of care or treatment method
- public and private service availability and accessibility
- local disease rates
- socioeconomic status of residents
- local admission policies.

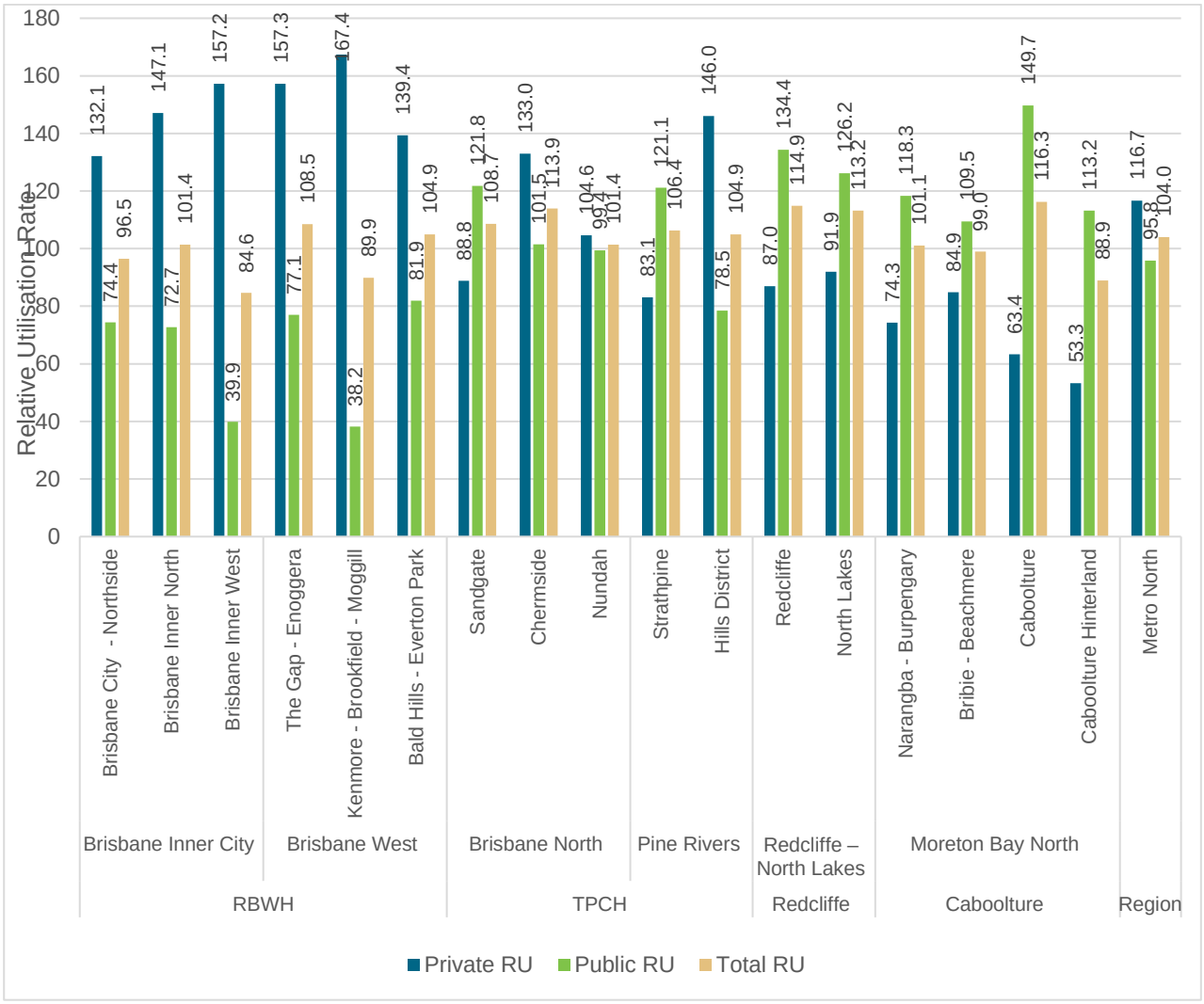
In the region, overall relative utilisation rates for adult and child residents at public and private hospitals are slightly higher than the Queensland average, with a relative utilisation rate of 104. Within the region, overall relative utilisation rates were highest for residents of the Redcliffe – North Lakes sub region (114.1) followed by residents of the Brisbane North sub region (109.3).

Relative utilisation of public hospital services was highest in the Redcliffe – North Lakes sub region (130.3), followed by the Moreton Bay North sub region (127.2). This is likely to be due to limited access to private hospital facilities and the presence of public hospital facilities in these areas. These areas also rated the lowest for socioeconomic disadvantage in the region.

Relative utilisation of private hospital services was highest in the Brisbane West sub region (155.3), followed by the Brisbane Inner City sub region (148.9). This is likely to be due to higher private health insurance rates and greater access to private hospital facilities in these areas.

Relative utilisation rates for all sub regions can be seen in Figure 135.

Figure 135: Relative utilisation[212] of private and public hospital services by sub region and hospital catchment, 2016-17



Source: Metro North Hospital and Health Service, QHAPDC, Metro North - HHS Cross Section (16-17 ASGS_2011 Base), 2018

Overall hospital relative utilisation rates differ when comparing children to adults. Overall relative utilisation rates for residents of the region are similar for children at 104.2 compared to adults at 104.0. This is shown in Table 27.

Children residing in Redcliffe – North Lakes sub region (RU=112.1) and Brisbane North (RU=111.0) had the highest relative utilisation in the region while children residing in Redcliffe – North Lakes sub region (RU=119.7) and Moreton Bay North (RU=119.4) were more likely to utilise public servicers than private hospital services. At the SA3 level children residing in Strathpine SA3 (RU =122.1) and Caboolture SA3 (RU=123.4) had the highest relative utilisation. Children residing in Brisbane Inner City had the lowest overall RU (93.4) and had the highest private RU rate (195.7) compared to public RU (66.1).

Adults residing in Redcliffe – North Lakes sub region (RU=114.3) and Brisbane North (RU=109.2) had the highest relative utilisation in the region while adults residing in Redcliffe – North Lakes sub region (RU=131.7) and Moreton Bay North (RU=128.2) were more likely to utilise public servicers than private hospital services. At the SA3 level adult residing in Redcliffe SA3 (RU =116.0) and Caboolture SA3 (RU=115.5) had the highest relative utilisation.

[212] Relative utilisation rates exclude renal dialysis, diagnostic GI endoscopy, interventional cardiology, extensive burns, and transplantation due to a significant portion of this activity is delivered on a non-admitted basis, inconsistent admitted practices between facilities and/or Small numbers of separations for Queensland.

Table 27: Relative utilisation of private and public hospital services, adults and children, 2016-17

Catchment	Sub region	SA3	Private RU	Public RU	Total RU	Private RU	Public RU	Total RU
RBWH	Brisbane Inner City	Brisbane City - Northside	131.8	74.5	96.8	151.0	72.1	85.9
		Brisbane Inner North	145.6	72.2	101.6	196.6	78.2	98.8
		Brisbane Inner West	155.9	38.6	85.0	202.7	53.4	79.4
		Sub region total	147.6	58.3	93.7	195.7	66.1	88.7
	Brisbane West	The Gap - Enoggera	156.7	76.3	109.5	172.1	83.0	98.5
		Kenmore - Brookfield - Moggill	167.1	36.3	91.3	175.8	53.0	74.5
		Bald Hills - Everton Park	139.2	80.6	105.1	145.8	94.2	103.2
		Sub region total	154.9	64.2	102.0	166.0	75.7	91.4
TPCH	Brisbane North	Sandgate	88.6	121.2	107.6	95.7	127.3	121.8
		Chermside	132.6	101.7	114.4	146.3	99.2	107.4
		Nundah	104.8	99.3	101.5	98.9	100.3	100.0
		Sub region total	110.9	108.0	109.2	118.1	109.5	111.0
	Pine Rivers	Strathpine	83.9	119.4	104.8	65.5	134.1	122.1
		Hills District	145.2	78.2	106.0	163.6	80.5	95.0
		Sub region total	126.1	91.2	105.6	135.1	96.0	102.9
Redcliffe	Redcliffe – North Lakes	Redcliffe	87.6	137.1	116.0	65.5	105.7	98.7
		North Lakes	92.4	125.9	112.4	82.7	127.9	120.0
		Sub region total	89.8	131.7	114.3	76.3	119.7	112.1
Caboolture	Moreton Bay North	Narangba - Burpengary	74.9	120.2	101.4	60.8	105.9	98.0
		Bribie - Beachmere	85.6	110.0	99.2	48.5	102.9	93.4
		Caboolture	64.3	151.3	115.5	44.7	140.0	123.4
		Caboolture Hinterland	53.5	115.1	88.9	45.8	97.8	88.7
		Sub region total	72.6	128.2	104.8	51.5	119.4	107.6
Region total		Metro North total	116.6	95.5	104.2	119.8	99.0	102.6

Source: Metro North Hospital and Health Service, QHAPDC, Metro North - HHS Cross Section, 2018

Overall, residents of the region are higher than average users of mental health services (RU=146.5), rehabilitation (RU=137.6), thoracic surgery (RU=128.1) and renal medicine (RU=119.1). For adults relative utilisation was highest for mental health services (RU=147.5), rehabilitation (RU=137.7), renal medicine (RU=119.4), and plastic and reconstructive surgery (RU=118.8). For children relative utilisation was highest for thoracic surgery (RU=158.4), palliative care (RU=139.0), upper GIT surgery (RU=138.5), and vascular surgery (RU=127.3).

For adults relative utilisation was lowest for maxillo surgery (RU=68.3), other non-acute (RU=78.2), prolonged ventilation (RU=84.9), ear, nose and throat (RU=87.9) and non-subspecialty medicine (RU=88.4). For children relative utilisation was lowest for medical oncology (RU=62.0), cardiology (RU=73.1), mental health (RU=74.1), and cardiac surgery (RU=74.9).

Table 28 details the relative utilisation rates for the top 39 service related groups in the region.

Table 28: Relative utilisation[213] by service related groups and age group, public and private, 2016-17

Service Related Group	Adult RU (seps)	Child RU (seps)	Total RU (seps)
Mental Health	147.5 (29,718)	74.1 (217)	146.5 (29,935)
Rehabilitation (non-acute)	137.7 (21,791)	116.5 (134)	137.6 (21,925)
Thoracic Surgery	98.4 (568)	158.4 (901)	128.1 (1,469)
Renal Medicine	119.4 (4,068)	109.4 (96)	119.1 (4,164)
Plastic & Reconstructive Surgery	118.8 (11,701)	111.5 (298)	118.6 (11,999)
Colorectal Surgery	116.2 (3,329)	93.4 (65)	115.7 (3,394)
Dermatology	114.9 (1,710)	96 (220)	112.4 (1,930)
Qualified Neonate	0 ()	108.5 (3,814)	108.5 (3,814)
Gynaecology	108.4 (17,600)	120.6 (108)	108.5 (17,708)
Drug & Alcohol	108.7 (4,927)	78.3 (179)	107.3 (5,106)
Haematology	106.5 (11,364)	119.8 (343)	106.9 (11,707)
Cardiac Surgery	107.6 (919)	74.9 (21)	106.6 (940)
Immunology & Infections	108.7 (11,381)	80.8 (724)	106.5 (12,105)
Breast Surgery	106.6 (3,035)	84.1 (7)	106.5 (3,042)
Urology	105.8 (12,850)	99.9 (496)	105.5 (13,346)
Dentistry	104.4 (4,544)	107.6 (1,450)	105.1 (5,994)
Medical Oncology	105.7 (3,880)	62 (71)	104.4 (3,951)
Respiratory Medicine	99.7 (16,237)	105.7 (4,111)	100.9 (20,348)
Endocrinology	98.8 (4,450)	116.8 (658)	100.8 (5,108)
Gastroenterology	101 (6,432)	96.5 (919)	100.4 (7,351)
Head & Neck Surgery	101.1 (1,313)	85.7 (63)	100.3 (1,376)
Neurology	100.1 (15,058)	95.6 (684)	99.9 (15,742)
Haematological Surgery	97.9 (373)	116.1 (35)	99.2 (408)
Upper GIT Surgery	98.2 (6,498)	138.5 (68)	98.5 (6,566)
Neurosurgery	96.9 (4,136)	106.4 (813)	98.4 (4,949)
Geriatric Management (non-acute)	98.1 (903)	0 ()	98.1 (903)
Obstetrics	97.8 (22,750)	18.9 (1)	97.8 (22,751)
Rheumatology	97.6 (1,078)	93.9 (108)	97.3 (1,186)
Orthopaedics	96.3 (29,834)	103.9 (2,276)	96.8 (32,110)
Palliative (non-acute)	95.3 (1,885)	139 (65)	96.3 (1,950)
Ophthalmology	95.7 (15,898)	99.8 (354)	95.8 (16,252)
Vascular Surgery	94.5 (2,830)	127.3 (27)	94.7 (2,857)
Cardiology	94.1 (16,626)	73.1 (89)	93.9 (16,715)
Non Subspecialty Surgery	91 (22,452)	95.3 (2,530)	91.4 (24,982)
Non Subspecialty Medicine	88.4 (17,218)	118 (2,445)	91.2 (19,663)
Ear, Nose & Throat	87.9 (6,596)	90.1 (3,683)	88.6 (10,279)
Prolonged Ventilation	84.9 (345)	89.7 (17)	85.1 (362)
Other Non-Acute	78.2 (1,252)	97.2 (7)	78.3 (1,259)
Maxillo Surgery	68.3 (271)	92.8 (16)	69.4 (287)
Grand Total	104.2 (337,820)	102.6 (28,113)	104 (365,933)

Source: Metro North Hospital and Health Service, QHAPDC, Metro North - HHS Cross Section, 2018

[213] Relative utilisation rates exclude renal dialysis, diagnostic GI endoscopy, interventional cardiology, extensive burns, prolonged ventilation, and transplantation due to a significant portion of this activity is delivered on a non-admitted basis, inconsistent admitted practices between facilities and/or Small numbers of separations for Queensland.

Table 29 represents the service related groups and SA3s with the lowest relative utilisation rates for adult admitted hospital services across the Region. Geriatric management services within the RBWH catchment areas had the lowest RU rates in the region, followed by rehabilitation services within the Caboolture Hospital catchment.

Table 29: Lowest service related groups by total relative utilisation, public and private, adults, 2016-17

Catchment	Sub region	SA3	Service Related Group	Private RU	Public RU	Total RU
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Geriatric Management (non-acute)	-	20.5	20.5
RBWH	Brisbane Inner City	Brisbane City - Northside	Geriatric Management (non-acute)	-	20.7	20.7
RBWH	Brisbane Inner City	Brisbane Inner West	Geriatric Management (non-acute)	-	23.1	23.1
Caboolture	Moreton Bay - North	Caboolture Hinterland	Rehabilitation (non-acute)	21.0	45.5	27.8
RBWH	Brisbane Inner City	Brisbane Inner West	Prolonged Ventilation	143.0	19.4	31.9
RBWH	Brisbane West	The Gap - Enoggera	Prolonged Ventilation	82.5	26.6	32.9
Caboolture	Moreton Bay - North	Bribie - Beachmere	Rehabilitation (non-acute)	30.1	52.3	36.1
RBWH	Brisbane Inner City	Brisbane Inner West	Cardiology	124.3	23.8	39.3
RBWH	Brisbane Inner City	Brisbane City - Northside	Obstetrics	92.5	29.6	40.6
TPCH	Brisbane North	Nundah	Other Non-Acute	19.2	43.1	41.2
TPCH	Pine Rivers	Hills District	Other Non-Acute	24.8	42.6	41.2
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Prolonged Ventilation	118.6	31.5	41.8
Caboolture	Moreton Bay - North	Caboolture Hinterland	Mental Health	18.4	79.7	42.3
Redcliffe	Redcliffe - North Lakes	North Lakes	Maxillo Surgery	31.5	54.5	43.8
TPCH	Pine Rivers	Strathpine	Maxillo Surgery	13.4	71.7	44.1
TPCH	Brisbane North	Bald Hills - Everton Park	Other Non-Acute	74.0	42.3	44.9
RBWH	Brisbane Inner City	Brisbane Inner West	Upper GIT Surgery	75.6	23.4	46.5
RBWH	Brisbane Inner City	Brisbane Inner West	Obstetrics	116.7	33.3	48.0
RBWH	Brisbane West	The Gap - Enoggera	Maxillo Surgery	30.2	64.2	48.0
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Cardiology	150.4	27.8	48.6
Caboolture	Moreton Bay - North	Caboolture Hinterland	Drug & Alcohol	6.5	70.1	53.2
TPCH	Brisbane North	Nundah	Haematological Surgery	63.2	46.0	53.3
TPCH	Brisbane North	Sandgate	Haematological Surgery	47.1	58.1	53.3
RBWH	Brisbane Inner City	Brisbane Inner West	Non Subspecialty Surgery	150.7	28.7	54.3
Redcliffe	Redcliffe - North Lakes	North Lakes	Prolonged Ventilation	74.1	53.1	55.3
Caboolture	Moreton Bay - North	Caboolture	Rehabilitation (non-acute)	38.1	101.4	55.8
Caboolture	Moreton Bay - North	Bribie - Beachmere	Maxillo Surgery	41.0	78.3	56.3
Caboolture	Moreton Bay - North	Bribie - Beachmere	Palliative (non-acute)	37.3	61.3	58.0
RBWH	Brisbane Inner City	Brisbane City - Northside	Neurosurgery	72.8	49.2	58.1
TPCH	Brisbane North	Bald Hills - Everton Park	Prolonged Ventilation	-	66.7	58.8
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Other Non-Acute	148.8	51.1	58.9
RBWH	Brisbane Inner City	Brisbane Inner West	Other Non-Acute	148.5	51.4	59.3
Redcliffe	Redcliffe - North Lakes	Redcliffe	Maxillo Surgery	48.1	72.1	59.4
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Maxillo Surgery	74.2	44.7	59.9
Caboolture	Moreton Bay - North	Bribie - Beachmere	Other Non-Acute	10.9	64.5	60.3
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Dermatology	145.2	27.7	60.9
Caboolture	Moreton Bay - North	Bribie - Beachmere	Dermatology	43.3	68.8	61.4
RBWH	Brisbane Inner City	Brisbane City - Northside	Upper GIT Surgery	59.2	63.1	61.4
RBWH	Brisbane Inner City	Brisbane Inner West	Gastroenterology	182.6	31.1	61.7
RBWH	Brisbane Inner City	Brisbane Inner North	Maxillo Surgery	80.7	46.7	61.9
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Non Subspecialty Surgery	156.2	33.0	62.0
RBWH	Brisbane Inner City	Brisbane Inner North	Geriatric Management (non-acute)	-	62.1	62.1
Caboolture	Moreton Bay - North	Caboolture Hinterland	Other Non-Acute	-	67.7	62.6
RBWH	Brisbane Inner City	Brisbane Inner North	Cardiology	101.2	55.9	63.0
Caboolture	Moreton Bay - North	Narangba - Burpengary	Maxillo Surgery	31.7	94.2	63.1
RBWH	Brisbane Inner City	Brisbane Inner West	Thoracic Surgery	140.1	16.4	63.2
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Obstetrics	164.1	42.1	63.6
TPCH	Pine Rivers	Hills District	Prolonged Ventilation	103.5	58.9	63.7
RBWH	Brisbane Inner City	Brisbane Inner West	Endocrinology	136.5	32.1	63.9
Caboolture	Moreton Bay - North	Narangba - Burpengary	Rehabilitation (non-acute)	52.5	93.6	64.0

Source: Metro North Hospital and Health Service, QHAPDC, Metro North - HHS Cross Section, 2018

Table 30 represents the service related groups and SA3s with the lowest relative utilisation rates for children admitted hospital services across the Region. Medical oncology services within the TPCH and Redcliffe Hospital catchment areas had the lowest RU rates in the region, followed by rehabilitation services within the Caboolture and Redcliffe Hospital catchments.

