Central Queensland Wide Bay Sunshine Coast PHN General Health: Health Needs and Service Analysis

15/11/2021

Contents

Acronyms

ABS	Australian Bureau of Statistics
AEDC	Australian Early Development Census
AIHW	Australian Institute of Health and Welfare
ASR	Age Standardised Rate
CALD	Culturally and linguistically diverse
CATI	Computer-assisted telephone interviewing
CHO	Chief health Officer
CHSP	Commonwealth Home Support Program
COPD	Chronic obstructive pulmonary disease
CQ	Central Queensland
CQWBSCPHN	Central Queensland Wide Bay Sunshine Coast PHN
CVD	Cardiovascular disease
DoH	Department of Health
ED	Emergency Department
GP	General Practitioner
HACC	Home and Community Care Services
HHS	Hospital and Health Service
HNA	Health Needs Assessment
HWQ	Health Workforce Queensland
LGA	Local Government Area
LGBTI	Lesbian, gay, bisexual, transgender, intersex
MBS	Medicare Benefits Schedule
MHSRRA	Mental Health Services for Rural and Remote Areas
NDIS	National Disability Insurance Scheme
NGO	Non-government organisation
NHPA	National Health Performance Authority
PANDA	Perinatal Anxiety and Depression Australia
PHIDU	Public Health Information Development Unit
PHN	Public Health Network
PPH	Potentially Preventable Hospitalisation
QGSO	Queensland Government Statisticians Office
QH	Queensland Health
QNADA	Queensland Network of Alcohol and other Drugs
QPS	Queensland Police Services
RMHS	Rural Mental Health Service
RPHS	Rural Primary Health Service
SA2	Statistical Area 2
SA3	Statistical Area 3
SC	Sunshine Coast
SDH	Social Determinants of Health
SEIFA	Socio-Economic Indexes for Areas
WB	Wide Bay
WHO	World Health Organisation

1. Overview

The Central Queensland, Wide Bay, Sunshine Coast PHN (the PHN) catchment covers approximately 161,000 square kilometres and includes three areas: Central Queensland, Sunshine Coast and Wide Bay. These three areas align with the three Hospital and Health Services (HHSs) and are also divided into 12 Local Government Areas (LGAs).

The 2021-24 Health Needs Assessment presents the key demographic, socio-economic, health and health systems-related information for the PHN. The main objectives are a) providing a comprehensive analysis of health needs in the PHN; b) assembling, examining and triangulating the best available evidence to inform the annual planning cycle; and c) work with stakeholders in assessing the key priority themes for effective health planning and future resource allocation according to need.

Various sources of quantitative and qualitative information were examined to undertake this needs assessment. The aim was to inform evidence-based discussions on current needs and gaps in services to identify the key populations, health conditions, and service improvement areas. These priorities will be the focus of the PHNs efforts and resources. Priority setting was also informed by the six PHN priorities identified: aged care, mental health, alcohol and other drugs, Aboriginal and/or Torres Strait Islander health, population health, and e-health. To effectively address the burden of ill health and improve quality of life, key service improvement areas were identified that cover access to primary care and system coordination, integration, and collaboration.

This report is organised as follows. Chapter 2 discusses the overall methodological approach, which drew on both quantitative and qualitative information. Chapters 2 and 3 provide an overview of the PHN population and the health service delivery system. This includes the PHN region and its demographics, key socio-economic characteristics of the population, health behaviours and health status and health system performance. These chapters provide the foundation for the subsequent discussion on priorities presented in Chapters 4 and 5.

The PHN priorities, as discussed in this report, are organised along similar themes (populations, health areas and health system). Chapter 6 discusses the key priority health system issues, which focus on access to primary care and system coordination and integration along with triangulating the information with socio-demographic and health needs information. The final chapter presents the Options for Action that have been identified to address the above priorities.

The PHN geography is divided into multiple levels on which data is reported: Statistical Area 2 (SA2), Statistical Area3 (SA3), Local Government Areas (LGAs) and Hospital and Health Service regions (HHSs). Not all data is available on all the levels and variability in reporting challenging to report for needs assessment. The regions within the PHN are summarised below.