Table 30: Lowest service related groups by total relative utilisation, public and private, Children, 2016-17

Catchment	Sub region	SA3	Service Related Group	Private RU	Public RU	Total RU
TPCH	Pine Rivers	Hills District	Medical Oncology	-	8.2	8.2
Redcliffe	Redcliffe - North Lakes	North Lakes	Medical Oncology	-	9.2	9.1
Caboolture	Moreton Bay - North	Caboolture	Rehabilitation (non-acute)	-	11.0	9.6
Redcliffe	Redcliffe - North Lakes	Redcliffe	Rehabilitation (non-acute)	-	17.7	15.4
TPCH	Pine Rivers	Strathpine	Cardiology	-	19.1	18.8
TPCH	Brisbane North	Nundah	Mental Health	-	19.3	19.3
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Renal Medicine	-	22.6	21.2
Redcliffe	Redcliffe - North Lakes	Redcliffe	Drug & Alcohol	-	23.3	23.2
RBWH	Brisbane Inner City	Brisbane Inner West	Medical Oncology	1,761.9	11.8	23.4
Redcliffe	Redcliffe - North Lakes	Redcliffe	Mental Health	-	24.2	24.1
Caboolture	Moreton Bay - North	Caboolture Hinterland	Haematology	-	26.4	25.5
TPCH	Brisbane North	Bald Hills - Everton Park	Renal Medicine	-	28.4	26.6
TPCH	Brisbane North	Sandgate	Rehabilitation (non-acute)	109.0	16.5	28.7
RBWH	Brisbane Inner City	Brisbane Inner West	Renal Medicine	243.4	16.3	30.5
TPCH	Pine Rivers	Hills District	Haematological Surgery	-	37.7	31.1
RBWH	Brisbane Inner City	Brisbane Inner North	Renal Medicine	253.7	17.0	31.8
RBWH	Brisbane Inner City	Brisbane City - Northside	Immunology & Infections	201.1	26.2	33.5
Redcliffe	Redcliffe - North Lakes	North Lakes	Cardiac Surgery		37.4	37.4
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Qualified Neonate	79.2	31.2	37.6
RBWH	Brisbane West	The Gap - Enoggera	Dermatology	159.2	17.7	38.0
TPCH	Brisbane North	Nundah	Head & Neck Surgery	86.5	-	38.4
Caboolture	Moreton Bay - North	Caboolture	Medical Oncology	-	38.7	38.4
RBWH	Brisbane Inner City	Brisbane Inner West	Colorectal Surgery	217.2	-	38.5
Caboolture	Moreton Bay - North	Caboolture Hinterland	Endocrinology	165.8	28.0	38.7
RBWH	Brisbane Inner City	Brisbane City - Northside	Endocrinology	340.9	14.4	39.8
TPCH	Pine Rivers	Strathpine	Drug & Alcohol	-	40.4	40.1
Redcliffe	Redcliffe - North Lakes	Redcliffe	Renal Medicine	-	43.1	40.4
TPCH	Brisbane North	Bald Hills - Everton Park	Medical Oncology	-	40.9	40.6
TPCH	Pine Rivers	Hills District	Rheumatology	-	42.5	40.7
RBWH	Brisbane Inner City	Brisbane Inner West	Dermatology	204.1	13.6	40.9
Caboolture	Moreton Bay - North	Bribie - Beachmere	Ophthalmology	-	55.3	41.5
TPCH	Pine Rivers	Hills District	Haematology	205.8	37.2	42.5
Caboolture	Moreton Bay - North	Narangba - Burpengary	Cardiac Surgery		43.0	43.0
RBWH	Brisbane Inner City	Brisbane Inner West	Cardiology	-	44.6	43.9
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Urology	81.3	33.8	44.7
Caboolture	Moreton Bay - North	Caboolture	Upper GIT Surgery	-	51.1	44.8
RBWH	Brisbane Inner City	Brisbane Inner West	Neurology	139.4	40.9	44.9
RBWH	Brisbane West	The Gap - Enoggera	Medical Oncology	-	45.9	45.6
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Cardiology	-	46.6	45.9
RBWH	Brisbane Inner City	Brisbane City - Northside	Ear, Nose & Throat	53.6	41.3	46.0
RBWH	Brisbane Inner City	Brisbane Inner West	Immunology & Infections	322.7	34.3	46.3
RBWH	Brisbane Inner City	Brisbane Inner West	Rheumatology	282.2	36.4	46.5
RBWH	Brisbane West	The Gap - Enoggera	Immunology & Infections	46.6	46.6	46.6
TPCH	Brisbane North	Chermside	Rheumatology	-	50.0	47.9
RBWH	Brisbane Inner City	Brisbane City - Northside	Non Subspecialty Surgery	26.1	50.9	48.2
TPCH	Brisbane North	Chermside	Cardiac Surgery		49.3	49.3
TPCH	Brisbane North	Nundah	Drug & Alcohol	-	49.7	49.3
RBWH	Brisbane West	Kenmore - Brookfield - Moggill	Neurology	258.5	40.7	49.5
Caboolture	Moreton Bay - North	Bribie - Beachmere	Head & Neck Surgery	112.8	-	50.0
Caboolture	Moreton Bay - North	Bribie - Beachmere	Mental Health	-	50.4	50.2
Caboolture	Moreton Bay - North	Bribie - Beachmere	Haematology	-	53.1	51.4
Caboolture	Moreton Bay - North	Narangba - Burpengary	Colorectal Surgery	-	63.1	51.9

Source: Metro North Hospital and Health Service, QHAPDC, Metro North - HHS Cross Section, 2018

Hospital access and patient flows

Self-sufficiency is an indicator of the local accessibility of health services. Self-sufficiency rates are used to describe the degree to which the population in a catchment area depends on a local facility. It is one way of estimating how well the facility meets the catchment's health service needs. Self-sufficiency can be influenced by the level of service available at the local hospital, referral patterns between health service providers such as general practice and private specialist referrals, and natural patient flow patterns due to travel time and cost of travel for the patient and preference. The region's capacity to meet public demand for hospital services arising from its residents is high with overall self-sufficiency rates 87.6 per cent in 2017-18. Self-sufficiency rates differ for adults and children with child self-sufficiency rates 72.4 per cent[214] compared to 91.3 per cent for adults. This is due to the primary children's hospital being located in Brisbane South requiring patients with more complex needs to travel out of the region for care.

Self-sufficiency rates differ at a local hospital catchment level with residents from all catchments likely to flow to the regions primary tertiary hospital RBWH and to a lesser extent TPCH for more complex services. Over 65 per cent of adult residents of Brisbane Inner City (71.7 per cent) and Brisbane West (66.3 per cent) are primarily treated at their local hospital (RBWH). Residents of Brisbane North (46.4 per cent) and Pine Rivers (43.5 per cent) are less likely to be treated at their local hospital, TPCH.

In the north of the region residents are more likely to have to travel for their health care. Of the residents of the Moreton Bay – North sub region, 45.1 per cent travel to facilities outside of their local catchment, while 54.1 per cent of residents of the Moreton Bay – North sub region are primarily treated at Caboolture Hospital or Kilcoy Hospital. 14.3 per cent of the region's residents are treated at RBWH and 14.5 per cent are treated at Redcliffe Hospital. For residents of Redcliffe – North Lakes, 58.9 per cent are primarily treated at Redcliffe Hospital while 15.8 per cent are treated at RBWH and 12.6 per cent are treated at TPCH.

Adult residents of Brisbane West (19.5 per cent) and Brisbane Inner City (16.3 per cent) were most likely to receive public hospital treatment outside of the region. Child residents of Pine Rivers (38.4 per cent), Brisbane North (36.0 per cent), Redcliffe – North Lakes (32.0 per cent) and Moreton Bay – North (27.8 per cent) were most likely to receive public hospital treatment outside of the region.

[214] Queensland Children's Hospital is classified as the local hospital for RBWH child residents and is therefore included in self-sufficiency calculations.

Table 31: Self-sufficiency rates, public hospitals, 2017-18[215]

	Region	Catchment	CABOOLTURE HOSPITAL	KILCOY HOSPITAL	REDCLIFFE HOSPITAL	RBWH	TPCH	Out of region	Total Self Sufficiency
Adult	Moreton Bay - North	Caboolture	51.6%	1.8%	15.3%	15.9%	7.4%	8.0%	92.0%
	Redcliffe - North Lakes	Redcliffe	3.7%	0.1%	60.9%	17.2%	12.5%	5.6%	94.4%
	Brisbane Inner City	RBWH	0.2%	0.0%	0.9%	71.7%	10.8%	16.3%	83.7%
	Brisbane West	RBWH	0.2%	0.0%	0.7%	66.3%	13.3%	19.5%	80.5%
	Brisbane North	TPCH	0.3%	0.0%	6.7%	38.6%	48.2%	6.2%	93.8%
	Pine Rivers	TPCH	1.5%	0.0%	10.2%	37.5%	44.1%	6.7%	93.3%
Adult Total			13.2%	0.4%	20.1%	33.9%	23.6%	8.7%	91.3%
Child	Moreton Bay - North	Caboolture	59.5%	0.6%	8.0%	1.4%	2.7%	27.8%	72.2%
	Redcliffe - North Lakes	Redcliffe	8.2%	0.0%	42.2%	4.2%	13.3%	32.0%	68.0%
	Brisbane Inner City	RBWH	0.2%	0.0%	0.1%	77.0%	18.2%	4.7%	95.3%
	Brisbane West	RBWH	0.1%	0.0%	0.1%	82.7%	13.1%	4.0%	96.0%
	Brisbane North	TPCH	0.2%	0.0%	2.8%	14.5%	46.4%	36.0%	64.0%
	Pine Rivers	TPCH	2.0%	0.0%	5.3%	10.8%	43.5%	38.4%	61.6%
Child Total			15.0%	0.1%	11.7%	21.9%	23.7%	27.6%	72.4%
Total	Moreton Bay - North	Caboolture	52.5%	1.6%	14.5%	14.3%	6.9%	10.2%	89.8%
	Redcliffe - North Lakes	Redcliffe	4.2%	0.1%	58.9%	15.8%	12.6%	8.4%	91.6%
	Brisbane Inner City	RBWH	0.2%	0.0%	0.8%	72.2%	11.5%	15.2%	84.8%
	Brisbane West	RBWH	0.2%	0.0%	0.6%	68.7%	13.3%	17.2%	82.8%
	Brisbane North	TPCH	0.3%	0.0%	6.2%	35.8%	48.0%	9.7%	90.3%
	Pine Rivers	TPCH	1.6%	0.0%	9.5%	33.7%	44.1%	11.3%	88.7%
Grand Total			13.4%	0.4%	19.1%	31.0%	23.7%	12.4%	87.6%

Source: Metro North Hospital and Health Service, Decision Support System, 2019

Hospital non-admitted service events

Non-admitted (outpatient) data presented in the section is for the period of July 2013 to June 2016, and includes:

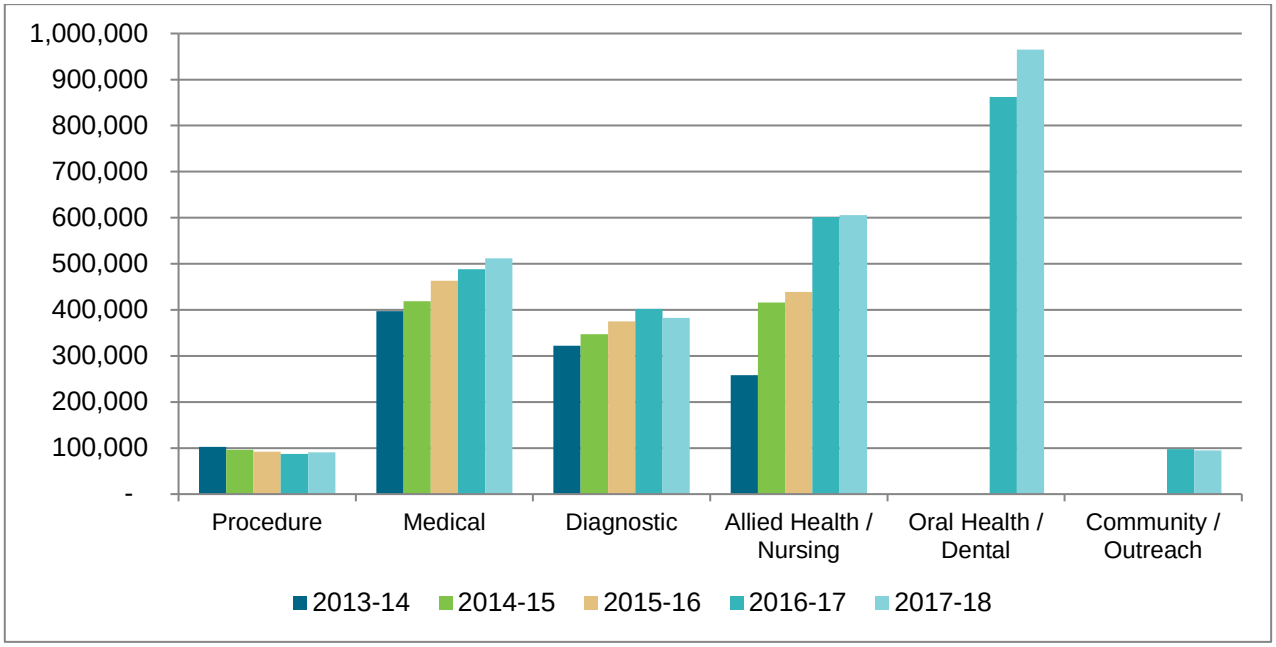
- Caboolture Hospital
- Kilcoy Hospital
- Redcliffe Hospital
- Royal Brisbane and Women's Hospital
- The Prince Charles Hospital
- Community and Oral Health Directorate

[215] Note: Queensland Children's Hospital is classified as the local hospital for RBWH child residents and is therefore included in self-sufficiency calculations.

The Independent Hospital Pricing Authority (IHPA) Tier 2 classification system categorises each service event into a particular clinic based on the nature of the interaction, the clinical area and type of provider. Service events not classified against a Tier 2 clinic have been excluded from the analysis.

In 2017-18, there were approximately 2,650,000 non-admitted service events in Metro North HHS facilities. Medical consultations and allied health/nursing non-admitted service events, contribute 42 per cent of all non-admitted service events in the region's public hospitals while oral health/dental and diagnostic services contribute 36.4 per cent and 14.4 per cent respectively.

Figure 136: Number of outpatient service events by clinic group, 2013-14 to 2017-18



Source: Metro North Hospital and Health Service, Decision Support System, 2019

RBWH (36.2 per cent) and Community and Oral Health Directorate (37.9 per cent) provided the highest non-admitted service events in 2017-18. COHD non-admitted activity was predominantly limited to the oral health services.

Table 32: Proportion of non-admitted service events by hospital and clinic type, 2017-18

Facility	Procedure	Medical	Diagnostic	Allied Health	Dental / Oral Health	Community / Outreach	Total
Caboolture Hospital	3,885	37,213	37,350	59,868			138,316
Redcliffe Hospital	8,670	76,504	66,605	84,300			236,079
RBWH	64,969	296,667	155,274	257,529	132,710	52,206	959,355
TPCH	13,231	100,647	123,058	74,149			311,085
Kilcoy Hospital	-	-	444	387			831
Community and Oral Health Directorate	-	1,189		129,350	832,045	43,031	1,005,615
Grand Total	90,755	512,220	382,731	605,583	964,755	95,237	2,651,281

Source: Metro North Hospital and Health Service, Decision Support System, 2019

Home and residential aged care

The Australian population is an ageing population, with almost 15 per cent of the population in 2017 aged 65 years and over[216]. In the region, 14 per cent of the population is aged 65 years and over, a total of over 140,000 people. This number has increased from 107,000 people in 2010, and the trend looks set to continue. People are also living longer, with an average life expectancy in the region of 83 years for females and 80 years for males.

One challenge of an ageing population is to ensure that people remain healthy as they age. Ageing is generally typified by an increasing burden of disease, which is tied to higher usage of the health system[217]. Therefore, maintaining good health is important to reducing the disease burden and ensuring a better quality of life for older people. Another challenge is to ensure that people have appropriate assistance and care available to them as they age.

Aged care in Australia is delivered across a continuum of care, consisting of a range of options that are designed to meet individual care needs[218]. There are two main types of aged care available for people across the continuum of care; community based aged care and residential aged care.

There are two main community-based aged care programs that deliver care:

- The Commonwealth Home Support Programme (CHSP) – provides entry level assistance and support to enable people to live independently at home
- Home Care Packages Programme – provides coordinated care at home for people who have more complex care requirements[219].

Residential aged care is the provision of care and accommodation for older people who are no longer able to live independently in their own homes[220]. In a residential aged care setting, care and assistance is provided so individual patient needs can be met. There are two main types of residential care:

- permanent care – ongoing accommodation and care for an individual
- respite care – temporary, short term care.

This section analyses the delivery of residential and community-based aged care in the region and estimates the unmet care needs of people who require aged care assistance. This section also analyses the health system usage of people within the aged care system, through primary care attendances and hospital admissions. Data is reported as of June 2016. Policy changes in aged care, which have taken effect since July 2015, have changed the way that aged care is delivered in the region, so that the estimates of unmet need may also have changed.

Supported assistance to aged care

In May 2015, the Department of Social Services and Australian Bureau of Statistics estimated the proportion of the population aged 65 years and older, who required assistance with a range of activities and did not have these needs met[221].These activities are:

- mobility
- self-care
- communication
- cognition/emotion
- healthcare
- household chores
- meal preparation
- property maintenance

[216] (Australian Bureau of Statistics, 2015)
[217] (Queensland Health, 2014)
[218] (Australian Institute of Health and Welfare, 2015; Department of Health, 2016)
[219] (Australian Institute of Health and Welfare, 2016, Department of Health, 2016)
[220] (Department of Health, 2016)
221 These estimates have been based on the Survey of Disability and Carers 2012 and these estimates may have changed with recent reforms to aged care. The population referred to in these estimates is all people aged 65 years and over living in households.

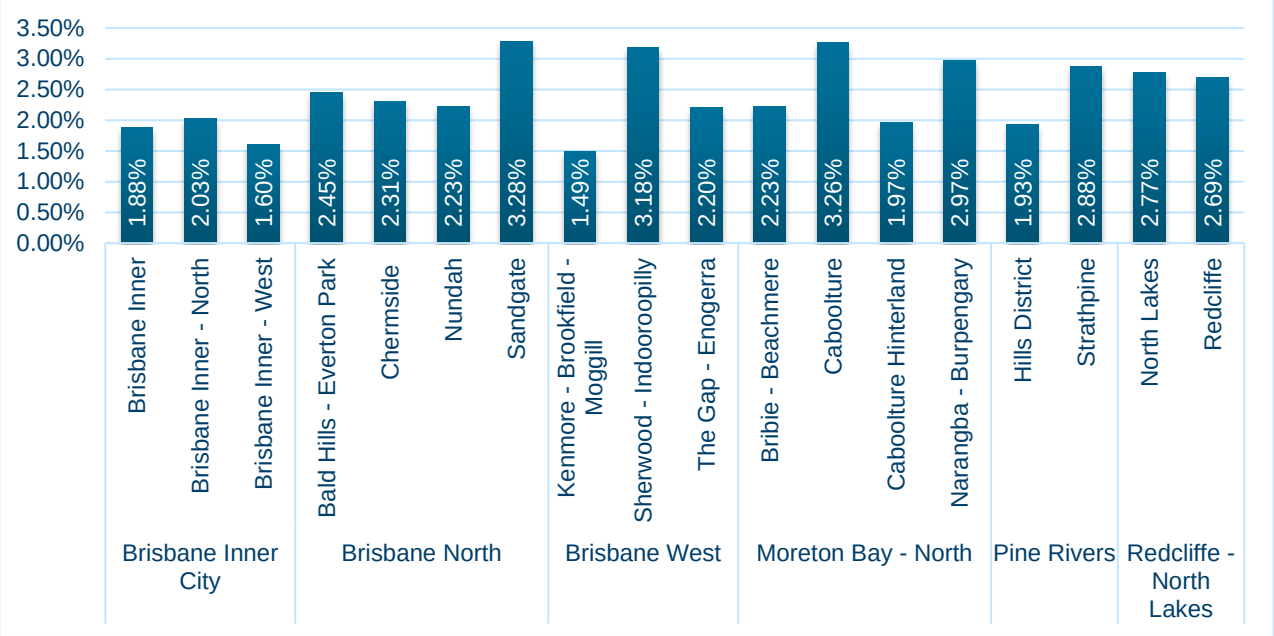
- reading/writing
- private transport.

The reasons that people considered their needs to be unmet included:

- a service or services were not available
- the person was unable to arrange the service
- the service costs too much
- the service does not provide sufficient hours.

In the region, the proportion of the population aged 65 years and over who have unmet needs for one to four activities ranges from 1.5 per cent of the population in the Kenmore - Brookfield - Moggill SA3 to 3.3 per cent of the population in the Sandgate and Caboolture sa3. This is highlighted in Figure 137.

Figure 137: Estimates of unmet need for assistance for 1-4 activities, people aged 65 years and over, statistical area level three and sub region



Source: Department of Social Services and Australian Bureau of Statistics, 2015

The highest proportion of people who have unmet needs for assistance reside in the northern areas of the region, particularly in the Moreton Bay North and Redcliffe – North Lakes sub regions. This may be linked to a lower number of services and a large population aged 65 years and over. Lower incomes of people who require assistance in areas, including Caboolture, Redcliffe and Narangba – Burpengary, may be also contributing to unmet needs due to lack of affordable services in these areas.

Within the region, there is also a proportion of people who require assistance for five or more activities, who have not had their needs met. This ranges from just under one per cent of the population aged 65 years and over residing in the Strathpine SA3 (0.83 per cent) to 1.3 per cent of the population aged 65 years and over residing in the Nundah SA3, as illustrated in Figure 138.

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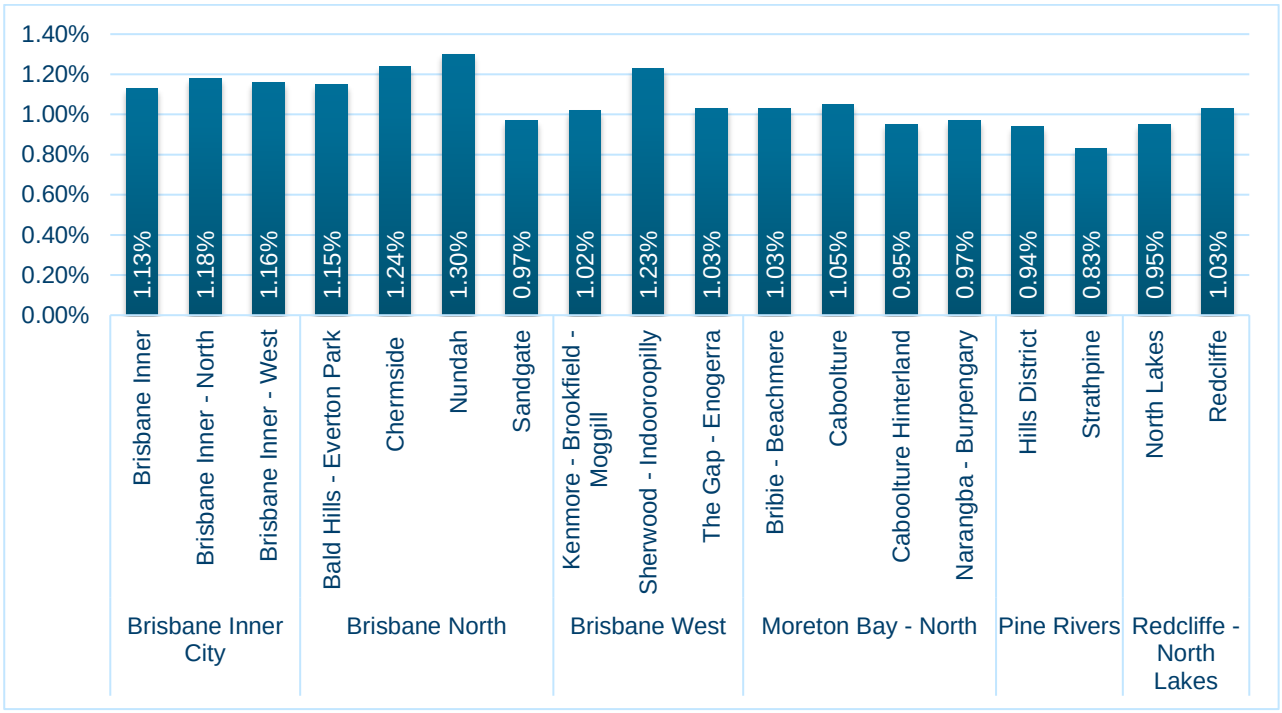
Figure 138: Estimates of unmet need for assistance for five or more activities, people aged 65 years and over, statistical area level three and sub region



Source: Department of Social Services and Australian Bureau of Statistics, 2015

While the overall proportion of people aged 65 years and over requiring assistance with five or more activities with unmet needs is quite low, overall estimates of unmet needs indicate that almost five per cent of the population aged 65 years and over in Caboolture and Sherwood - Indooroopilly have unmet needs for assistance.

Aged care places – Home Care Packages Programme

The Home Care Packages Programme provides individually tailored support to people aged 65 years and over to remain living independently at home[222]. There are four levels of packages available which are based on the amount of care and services provided to an individual.

As of June 2016, there were a total of 2712 operational home care places in the region[223], representing 28 home care places per 1000 people aged 65 years and over. This is higher than the Queensland rate of 23 home care places per 1000 people aged 65 years and over[224].

Within the region, the number of home care places varied from zero places in the Hills District to 360 places in the Caboolture statistical area. The Brisbane Inner statistical area is well serviced by home care places when compared to other SA3s, with 53 home care places per 1000 people. The Nundah statistical area also had a high number of home care places per 1000 people as shown in

[222] (Department of Health, 2016)

[223] Home care places that were allocated but not operational have been excluded.

[224] (Department of Health, 2016)

Table 33. By comparison, although over one third of the region's population aged 65 years and over live in the Redcliffe, Kenmore – Brookfield - Moggill, Bald Hills - Everton Park, Hills District and Narangba – Burpengary SA3s, these areas are underserviced by home care places.

Table 33: Home care places and rate per 1000 people aged 65 years and over, 2016

Sub region	Statistical area level three	Home care places	Number of home care places per 1000 people
Brisbane Inner City	Brisbane Inner	200	53
	Brisbane Inner - West	180	19
	Brisbane Inner - North	296	52
Brisbane North	Bald Hills - Everton Park	0	0
	Chermside	356	32
	Nundah	230	45
	Sandgate	120	13
Brisbane West	Kenmore - Brookfield - Moggill	67	9
	Sherwood - Indooroopilly	86	23
	The Gap - Enoggera	95	13
Moreton Bay North	Bribie - Beachmere	120	10
	Caboolture	395	41
	Caboolture Hinterland	58	23
	Narangba - Burpengary	0	0
Pine Rivers	Hills District	0	0
	Strathpine	65	13
Redcliffe – North Lakes	North Lakes	259	34
	Redcliffe	185	13
	Total region	**2712**	**28**

Source: Commonwealth Department of Health, 2016a

Aged care places - Residential aged care

Residential aged care places are more common than home care places in the region, with 2.7 residential aged care places to every home care place. As of June 2016, there were a total of 7113 residential aged care places in the region, representing 73 residential aged care places per 1000 people in the region. This is more than the Queensland rate of 57 residential aged care places per 1000 people[225].

Within the region the number of residential aged care places varies from 1002 in the Redcliffe SA3 to 60 in the Sherwood – Indooroopilly SA3, as highlighted in Table 34. The Brisbane Inner and Sandgate areas are well serviced with residential aged care places, with a rate of 92 and 89 places per 1000 people aged 65 years and over respectively. By contrast, the Bribie – Beachmere and Hills District SA3s have a low number of residential aged care places per capita, with 19 and 16 places per 1000 people aged 65 years and over respectively. The low number of overall aged care places in the Bribie – Beachmere statistical area is of concern, particularly as over 40 per cent of the population in this area is aged 65 years and over.

[225] (Department of Health, 2016)

Table 34: Residential aged care places and rate per 1000 people aged 65 years and over, 2016

Sub region	Statistical area level three	Residential care places	Number of places per 1000 people
Brisbane Inner City	Brisbane Inner	347	92
	Brisbane Inner - North	335	35
	Brisbane Inner - West	188	33
Brisbane North	Bald Hills - Everton Park	324	46
	Chermside	440	40
	Nundah	304	60
	Sandgate	811	89
Brisbane West	Kenmore - Brookfield - Moggill	537	72
	Sherwood - Indooroopilly	60	16
	The Gap - Enoggera	533	72
Moreton Bay North	Bribie - Beachmere	227	19
	Caboolture	766	79
	Caboolture Hinterland	115	47
	Narangba - Burpengary	375	42
Pine Rivers	Hills District	170	16
	Strathpine	198	39
Redcliffe – North Lakes	North Lakes	381	50
	Redcliffe	1002	71
	Total region	**7113**	**73**

Source: Commonwealth Department of Health, 2016a

GP attendances to residential aged care

In 2016-17 there was an average of 17.3 GP attendances to aged care facilities per person in the region[226][227]. This was higher than the national average of 16.6 GP attendances to aged care facilities per person. Between 2013-14 and 2016-17, the average number of GP aged care attendances per person increased by 15 per cent (14.9 to 17.3), compared to an increase of 13.6 per cent nationally (14.5 to 16.6).

Figure 139: Average number of GP attendances to aged care facilities per person, Region and Australia, 2013-14 to 2016-17

Source: (Australian Institute of Health and Welfare, 2018)

[226] Crude rate
[227] (Australian Institute of Health and Welfare, 2018)

Health workforce

A properly trained and adequately sized workforce is critical to respond to the health needs of a population. Workforce shortages can lead to access issues, particularly among population groups that may already be vulnerable. This section analyses the registered health workforce in the region, within the context of existing health needs. This section breaks down the number, FTE rate and trends over time for health practitioners in the region. Due to changes in data source and reporting methods, FTE rates presented in this chapter are not comparable with previous reports authored by Brisbane North PHN and the Metro North Hospital and Health Service.

Overall, the region is relatively well serviced by health professionals. However, there is some disparity within the region, particularly among GPs, psychologists and specialists. The GP workforce is an ageing workforce, particularly in the Kenmore – Brookfield – Moggill, Caboolture Hinterland and Sandgate areas, where over half of the registered GP workforce are 55 years of age and over. There are also a low proportion of younger GPs across the region.

GPs in the northern areas of the region are more likely to work longer hours. This is associated with fewer GPs trying to meet higher need in areas such as Caboolture, Bribie – Beachmere and Redcliffe. The high GP workload in these areas is also associated with districts of workforce shortage.

Psychologists are not equally distributed throughout the region. Psychologists tend to be centrally located, contributing to access issues for people in Redcliffe, Narangba – Burpengary and Bribie–Beachmere, where there is a higher need for mental health services and low accessibility. There is also a slight association with the number of psychologists and average hours worked.

Allied health services as a whole tend to be lacking in the northern areas of the region, reinforcing service access issues. Distribution patterns for specialists are similar to psychologists; however the workload of specialists is of concern.

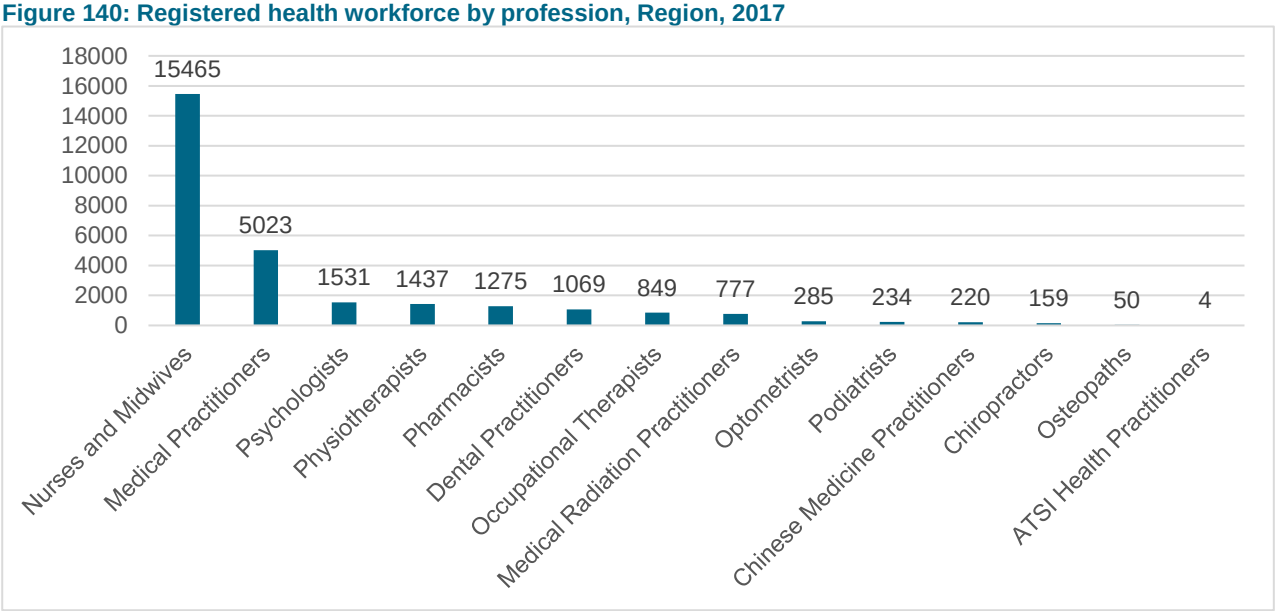
Total practitioners

In 2017, there were an estimated 28,385[228] registered health practitioners in the region. Nurses and midwives were the most common profession, comprising 54.5 per cent of the registered health workforce (15,465 people). This was followed by medical practitioners[229] (17.7 per cent of the workforce or 5023 people) and psychologists (5.3 per cent of the workforce or 1531 people).