Methodology

Hospital Health Service Regions	Local Government Areas within HHS	Statistical Area Level 3 with HHS
Central Queensland	Banana (S) Central Highlands (R) Gladstone (R) Livingstone (S) Rockhampton (R) Woorabinda (S)	*Biloela** Central Highlands (Qld) Gladstone Rockhampton
Wide Bay	Bundaberg (R) North Burnett (R) Fraser Coast (R)	Bundaberg *Burnett** Hervey Bay Maryborough
Sunshine Coast	Sunshine Coast (R) Noosa (S) Gympie (R)	Buderim Caloundra Gympie - Cooloola Maroochy Nambour Noosa Noosa Hinterland Sunshine Coast Hinterland

**Not full Biloela and Burnett region is within the PHN*

Note that LGA and SA3 areas do not match in geography but are within each HHS

A range of quantitative indicators were examined in relation to determinants of health, health status, and health system performance – based on the structure of the National Health Performance Framework. A large number of data sources was consulted and examined. They include data available at national (i.e. Australian Bureau of Statistics and the Australian Institute of Health and Welfare), state (Queensland Health and Queensland Governments Statistician's Office) and local level (i.e. PHN available data). Where data permitted, indicators were reported to the lowest geographic level possible (e.g. LGA) to enable specific locations and populations within the PHN boundaries to be explored. This facilitated targeting of strategies and actions to relevant localities. The approach proved useful in uncovering the diverse nature of communities and service patterns within the PHN catchment. Data were compared with national averages or Queensland averages where possible. In addition, rankings of information against other PHNs was explored to provide information about how an indicator relates to populations outside of the PHN catchment. Wherever possible, comparisons of data by LGA or SA3, were undertaken to enable within- catchment comparisons to be made in order to understand the distribution of particular population characteristics or trends.

In relation to ***service capacity and mapping***, a comprehensive mapping exercise was undertaken by commissioning Health Workforce Queensland to map the services. The learnings from this mapping are included where appropriate in all four health needs assessment reports.

The PHN also undertook extensive ***community consultation*** to gain an understanding of health needs, health service gaps and providing an opportunity to inform the service planning within their communities. These groups were"

- Stakeholder consultation (240 complete surveys)
- Overall community consultation (612 complete surveys)
- Aboriginal and Torres Straits Islander people consultation (603 complete surveys)

Information obtained through quantitative data analysis (comparative and expressed need) was combined with qualitative information (felt and normative need) to arrive at a set of prioritised needs and issues within the catchment. In relation to the shortlisted issues and needs identified through consultations the PHN staff members and team leads were asked to identify any options for actions that they considered to be beneficial in addressing the identified needs. Based on the range of ideas put forward through this process, a number of options were combined into higher level strategies based on national or state strategies or plans and systematic reviews or reports.

Workshops were conducted to present the needs analysis findings and generate conversations regarding how to address the findings. Senior members of the PHN staff rated each priority in terms of potential effectiveness, affordability, feasibility, acceptability, appropriateness and equity, and alignment with national/state policy objectives and PHNs strategic directions - to produce a prioritised list of options for actions. Each senior staff member ranked the priorities which were then analysed to generate the final list of priorities.

Limitations

Data for specific population groups is often unavailable at the local level. Groups include young people (although there is a National Youth Information Framework and indicators (reported by AIHW), data is not generally available at the LGA level) and Aboriginal and/or Torres Strait Islander people -often limited to state and national levels-. Additionally, LGA level indicators are not always available for all the LGAs, in particular Livingstone and Noosa. The PHN have used the qualitative data to close the gap in this information wherever possible.