The registered health workforce by main profession can be seen in Figure 140.

[228] This figure may be an overestimate, as some people may be registered in more than one profession.
[229] This figure includes, but is not limited to, general practitioners.

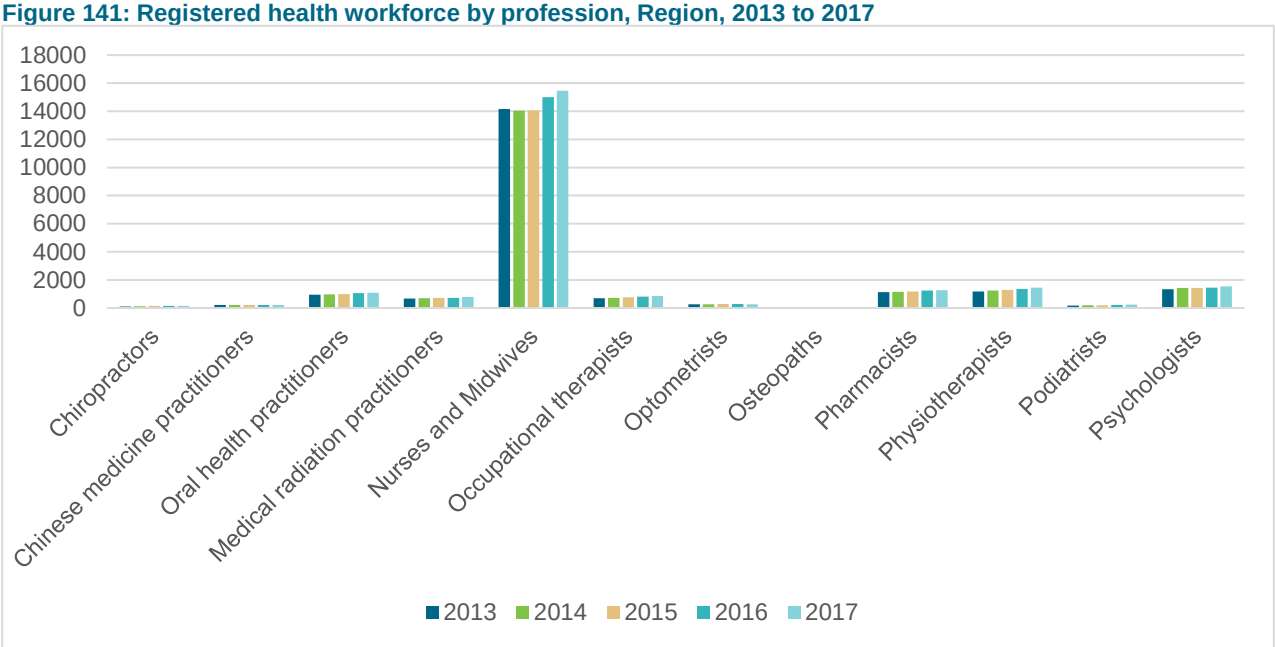
Figure 140: Registered health workforce by profession, Region, 2017



Source: (Department of Health, 2019)

Between 2013 and 2017, the number of health practitioners in the region increased across all professions[230]. There were large proportional increases in the number of osteopaths, podiatrists and chiropractors in the region. This was contrasted by modest proportional increases in the number of Chinese medicine practitioners and optometrists. Trends for health practitioners in the region can be seen in Figure 141 below.

Figure 141: Registered health workforce by profession, Region, 2013 to 2017

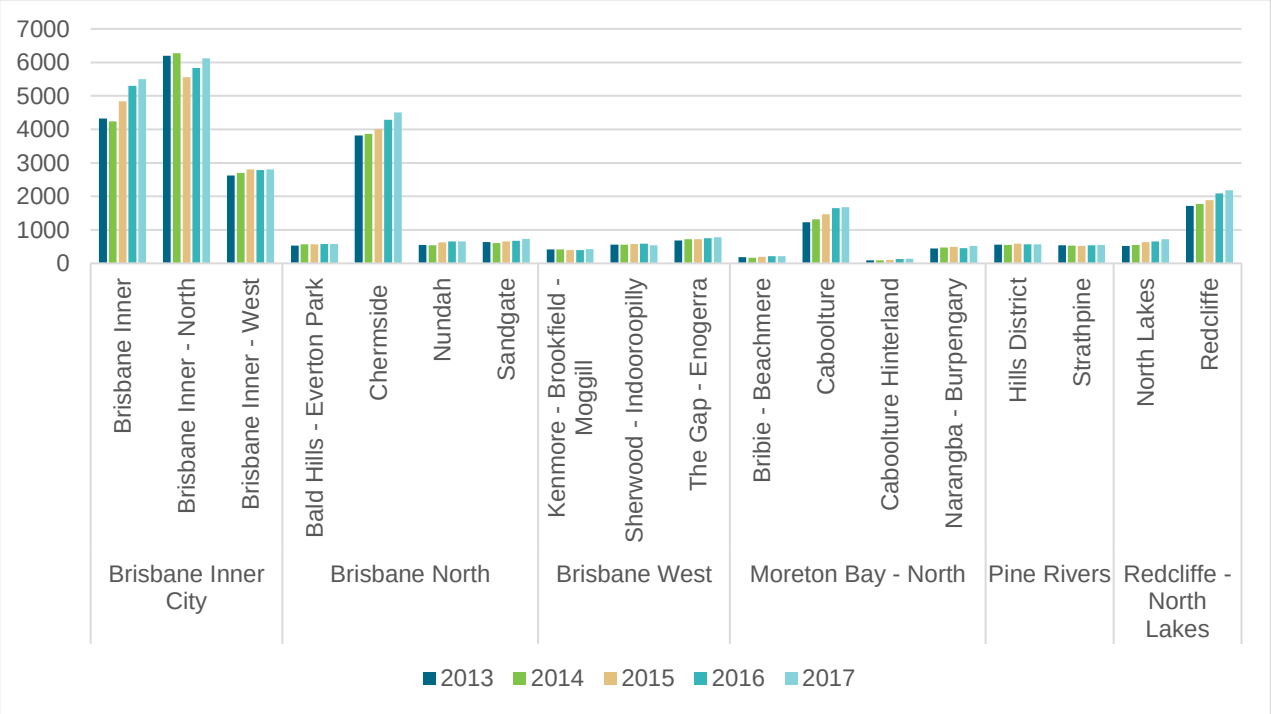


Source: (Department of Health, 2019)

There is an uneven distribution of health practitioners in the region, with 71.5 per cent of all registered health practitioners located in the Brisbane North (22.1 per cent) and Brisbane Inner City (49.4 per cent) sub regions. This is contrasted by 8.7 per cent of registered health practitioners operating in the Moreton Bay – North sub region. While the distribution of health practitioners is inconsistent throughout the catchment, it is however consistent with the location of large healthcare facilities including the Royal Brisbane and Women's Hospital and The Prince Charles Hospital. Figure 142 highlights the distribution of health practitioners by SA3 and sub region and the trends between 2013 and 2017.

[230] Does not include medical practitioners, as these are broken down in detail further through the chapter.

Figure 142: Registered health practitioners by SA3 and sub region, 2013 to 2017[231]



Source: (Department of Health, 2019)

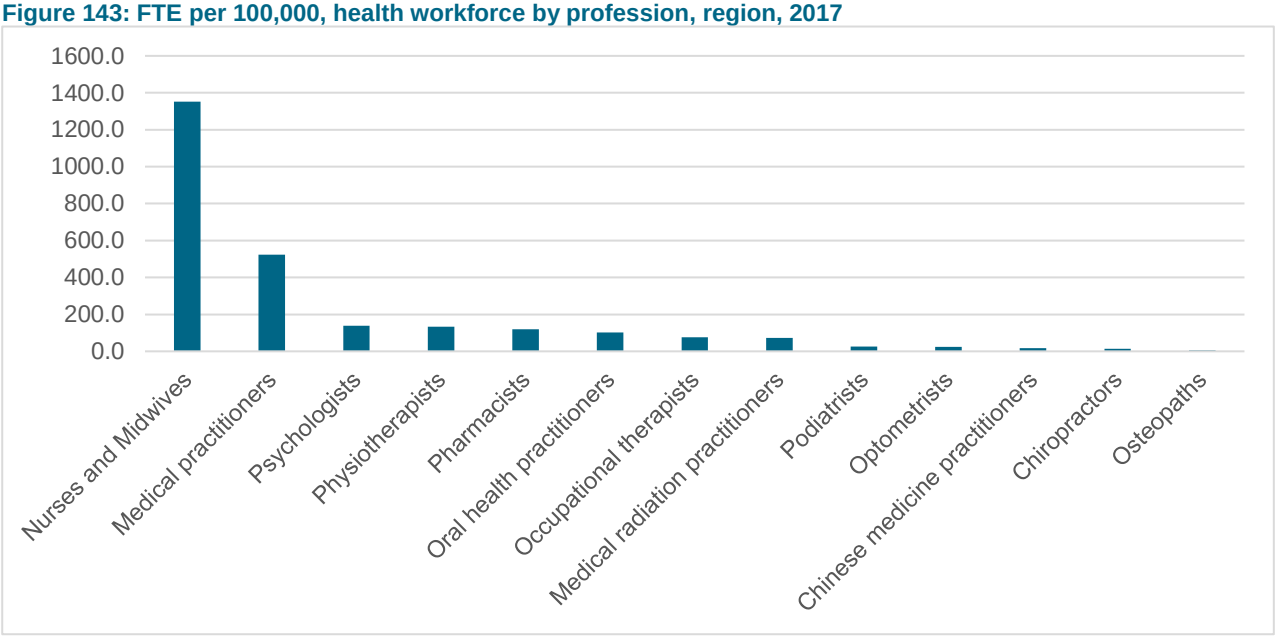
FTE rates, health practitioners

The number of health practitioners alone does not adequately reveal whether the health workforce adequately services a region. To determine whether a region is over or underserviced by the health workforce, it is useful to determine the service utilisation rates, along with the average number of hours a practitioner works per week and the FTE rate per capita.

In 2017, nurses and midwives had the highest rate of FTE per 100,000 people among health practitioners within the region, with 1352.4 FTE per 100,000 people. This was followed by medical practitioners (524.2 FTE per 100,000) and psychologists (138.4 FTE per 100,000)[232]. Despite proportional increases in the number of osteopaths and chiropractors in the region, FTE rates per 100,000 for these professions remains the lowest of all health practitioners, with 5 FTE per 100,000 and 13 FTE per 100,000 respectively[233]. The distribution of FTE per 100,000 by each profession is shown in Figure 143 below.

[231] SA3 figures may not sum to region total, due to data suppression at low geographic levels.
[232] Base data sourced from (Department of Health, 2019)
[233] Base data sourced from (Department of Health, 2019)

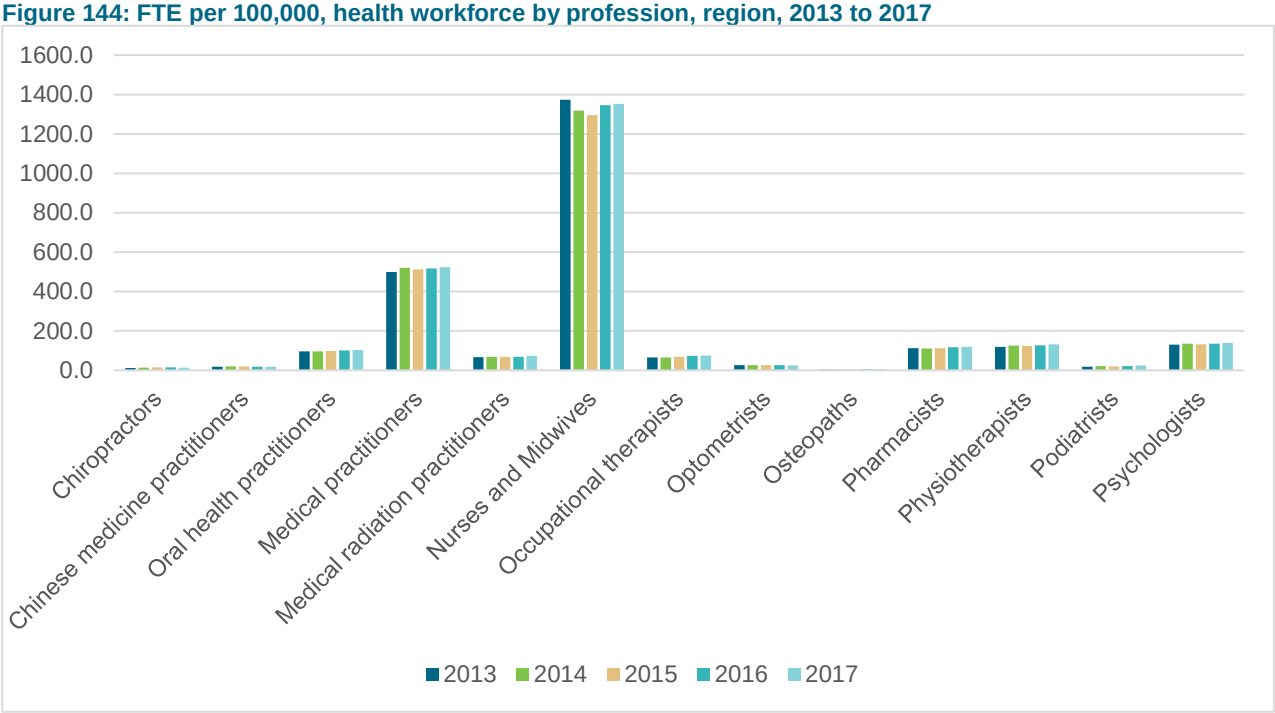
Figure 143: FTE per 100,000, health workforce by profession, region, 2017



Source: (Department of Health, 2019)

Between 2013 and 2017, FTE rates for the health workforce remained stable across the region. There was a slight decrease in the FTE rate among nurses and midwives; however, this decrease was not significant. Increases in FTE rates among other professions were within standard deviation. These trends are highlighted in Figure 144below.

Figure 144: FTE per 100,000, health workforce by profession, region, 2013 to 2017



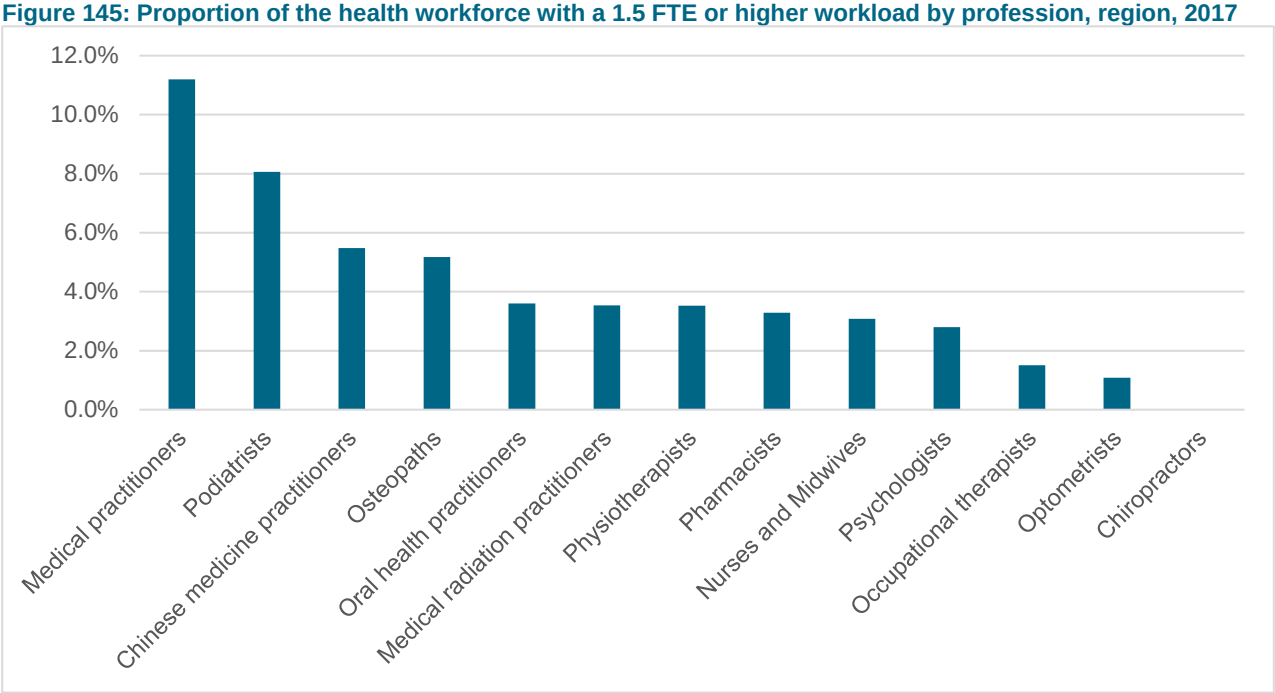
Source: (Department of Health, 2019)

Proportion of health practitioners with high FTE workloads

Often analysis of FTE rates alone miss the proportion of the workforce that have large workloads. It is therefore useful to analyse the proportion of practitioners that work more than a 1.5 FTE workload or higher when analysing FTE rates for a region[234].

In 2017, an estimated four per cent of the health workforce have a 1.5 FTE workload or higher, across all professions, on average. Professions with a higher than average proportion of practitioners with a 1.5 FTE workload or higher include medical practitioners (11.2 per cent), podiatrists (8.1 per cent), Chinese medicine practitioners (5.5 per cent) and osteopaths (5.2 per cent)[235]. Professions that had a low proportion of practitioners with a 1.5 FTE workload or higher included chiropractors (zero per cent), optometrists (1.1 per cent) and occupational therapists (1.5 per cent). These figures can be seen in Figure 145.

Figure 145: Proportion of the health workforce with a 1.5 FTE or higher workload by profession, region, 2017

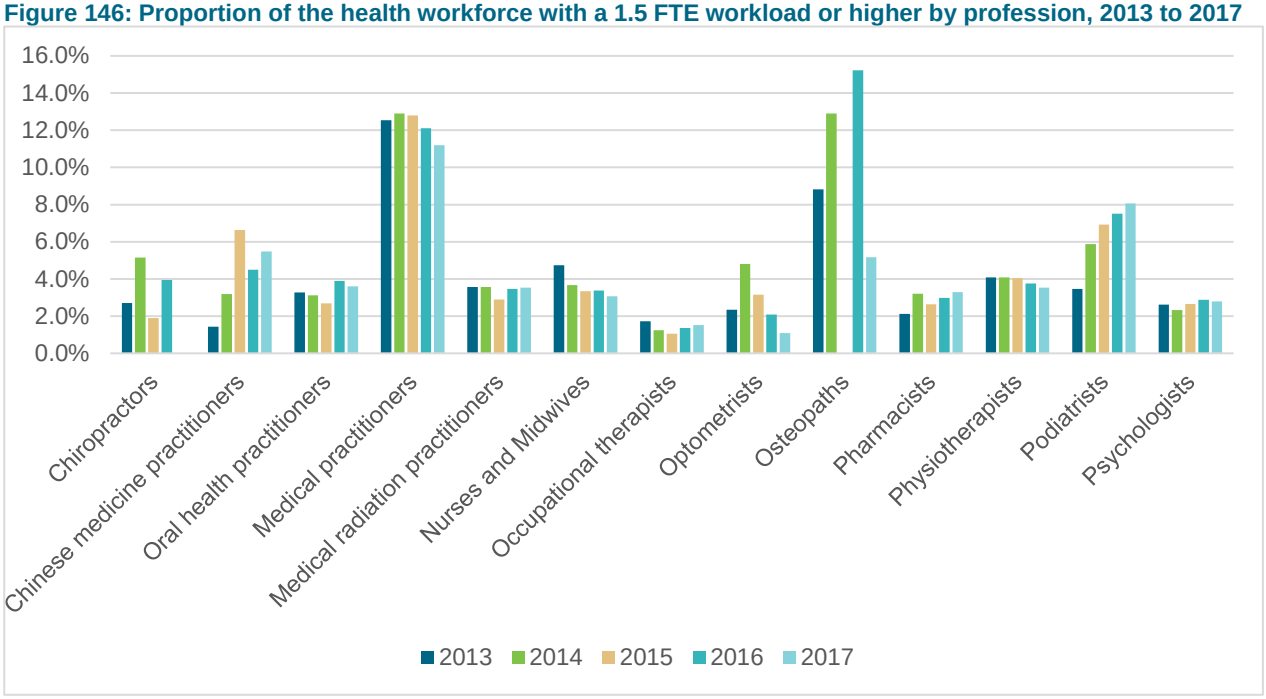


Source: (Department of Health, 2019)

Between 2013 and 2017, there was considerable fluctuation in the proportion of the health workforce who had a 1.5 FTE workload or higher by profession. While the proportion of medical practitioners who had a 1.5 FTE workload or higher decreased, there was considerable fluctuation in the proportion of osteopaths, chiropractors, optometrists and Chinese medicine practitioners that had a 1.5 FTE workload or higher. This variation may be due to lower practitioner numbers in these professions. An observed increase in the proportion of podiatrists with a 1.5 FTE workload or higher was also recorded. These trends are shown in Figure 146 below.

[234] A 1.5 FTE workload or higher refers to a practitioner who works 60 or more hours per week on average.
[235] Base data sourced from (Department of Health, 2019)

Figure 146: Proportion of the health workforce with a 1.5 FTE workload or higher by profession, 2013 to 2017



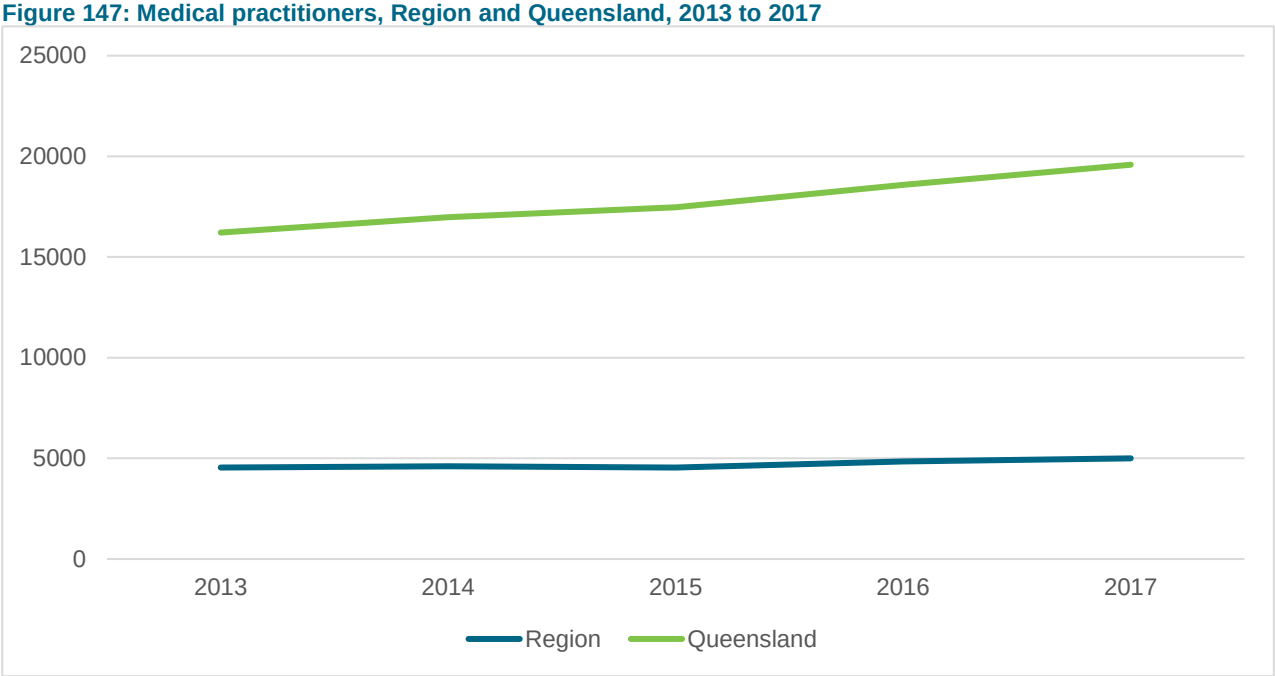
Source: (Department of Health, 2019)

Medical practitioners

Medical practitioners are health professionals who have been registered by the Medical Board of Australia to practice medicine in Australia. Medical practitioners are registered under five main categories; general, specialist, provisional, limited and non-practising. Medical practitioners have a range of specialisations, ranging from addiction specialists to general practitioners to emergency medicine specialists.

In 2017, there were 5023 medical practitioners working in the Region, representing 25.7 per cent of all medical practitioners in Queensland[236][237]. Between 2013 and 2017, the number of medical practitioners working in the region increased 10.2 per cent, a smaller increase when compared to Queensland (20.6 per cent). This trend can be seen in Figure 147.

Figure 147: Medical practitioners, Region and Queensland, 2013 to 2017

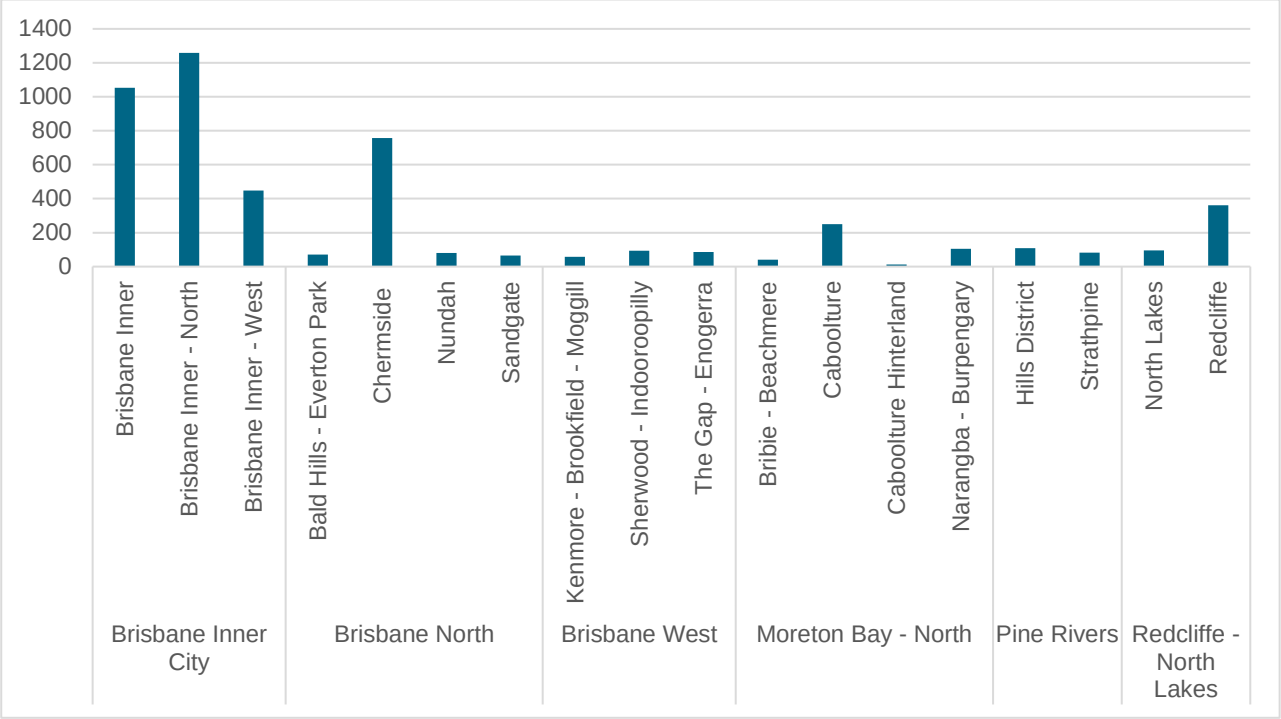


Source: (Department of Health, 2019)

Within the region, the number of medical practitioners in 2017 ranged from 1258 in the Brisbane Inner – North SA3 to 12 in the Caboolture Hinterland SA3[238]. The distribution of medical practitioners reflects the location of tertiary facilities within the region, with high numbers of medical practitioners present in the Brisbane Inner, Brisbane Inner – North, Brisbane Inner – West, Chermside, Caboolture and Redcliffe SA3s. The distribution of medical practitioners within the region can be seen in Figure 148 below.

[236] This figure represents all registered medical practitioners who were working in their registered profession.
[237] (Department of Health, 2019)
[238] (Department of Health, 2019)

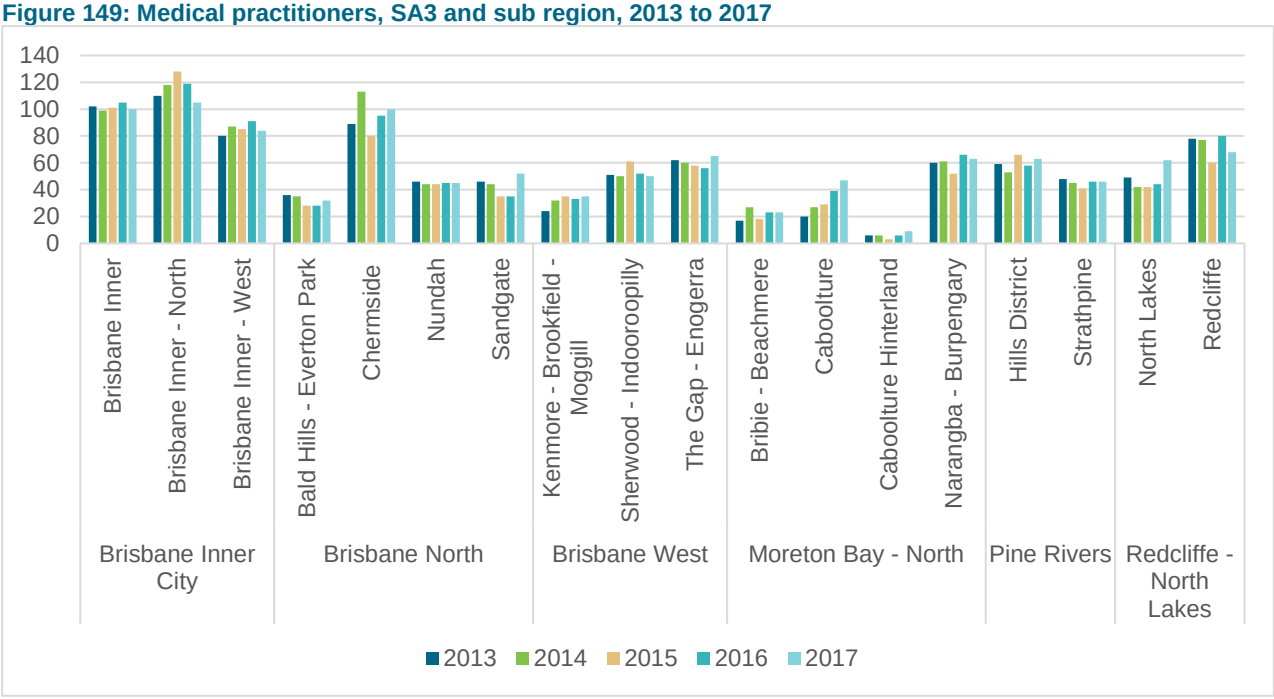
Figure 148: Medical practitioners by Statistical Area level three and sub region, 2017[239]



Source: (Department of Health, 2019)

Between 2013 and 2017, changes in the number of medical practitioners varied considerable by SA3. There were observed increases in the number of medical practitioners in the Caboolture and North Lakes SA3s, with fluctuations in the number of medical practitioners across most other SA3s within the region. There were no significant decreases in the number of medical practitioners in any single SA3. These trends are shown in Figure 149.

Figure 149: Medical practitioners, SA3 and sub region, 2013 to 2017



Source: (Department of Health, 2019)

Within the medical practitioner workforce, the most common primary specialities were general practitioners, followed by physicians, surgeons, anaesthetists and psychiatrists. Between 2013 and 2017, the number of medical practitioners in each speciality were stable, with no primary speciality experiencing significant growth or decline. While the number of medical practitioners in each speciality remained stable, there were

[239] Data suppression rules mean that SA3 figures do not sum to region total.

observed increases in a number of specialities in Queensland, particularly for anaesthetists. During the period 2013 to 2017, the number of general practitioners in Queensland increased by 13.9 per cent. Trends for each primary speciality are highlighted in Table 35 below.

Table 35: Medical practitioners by primary speciality, Region and Queensland, 2013 to 2017[240]

Primary speciality	Region	Qld	Region	Qld	Region	Qld	Region	Qld	Region	Qld
	2013		2014		2015		2016		2017	
Addiction medicine	7	13	6	16	3	4	12	17	9	16
Anaesthesia	267	762	257	815	256	834	260	882	279	918
Dermatology	32	61	34	69	30	72	39	78	39	83
Emergency medicine	94	297	94	329	105	369	116	410	115	457
General practice	1068	4501	1068	4586	1086	4721	1166	4901	1168	5129
Intensive care medicine	40	134	41	139	44	130	38	151	42	172
Medical administration	24	60	24	63	24	54	28	65	36	66
Obstetrics and gynaecology	96	335	108	355	114	352	106	356	107	364
Occupational and environmental medicine	18	36	16	36	20	31	18	29	29	43
Ophthalmology	46	136	35	139	40	145	46	159	53	158
Paediatrics and child health	105	291	115	305	67	317	75	346	86	385
Pain medicine	9	23	9	24	9	28	6	19	12	23
Palliative medicine	9	21	6	35	9	33	12	48	12	45
Pathology	107	256	106	238	96	234	105	253	120	275
Physician	386	1106	408	1187	386	1245	409	1333	403	1401
Psychiatry	232	566	244	603	257	623	254	646	267	672
Public health medicine	20	48	25	46	22	48	18	53	15	56
Radiation Oncology	25	63	21	55	22	60	23	71	31	82
Radiology	104	323	108	345	105	362	101	376	110	398
Rehabilitation medicine	12	35	6	39	6	42	6	52	6	57
Sexual health medicine	3	12	3	12	3	7	12	15	6	11
Sport and exercise medicine	6	12	9	12	9	9	9	9	9	12
Surgery	294	873	321	919	296	929	333	988	332	1019

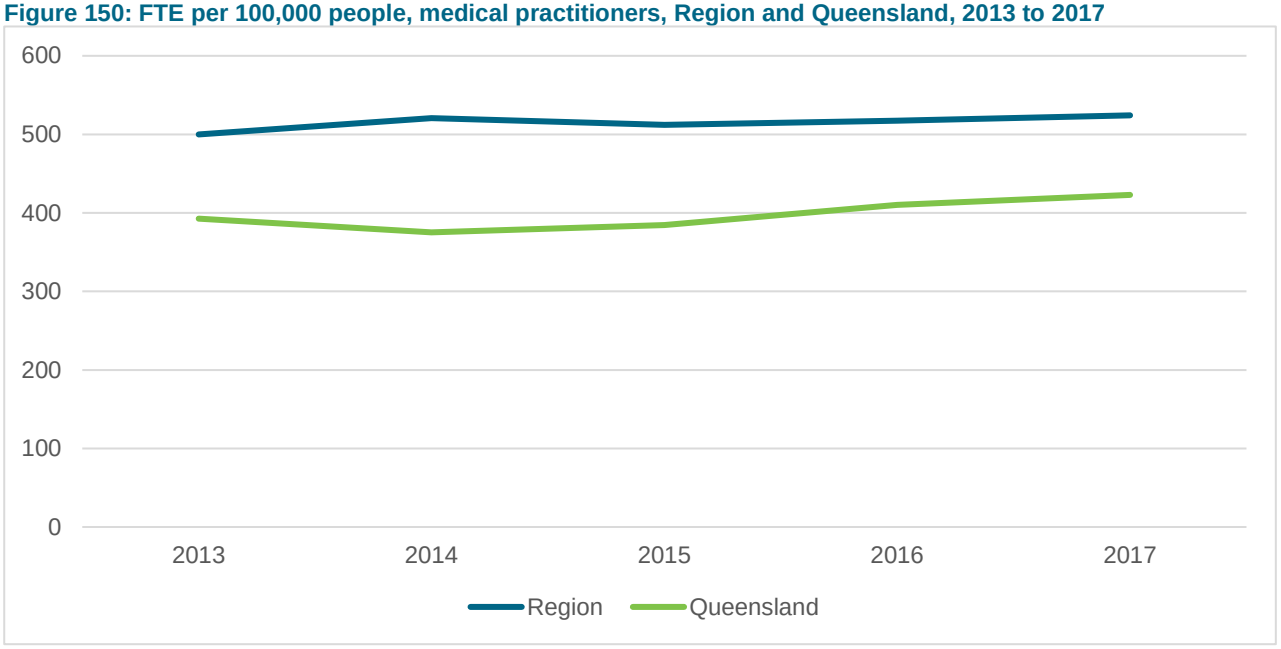
Source: (Department of Health, 2019)

[240] Table excludes medical practitioners who did not state their primary specialty.

FTE rates, medical practitioners

In 2017, the FTE rate for all medical practitioners working in the region was 524.2 FTE per 100,000 people[241]. This was higher than the FTE rate of 422.9 per 100,000 in Queensland. The FTE rate for medical practitioners working in the region in 2017 was 1.05 times the FTE rate in 2013. This increase is reasonably consistent with the overall FTE growth for medical practitioners in Queensland, with the FTE rate for medical practitioners working in Queensland in 2017 1.08 times the rate in 2013. This increase is shown in Figure 150.

Figure 150: FTE per 100,000 people, medical practitioners, Region and Queensland, 2013 to 2017

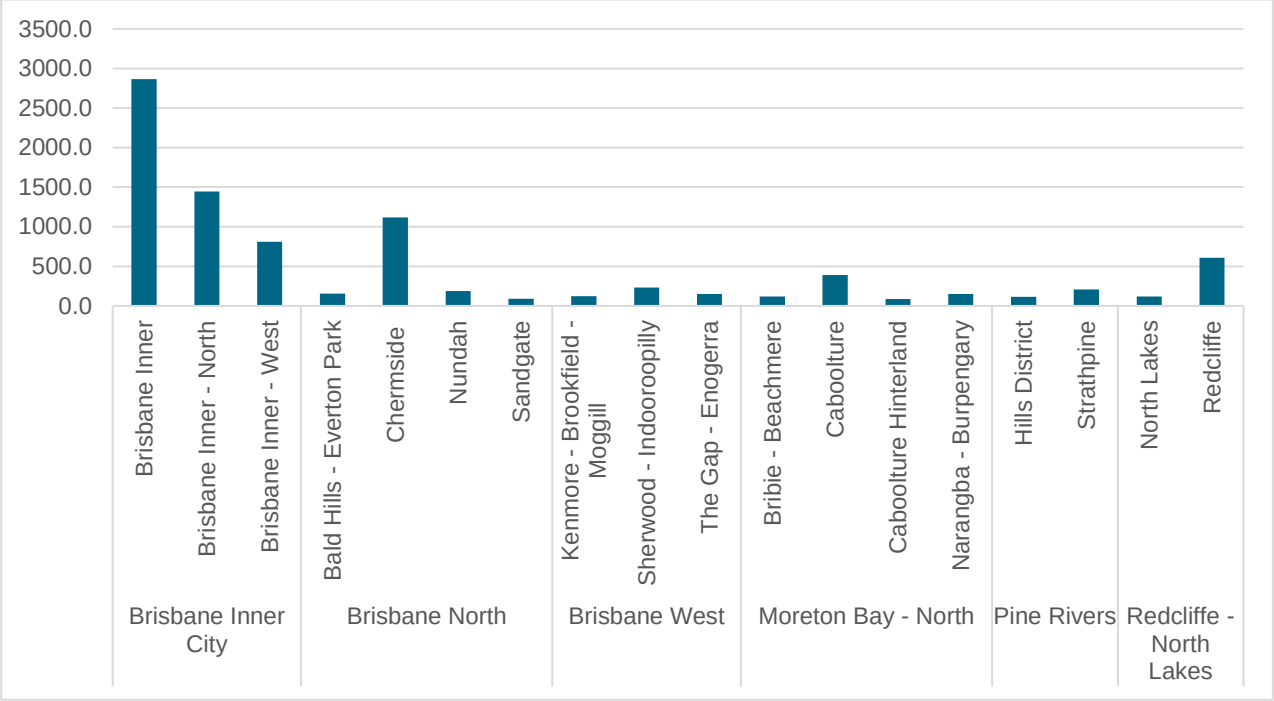


Source: (Department of Health, 2019)

Within the region, the FTE rate for medical practitioners in 2017 ranged from 2866.8 FTE per 100,000 people in the Brisbane Inner SA3 to 85.3 FTE per 100,000 people in the Caboolture Hinterland SA3. Rates of FTE for medical practitioners broadly reflect the location of tertiary facilities within the region. This is highlighted in Figure 151 below.

[241] Base data sourced from (Department of Health, 2019)

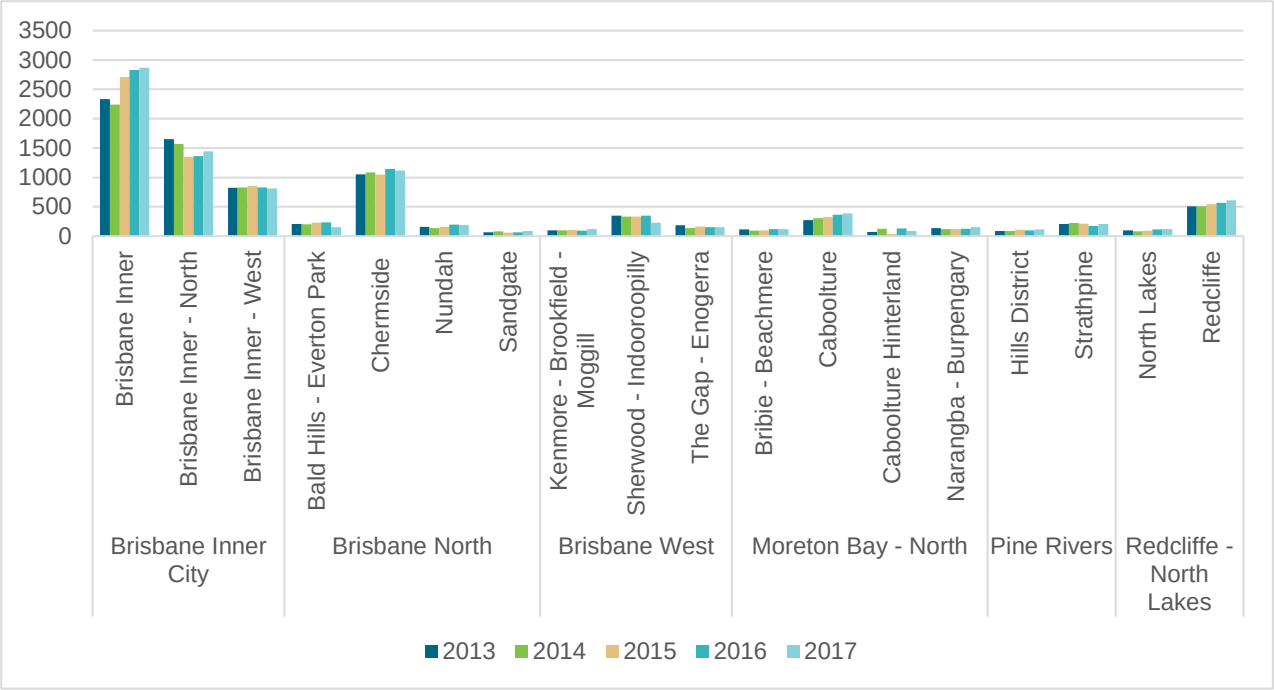
Figure 151: FTE per 100,000 people, medical practitioners, Statistical Area level three and sub region 2017



Source: (Department of Health, 2019)

Between 2013 and 2017, the changes in FTE rate for medical practitioners varied considerably across most SA3 areas. While the FTE rate in the Brisbane Inner SA3 in 2017 was 1.2 times the FTE rate in 2013, in the Chermside SA3, the FTE rate was more stable. There were observed decreases in the FTE rate in the Brisbane Inner – North, Sherwood - Indooroopilly and The Gap – Enoggera SA3s, contrasted by consistent increases in the Redcliffe, Narangba – Burpengary, North Lakes and Caboolture SA3 areas. In other SA3s, including the Caboolture Hinterland and Hills District SA3s, there were fluctuations in the FTE rate for medical practitioners. These trends are shown in Figure 152.

Figure 152: FTE per 100,000 people, medical practitioners, Statistical Area level three and sub region, 2013 to 2017



Source: (Department of Health, 2019)

Analysis of medical practitioners by primary speciality revealed that the most common specialities in the region were general practitioners, followed by physicians, surgeons, anaesthetists and psychiatrists. Generally, FTE rates for most specialities were higher in the region when compared to Queensland, with the

most common specialities in the region mirroring the most common specialities in Queensland. These comparisons are shown in Table 36 below.

Table 36: FTE per 100,000, medical practitioners by primary speciality, Region and Queensland, 2013 to 2017 [242]
Source: (Department of Health, 2019)

Primary speciality	Qld	Region	Qld	Region	Qld	Region	Qld	Region	Qld	Region
	2013		2014		2015		2016		2017	
Addiction medicine	0.3	0.8	0.4	0.7	0.1	0.3	0.3	1.2	0.3	0.9
Anaesthesia	17.6	30.7	18.3	28.3	18.8	27.4	19.8	28.0	19.9	28.8
Dermatology	1.4	3.9	1.6	3.8	1.6	3.6	1.6	4.4	1.7	4.0
Emergency medicine	6.9	10.8	7.2	10.3	7.9	11.5	8.7	11.9	9.4	11.9
General practice	97.5	107.6	97.1	105.2	98.3	104.7	100.1	110.9	102.9	108.7
Intensive care medicine	3.8	5.9	4.0	6.1	3.5	6.4	4.1	5.4	4.5	5.4
Medical administration	1.6	3.3	1.5	3.4	1.3	2.8	1.5	3.2	1.7	4.5
Obstetrics and gynaecology	8.5	11.6	9.2	14.4	8.7	14.4	9.1	12.9	8.7	13.0
Occupational and environmental	0.7	1.8	0.7	1.6	0.7	2.0	0.7	1.7	0.8	2.5
Ophthalmology	3.2	5.5	3.3	4.0	3.3	4.8	3.8	5.4	3.5	5.6
Paediatrics and child health	6.6	11.7	6.8	11.9	6.9	6.9	7.4	7.3	8.0	8.6
Pain medicine	0.6	1.3	0.6	0.8	0.7	1.2	0.4	0.5	0.5	1.1
Palliative medicine	0.5	1.0	0.7	0.5	0.7	0.9	1.0	1.0	0.9	0.9
Pathology	5.6	11.0	5.2	10.5	4.9	9.8	5.3	10.5	5.5	12.1
Physician	28.2	49.6	29.5	51.7	30.3	46.4	32.2	48.7	32.6	45.6
Psychiatry	12.2	25.5	13.2	26.2	13.3	26.3	13.8	25.9	13.8	26.0
Public health medicine	1.2	2.6	1.1	3.0	1.1	2.8	1.1	1.7	1.2	1.7
Radiation Oncology	1.5	3.0	1.3	2.6	1.3	2.8	1.6	2.7	1.7	3.6
Radiology	7.5	11.5	7.7	11.1	8.3	11.7	8.2	10.8	8.9	11.4
Rehabilitation medicine	0.9	1.6	0.9	0.6	0.9	0.3	1.0	0.3	1.3	0.4
Sexual health medicine	0.3	0.5	0.3	0.4	0.2	0.3	0.2	0.9	0.2	0.5
Sport and exercise medicine	0.3	0.6	0.3	1.3	0.2	1.2	0.3	1.3	0.3	1.0
Surgery	23.4	39.6	24.3	42.1	24.8	40.2	25.9	43.0	25.8	41.1

Within the region, higher FTE rates for most specialities were aligned to the location of tertiary facilities, particularly anaesthesia practitioners, emergency medicine, obstetrics and gynaecology, paediatrics and surgery. For general practitioners, FTE rates tended to be higher in the Brisbane Inner and Brisbane Inner – West sub regions, with lower FTE rates in the Moreton Bay North sub region. This indicates GP FTE is not distributed to demand, or need for services. The distribution of FTE rates by primary speciality is highlighted in Table 37 below.

[242] Table excludes practitioners who did not state their primary speciality.

Table 37: FTE per 100,000 people, medical practitioners by primary speciality and statistical area level three, 2017

Primary speciality	Bald Hills - Everton Park	Bribie - Beachmere	Brisbane Inner	Brisbane Inner - North	Brisbane Inner - West	Caboolture	Caboolture Hinterland	Chermside	Kenmore - Brookfield - Moggill	Narangba - Burpengary	North Lakes	Nundah	Redcliffe	Sandgate	Sherwood - Indooroopilly	Strathpine	The Gap - Enoggera	The Hills District
Addiction medicine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Anaesthesia	0.0	0.0	234.0	67.7	68.4	10.0	0.0	57.4	7.1	0.0	0.0	0.0	32.9	0.0	12.8	0.0	0.0	0.0
Dermatology	0.0	0.0	25.1	10.0	28.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0
Emergency medicine	0.0	0.0	52.9	37.3	14.0	30.3	0.0	47.8	0.0	0.0	0.0	7.3	26.6	0.0	0.0	0.0	0.0	0.0
General practice	72.4	74.6	228.9	97.0	112.8	68.8	63.5	139.0	65.2	96.0	78.6	109.5	107.3	73.0	122.3	105.4	122.9	66.9
Intensive care medicine	0.0	0.0	35.1	12.3	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0	11.3	0.0	0.0	0.0	0.0	0.0
Medical administration	0.0	0.0	17.1	11.2	0.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0
Not stated	35.6	50.7	988.6	683.8	101.6	181.7	72.0	489.1	23.8	41.9	21.6	53.9	269.8	18.3	46.2	58.0	50.0	41.2
Obstetrics and gynaecology	6.9	0.0	112.0	15.8	25.1	9.7	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	0.0	0.0	0.0
Occupational and environmental medicine	0.0	0.0	34.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	6.6	0.0	0.0	0.0
Ophthalmology	0.0	0.0	62.5	0.0	3.7	5.3	0.0	1.6	0.0	0.0	5.3	0.0	8.7	0.0	13.2	0.0	0.0	0.0
Paediatrics and child health	17.4	0.0	208.4	27.5	38.3	13.7	0.0	31.8	0.0	0.0	4.6	8.2	17.6	0.0	0.0	0.0	10.5	0.0
Pain medicine	0.0	0.0	4.7	0.0	16.1	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palliative medicine	0.0	0.0	9.2	3.2	6.9	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pathology	0.0	0.0	26.5	119.4	9.3	0.0	0.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Physician	6.9	0.0	269.2	120.1	128.3	24.6	0.0	182.3	0.0	0.0	0.0	0.0	46.5	0.0	12.5	0.0	0.0	0.0
Psychiatry	0.0	0.0	195.7	42.4	79.6	13.7	0.0	30.2	0.0	0.0	4.8	16.0	0.0	8.6	12.0	14.7	5.1	0.0

Public health medicine	0.0	0.0	0.0	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Radiation Oncology	0.0	0.0	7.7	18.4	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Radiology	9.5	0.0	53.7	43.4	33.9	7.4	0.0	29.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	0.0	5.7	0.0
Rehabilitation medicine	0.0	0.0	5.0	4.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sexual health medicine	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sport and exercise medicine	0.0	0.0	0.0	4.2	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Surgery	8.7	0.0	369.3	64.9	122.8	13.3	0.0	71.4	0.0	0.0	5.7	0.0	26.1	0.0	0.0	0.0	0.0	4.1
Total	154.9	117.9	2866.8	1443.8	811.1	388.9	85.3	1117.6	121.5	150.6	119.3	189.0	609.1	89.5	231.1	206.8	152.6	115.3

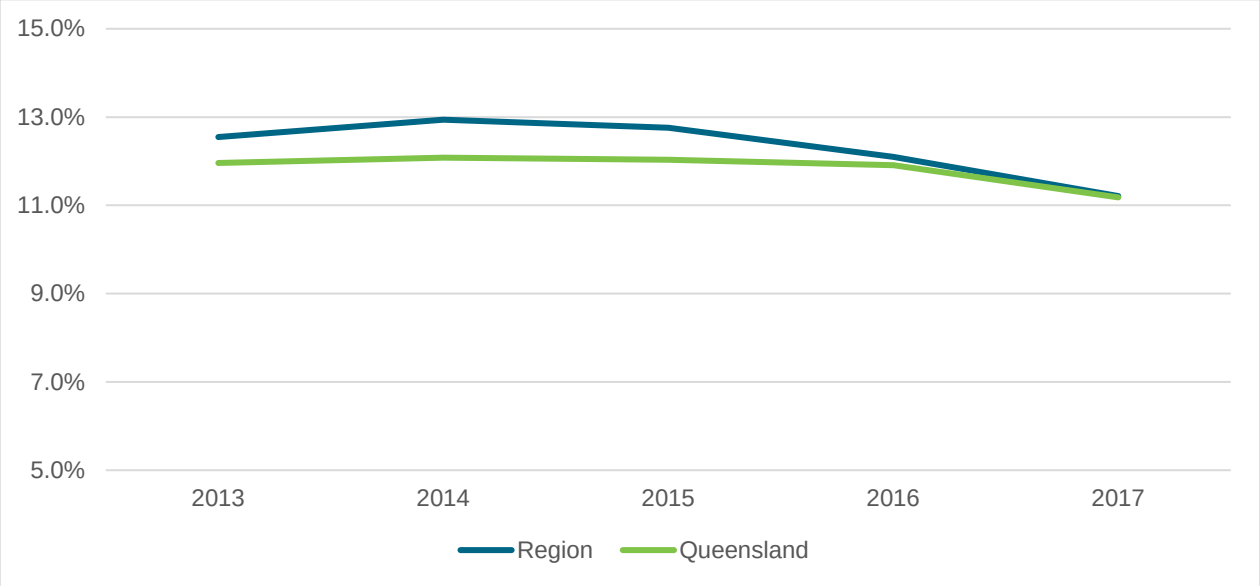
Source: (Department of Health, 2019)

Proportion of medical practitioners with high FTE workloads

This section analyses FTE workloads for medical practitioners, benchmarking these figures to Queensland.

In 2017, 11.2 per cent of medical practitioners working in the region had a 1.5 FTE workload or higher. This is consistent with Queensland, where 11.2 per cent of medical practitioners had a 1.5 FTE workload or higher in 2017. Between 2013 and 2017, the proportion of medical practitioners in the region that have a 1.5 FTE workload or higher decreased for both the region and Queensland; however, the decrease in the region has been sharper, as indicated in Figure 153.

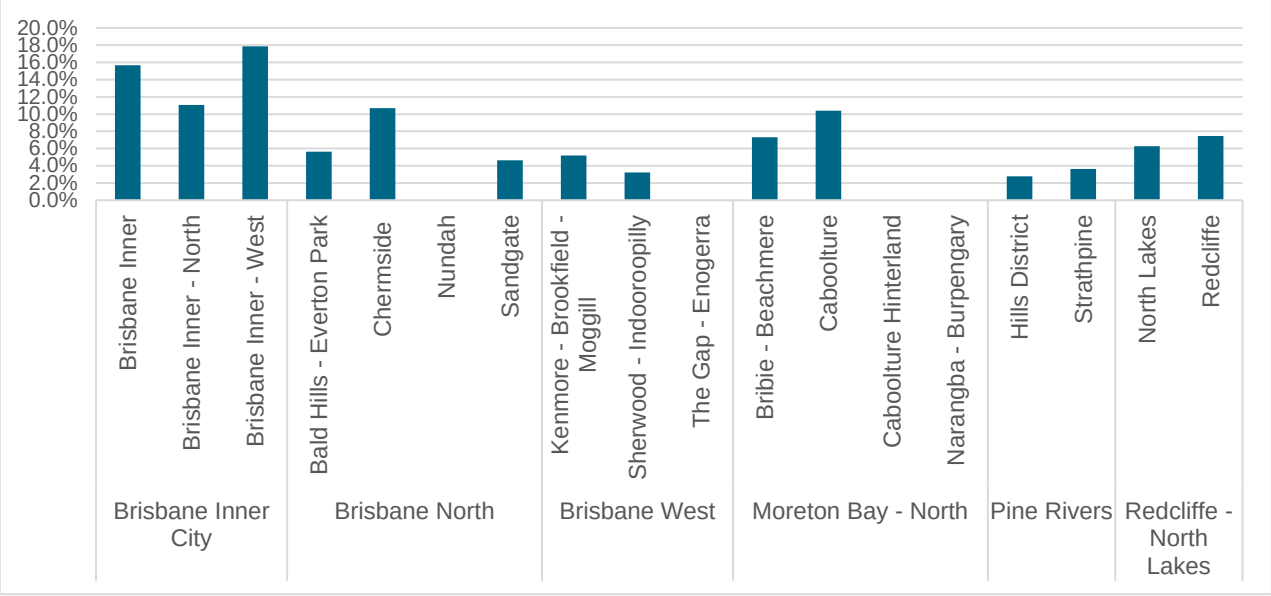
Figure 153: Proportion of medical practitioners with a 1.5 FTE workload or higher, Region and Queensland, 2013 to 2017



Source: (Department of Health, 2019)

Within the region, the proportion of medical practitioners with a 1.5 FTE workload or higher in 2017 ranged from zero per cent in the Narangba – Burpengary, Nundah and The Gap – Enoggera SA3s to 17.9 per cent of medical practitioners working in the Brisbane Inner – West SA3. Similar to FTE rates, higher FTE workloads are associated with the location of tertiary facilities in the region. This is highlighted in Figure 154 below.

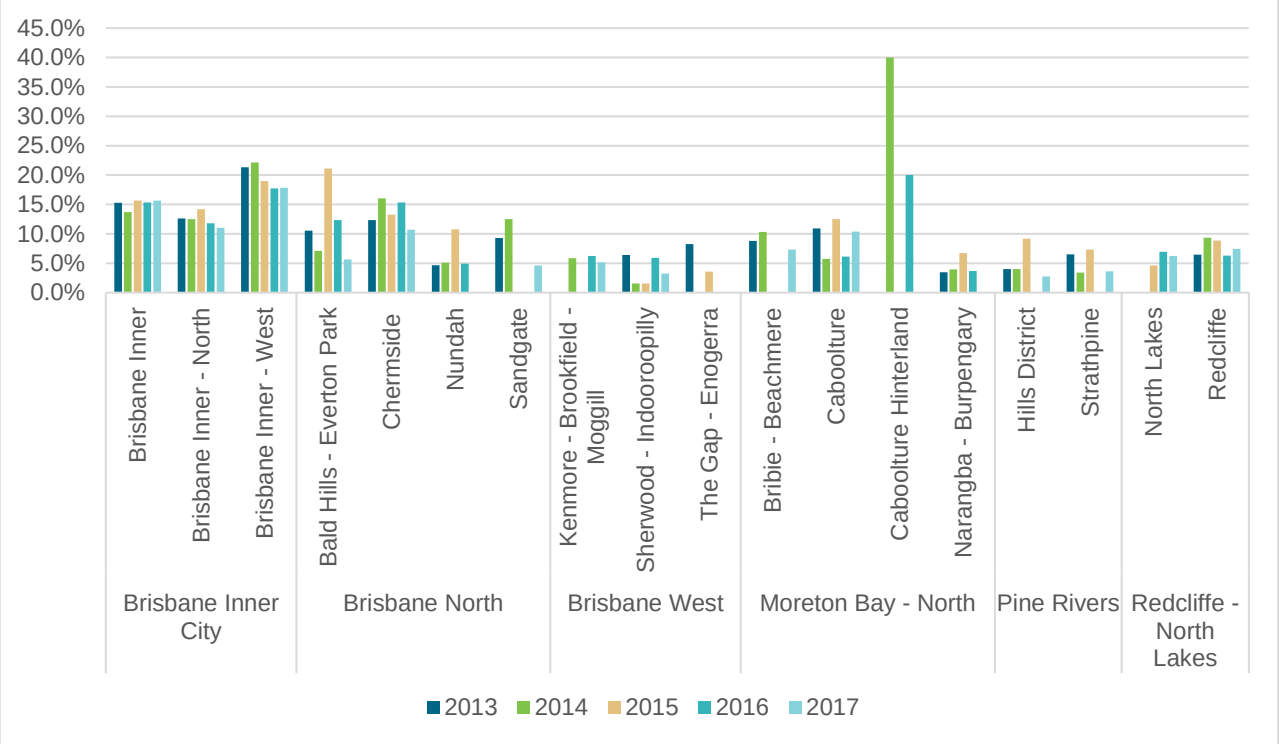
Figure 154: Proportion of medical practitioners with a 1.5 FTE workload or higher by statistical area level three and sub region, 2017



Source: (Department of Health, 2019)

Between 2013 and 2017, there was considerable variation in the proportion of medical practitioners that worked a 1.5 FTE or higher workload within the region. FTE workloads tended to fluctuate in the Chermside, Caboolture, Redcliffe and Bald Hills – Everton Park SA3s, while there were noted decreases in workloads across the Brisbane West and Brisbane Inner City sub regions, with the exception of the Brisbane Inner SA3. The small number of medical practitioners working in some SA3s may possibly account for the variation over time. These trends are shown in Figure 155.

Figure 155: Proportion of medical practitioners with a 1.5 FTE workload or higher by statistical area level three and sub region, 2013 to 2017



Source: (Department of Health, 2019)

High FTE workload by primary speciality, medical practitioners

For medical practitioners, FTE workloads vary considerably by primary speciality[243]. A large proportion of medical practitioners specialising in intensive care medicine, surgery and medical administration have high workloads, with over one quarter of medical practitioners in these particular specialities in the region working a 1.5 FTE or higher workload in 2017[244]. While these patterns are consistent with Queensland, the proportion of medical practitioners in the region working a 1.5 FTE or higher workload is higher. Other specialities, including general practice, radiology and psychiatry, have a low proportion of people working a 1.5 FTE or higher workload.

There are temporal variations in the proportion of medical practitioners with a 1.5 FTE or higher workload by primary speciality. For some specialities, including physicians, dermatologists and ophthalmologists, the proportion of people with a 1.5 FTE or higher workload has decreased in both the region and Queensland. By contrast, there have been consistent increases in the proportion of people with a 1.5 FTE or higher workload among pathology practitioners, with fluctuations across a range of specialities.

Comparisons of the proportion of medical practitioners, by primary speciality, with a 1.5 FTE or higher workload between the Region and Queensland can be seen in Table 38.

[243] Variation over time for some specialities may be attributed to the low numbers of people working in the specific speciality. A more thorough analysis of these data should be conducted in conjunction with FTE rates and the number of practitioners working in each speciality.
[244] (Department of Health, 2019)

Table 38: Proportion of medical practitioners with a 1.5 FTE workload or higher by primary speciality, Region and Queensland, 2013 to 2017

Primary speciality	Qld	Region	Qld	Region	Qld	Region	Qld	Region	Qld	Region
	2013		2014		2015		2016		2017	
Addiction medicine	0.0%	0.0%	18.8%	0.0%	0.0%	0.0%	0.0%	0.0%	18.8%	0.0%
Anaesthesia	10.0%	9.4%	8.0%	5.5%	8.3%	4.3%	7.9%	5.8%	8.1%	7.2%
Dermatology	16.4%	28.1%	18.8%	17.7%	12.5%	10.0%	9.0%	15.4%	8.4%	7.7%
Emergency medicine	7.4%	6.4%	7.0%	7.5%	6.8%	6.7%	6.3%	4.3%	6.1%	7.0%
General practice	8.3%	4.8%	8.1%	6.1%	7.8%	5.8%	7.5%	4.9%	6.8%	4.6%
Intensive care medicine	32.8%	40.0%	36.7%	48.8%	28.5%	43.2%	26.5%	34.2%	30.8%	38.1%
Medical administration	20.0%	20.8%	20.6%	12.5%	11.1%	12.5%	18.5%	10.7%	18.2%	25.0%
Not stated	10.9%	10.9%	11.1%	10.7%	11.7%	12.4%	11.4%	11.9%	11.1%	10.7%
Obstetrics and gynaecology	22.1%	22.9%	27.0%	30.6%	23.9%	32.5%	24.7%	18.9%	20.1%	19.6%
Occupational and environmental medicine	11.1%	16.7%	16.7%	0.0%	12.9%	0.0%	20.7%	0.0%	7.0%	0.0%
Ophthalmology	11.8%	17.4%	15.8%	17.1%	12.4%	22.5%	18.2%	26.1%	12.0%	13.2%
Paediatrics and child health	12.7%	11.4%	14.1%	12.2%	12.9%	10.5%	13.9%	8.0%	11.4%	12.8%
Pain medicine	26.1%	33.3%	25.0%	0.0%	32.1%	33.3%	31.6%	0.0%	26.1%	0.0%
Palliative medicine	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%	0.0%	0.0%	0.0%
Pathology	9.0%	5.6%	6.3%	5.7%	3.9%	3.1%	9.1%	8.6%	7.3%	10.0%
Physician	19.2%	24.1%	20.8%	25.7%	18.9%	22.5%	19.7%	22.5%	18.1%	19.4%
Psychiatry	6.2%	8.2%	12.3%	11.5%	11.2%	14.0%	12.5%	11.0%	5.7%	6.0%
Public health medicine	12.5%	15.0%	6.5%	12.0%	18.8%	13.6%	5.7%	0.0%	5.4%	0.0%
Radiation Oncology	7.9%	12.0%	10.9%	14.3%	5.0%	13.6%	8.5%	21.7%	6.1%	9.7%
Radiology	7.1%	5.8%	7.8%	2.8%	10.2%	11.4%	8.5%	3.0%	8.3%	5.5%
Rehabilitation medicine	17.1%	25.0%	12.8%	50.0%	7.1%	0.0%	5.8%	0.0%	15.8%	0.0%
Sexual health medicine	25.0%	100.0%	0.0%	0.0%	42.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Sport and exercise medicine	0.0%	0.0%	25.0%	33.3%	33.3%	33.3%	33.3%	33.3%	0.0%	0.0%
Surgery	32.0%	32.3%	29.2%	32.7%	29.2%	30.7%	31.1%	34.2%	29.0%	31.9%
Total	12.0%	12.6%	12.1%	12.9%	12.0%	12.8%	11.9%	12.1%	11.2%	11.2%

Source: (Department of Health, 2019)

Within the region, high FTE workloads for a number of primary specialities are consistent with the location of tertiary facilities. In 2017, one in five emergency medicine practitioners in the Brisbane Inner, Chermside and Redcliffe SA3s worked a 1.5 FTE or higher workload, with one in three intensive care medicine practitioners

in the Brisbane Inner and Brisbane Inner – North SA3 also working a 1.5 FTE workload or higher. A large proportion of surgeons working in the Brisbane Inner City sub region worked a 1.5 FTE or higher workload in 2017; this also represents the majority of surgeons working in the region.

The proportion of general practitioners with a 1.5 FTE workload or higher increased in the Brisbane Inner City, Brisbane North and Brisbane West sub regions, in contrast to the Redcliffe – North Lakes and Moreton Bay North sub regions. This indicates that not only the number of general practitioners in the Brisbane Inner City, Brisbane West and Brisbane North sub regions is higher, the relative workloads of some general practitioners in this cohort is also higher, relative to demand.

Comparisons between primary specialities by statistical area level three can be seen in Table 39.

Table 39: Proportion of medical practitioners with a 1.5 FTE workload or higher by primary speciality and statistical area level three, 2017 Source: (Department of Health, 2019)

Primary speciality	Bald Hills - Everton Park	Bribie - Beachmere	Brisbane Inner	Brisbane Inner - North	Brisbane Inner - West	Caboolture	Chermside	Kenmore - Brookfield - Moggill	Narangba - Burpengary	North Lakes	Nundah	Redcliffe	Sandgate	Sherwood - Indooroopilly	Strathpine	The Gap - Enoggera	The Hills District
Addiction medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Anaesthesia	0.0%	0.0%	10.0%	4.5%	7.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dermatology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Emergency medicine	0.0%	0.0%	22.2%	10.0%	0.0%	0.0%	18.2%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General practice	0.0%	0.0%	6.0%	2.9%	7.1%	6.4%	9.0%	8.6%	0.0%	4.8%	6.7%	4.4%	0.0%	0.0%	0.0%	4.6%	4.8%
Intensive care medicine	0.0%	0.0%	36.4%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medical administration	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Not stated	0.0%	0.0%	13.4%	13.6%	4.4%	12.1%	8.4%	25.0%	0.0%	0.0%	0.0%	5.1%	0.0%	0.0%	14.3%	12.5%	0.0%
Obstetrics and gynaecology	0.0%	0.0%	23.7%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Occupational and environmental medicine	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ophthalmology	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Paediatrics and child health	50.0%	0.0%	15.0%	12.0%	28.6%	0.0%	30.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Pain medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palliative medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pathology	0.0%	0.0%	0.0%	5.3%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Physician	0.0%	0.0%	27.5%	8.7%	54.7%	0.0%	15.7%	0.0%	0.0%	0.0%	0.0%	11.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Psychiatry	0.0%	0.0%	9.8%	7.3%	6.0%	0.0%	13.6%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Public health medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Radiation Oncology	0.0%	0.0%	0.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Radiology	0.0%	0.0%	0.0%	10.8%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rehabilitation medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sexual health medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sport and exercise medicine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Surgery	0.0%	0.0%	34.2%	26.0%	46.3%	0.0%	36.6%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	5.6%	7.3%	15.7%	11.0%	17.9%	10.4%	10.7%	5.2%	0.0%	6.3%	0.0%	7.5%	4.6%	3.2%	3.6%	0.0%	2.8%

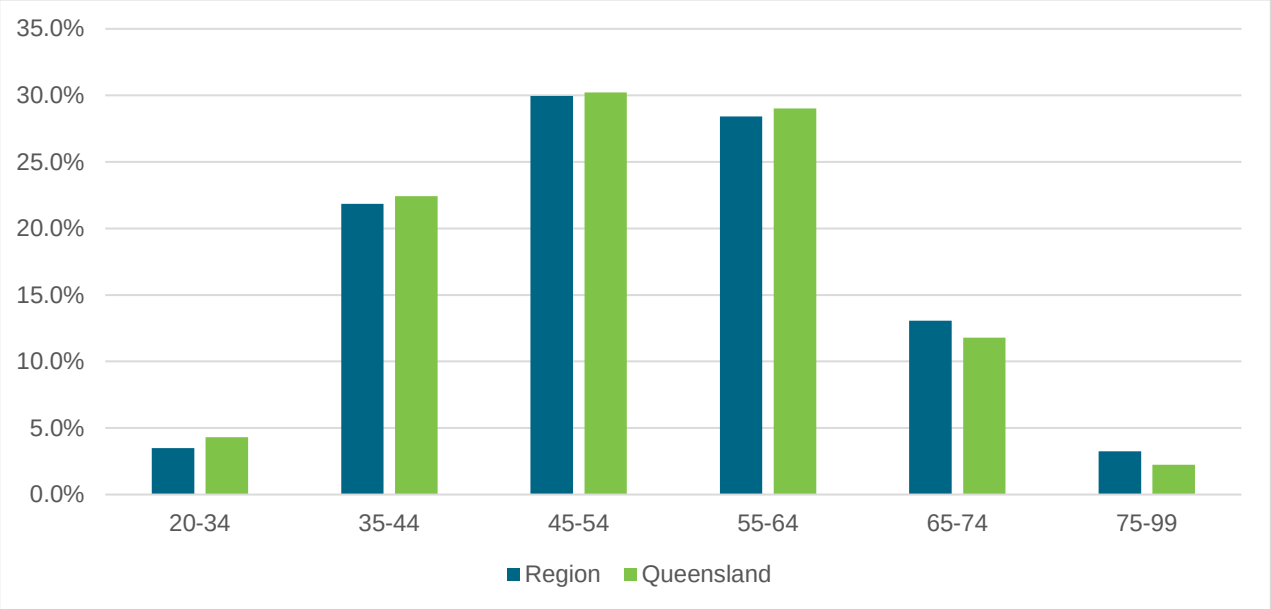
Selected workforce demographical profile

Good workforce planning incorporates the age and demographical profile of the workforce. This allows for the identification of parts of the workforce that may be ageing, and allow for effective succession planning work the health workforce. Ultimately, good workforce planning results in higher quality patient care. This section focuses primarily on the demographical profile of the general practitioner workforce, as they are the central component of the primary health care system in Australia.

As GPs are the central component of the primary care system, identified workforce issues have the potential to affect the accessibility of health services, particularly among more vulnerable populations. Similarly, potential workforce issues among psychologists and specialists have the potential to impact on the delivery of primary mental health and more specialist healthcare services.

In 2017, 44.7 per cent of the GP workforce in the region was aged 55 years and over[245]. When arranged into ten year age groups, one in five GPs were aged 34 to 44 years and the most common age group was 45 to 54 years, with almost one in three (29.9 per cent) of GPs falling within this age group. The age distribution of GPs in the region was similar to the age distribution in Queensland, as shown in Figure 156 below.

Figure 156: **Age profile of the GP workforce, region and Queensland, 2017**



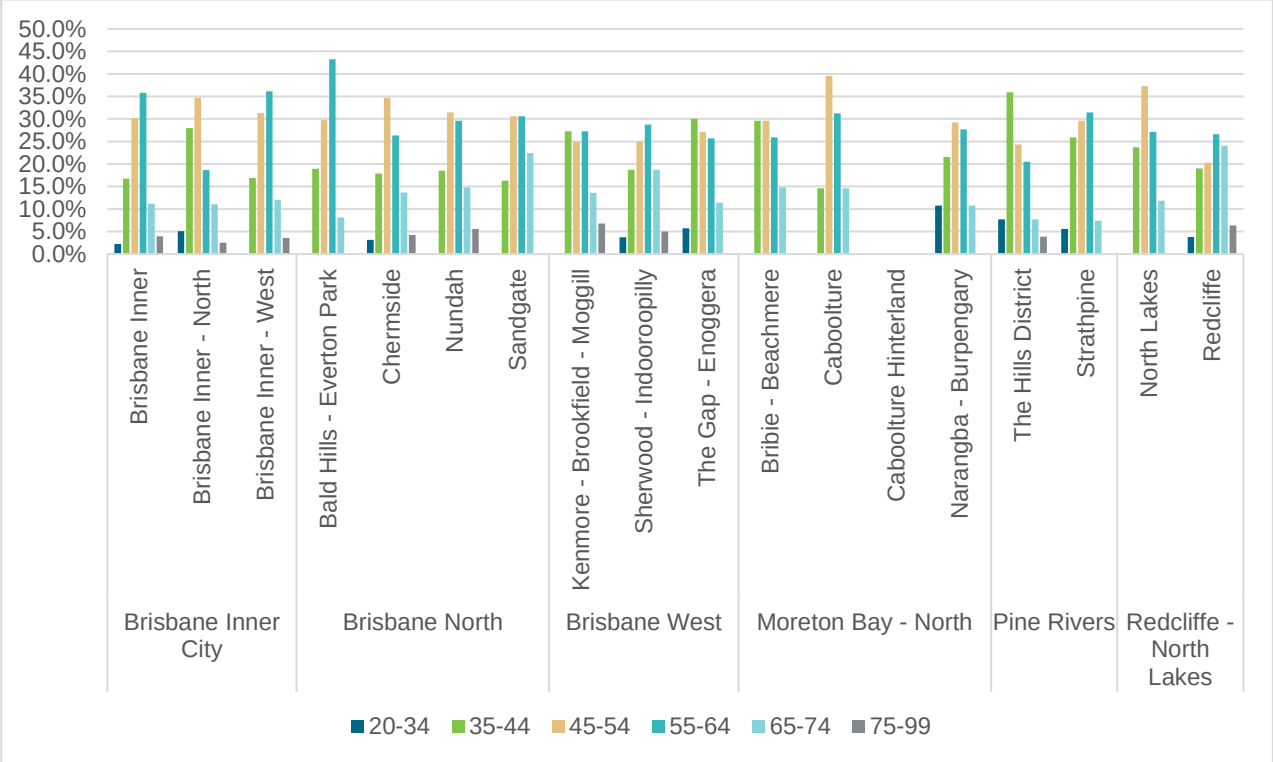
Source: (Department of Health, 2019)

Within the region, the proportion of the GP workforce aged 55 years and over in 2017 varied from 32 per cent in The Hills District SA3 to 57 per cent in the Redcliffe SA3. Of the GP workforce in Redcliffe, one quarter were aged 65 years and over in 2017[246]. An ageing GP workforce was also present in the Sandgate SA3, with over one in every five GPs (22.4 per cent) aged 65 years and over.

The Hills District SA3 had the youngest GP workforce in the region, with 43.6 per cent of GPs in working in The Hills District aged 44 years and younger in 2017. This was followed by The Gap – Enoggera and Brisbane Inner – North[247]. The age profile of the health workforce can be seen in Figure 157.

[245] (Department of Health, 2019)
[246] (Department of Health, 2019)
[247] (Department of Health, 2019)

Figure 157: Age profile of the GP workforce by SA3 and sub region, 2017



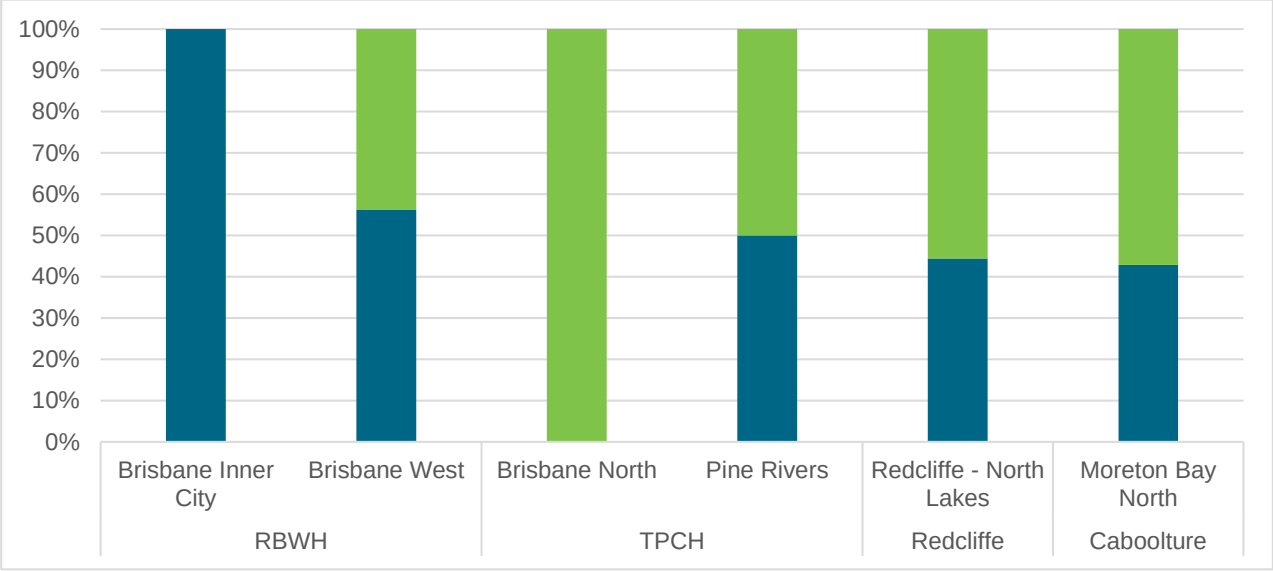
Source: (Department of Health, 2019)

Districts of workforce shortage- GPs

As of June 2019, there are a number of districts of workforce shortage for GPs in the region. Districts of workforce shortage are identified by the Commonwealth Department of Health through analysis of Medicare billing statistics, estimates of the population and analysis of GP FTE to population ratios (Department of Health, 2015).

Identified districts of workforce shortage are more likely to be in the northern and western areas of the region, particularly in the sub regions of Brisbane West and Moreton Bay – North. The distribution of districts of workforce shortage by sub region can be seen in Figure 158.

Figure 158: Districts of workforce shortage for general practice by sub region and hospital catchment, 2019



Source: Commonwealth Department of Health, 2019

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Appendix 1 - Concordance split

The region is comprised of 18 statistical areas level three. While most statistical areas level three reside fully within the region, three statistical areas have been subject to a population based concordance split. These statistical areas and the proportion of each area that resides within the region is detailed in the following table. Further detail on the location of statistical areas level three can be found in the map below.

SA3	Concordance
Caboolture Hinterland	93.37%
Caboolture	100%
Bribie - Beachmere	100%
Narangba - Burpengary	100%
Redcliffe	100%
North Lakes	100%
Strathpine	100%
Hills District	100%
Sandgate	100%
Bald Hills - Everton Park	100%
Chermside	100%
Nundah	100%
Brisbane Inner - North	100%
Brisbane Inner	54.32%
Brisbane Inner - West	100%
The Gap - Enoggera	100%
Sherwood - Indooroopilly	65.10%
Kenmore - Brookfield - Moggill	100%

Appendix 2 - Hospital catchment, sub regions and statistical area allocation

Hospital Catchment	Sub regions	SA3 name (2016)	SA2 name (2016)
Redcliffe catchment	**Redcliffe – North Lakes**	Narangba – Burpengary (Partial)	Deception Bay
		North Lakes	Dakabin - Kallangur
		North Lakes	Murrumba Downs - Griffin
		North Lakes	North Lakes - Mango Hill
		Redcliffe	Clontarf
		Redcliffe	Margate - Woody Point
		Redcliffe	Redcliffe
		Redcliffe	Rothwell - Kippa-Ring
		Redcliffe	Scarborough - Newport - Moreton Island
		Sandgate (Partial)	Brighton
Caboolture / Kilcoy catchment	**Moreton Bay North**	Bribie - Beachmere	Beachmere - Sandstone Point
		Bribie - Beachmere	Bribie Island
		Caboolture	Burpengary - East
		Caboolture	Caboolture
		Caboolture	Caboolture - South
		Caboolture	Elimbah
		Caboolture	Morayfield - East
		Caboolture	Wamuran
		Caboolture Hinterland	Kilcoy
		Caboolture Hinterland	Woodford - D'Aguilar
		Narangba – Burpengary (Partial – Excludes Deception Bay)	Burpengary
		Narangba - Burpengary	Morayfield
		Narangba - Burpengary	Narangba
		Narangba - Burpengary	Upper Caboolture
RBWH catchment	**Brisbane Inner City**	Brisbane Inner	Brisbane City
		Brisbane Inner	Fortitude Valley
		Brisbane inner	New Farm
		Brisbane Inner	Spring Hill
		Brisbane Inner - North	Albion
		Brisbane Inner - North	Alderley
		Brisbane Inner - North	Ascot
		Brisbane Inner - North	Clayfield
		Brisbane Inner - North	Grange
		Brisbane Inner - North	Hamilton (Qld)
		Brisbane Inner - North	Hendra
		Brisbane Inner - North	Kelvin Grove - Herston
		Brisbane Inner - North	Newmarket
		Brisbane Inner - North	Newstead - Bowen Hills
		Brisbane Inner - North	Wilston
		Brisbane Inner - North	Windsor
		Brisbane Inner - North	Wooloowin - Lutwyche
		Brisbane Inner - West	Ashgrove

		Brisbane Inner - West	Auchenflower
		Brisbane Inner - West	Bardon
		Brisbane Inner - West	Paddington - Milton
		Brisbane Inner - West	Red Hill (Qld)
		Brisbane Inner - West	Toowong
	Brisbane West	Kenmore - Brookfield - Moggill	Bellbowrie - Moggill
		Kenmore - Brookfield - Moggill	Brookfield - Kenmore Hills
		Kenmore - Brookfield - Moggill	Chapel Hill
		Kenmore - Brookfield - Moggill	Fig Tree Pocket
		Kenmore - Brookfield - Moggill	Kenmore
		Kenmore - Brookfield - Moggill	Pinjarra Hills - Pullenvale
		Sherwood - Indooroopilly	Indooroopilly
		Sherwood - Indooroopilly	St Lucia
		Sherwood - Indooroopilly	Taringa
		The Gap - Enoggera	Enoggera
		The Gap - Enoggera	Enoggera Reservoir
		The Gap - Enoggera	Keperra
		The Gap - Enoggera	Mitchelton
		The Gap - Enoggera	Mount Coot-tha
		The Gap - Enoggera	The Gap
		The Gap - Enoggera	Upper Kedron - Ferny Grove
TPCH catchment	**Brisbane North**	Bald Hills - Everton Park	Bald Hills
		Bald Hills - Everton Park	Bridgeman Downs
		Bald Hills - Everton Park	Carseldine
		Bald Hills - Everton Park	Everton Park
		Bald Hills - Everton Park	McDowall
		Chermside	Aspley
		Chermside	Chermside
		Chermside	Chermside West
		Chermside	Geebung
		Chermside	Kedron - Gordon Park
		Chermside	Stafford
		Chermside	Stafford Heights
		Chermside	Wavell Heights
		Nundah	Boondall
		Nundah	Brisbane Airport
		Nundah	Eagle Farm - Pinkenba
		Nundah	Northgate - Virginia
		Nundah	Nudgee - Banyo
		Nundah	Nundah
		Sandgate (Partial – Excludes Brighton)	Bracken Ridge
		Sandgate	Deagon
		Sandgate	Sandgate - Shorncliffe
		Sandgate	Taigum - Fitzgibbon
		Sandgate	Zillmere
	Pine Rivers	Strathpine	Bray Park
		Strathpine	Lawnton

		Strathpine	Petrie
		Strathpine	Strathpine - Brendale
		The Hills District	Albany Creek
		The Hills District	Cashmere
		The Hills District	Dayboro
		The Hills District	Eatons Hill
		The Hills District	Samford Valley
		The Hills District	The Hills District

Appendix 3 - Statistical areas level three used in this report