2. Population Distribution and Projections

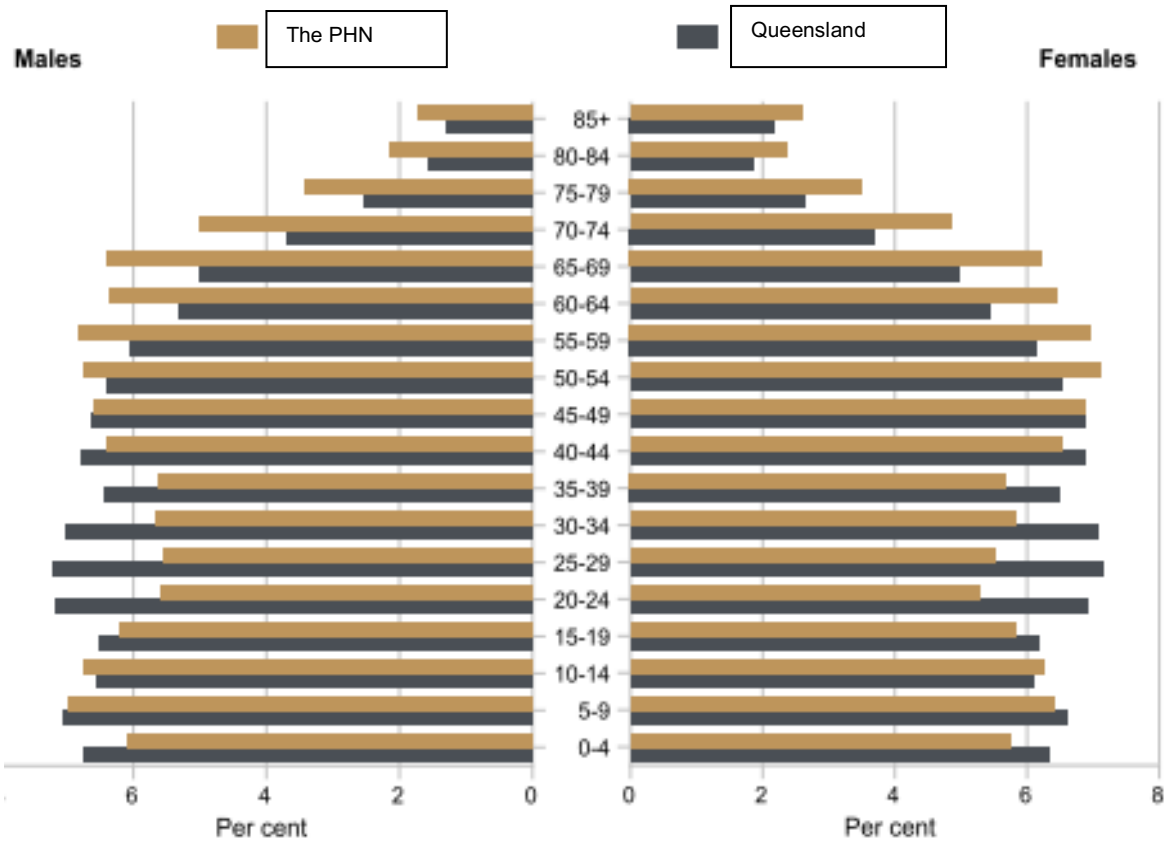
Population distribution with respect to size, composition, spatial distribution, and changes in the population that occur over time can help to understand changes in the composition of the population to plan for health care services and associated community services. The age of residents, gender, occupation, level of education, marital status, and living arrangements provide planners with the type of information needed to plan for the residents' diverse needs. Also, knowing age distribution is of critical importance since it is closely related to the demand for different types of services. A population composition that has a large percentage of residents under age 15 implies the need for health services including paediatrics and recreational needs. Gender is another key factor. For example, women, especially in their early reproductive years, 20–35 years, may need maternity services. This chapter summarises population distribution across the PHN.

2.1. Population distribution

The estimated residential population of the CQWBSCPHN region was 876,789 people as of June 2019 (1). Current population projections estimate the PHN region population will increase to 1,118,487 (1.4% average annual growth) usual residents by 2036.

- There are 263,436 young people (0 to 24 years) living within the PHN (almost 30% of the PHN population). Almost 19% of the PHN population is aged 0 to 14 years and 11% aged 15 to 24 years. ***Central Queensland area has highest proportion of young people (0-24 years) within the PHN.*** In Woorabinda (51%) this proportion is 20% higher compared to Qld (31.2%) followed by Central Highlands (36%), Gladstone and Rockhampton (around 34%).(1) (see Table 1)
- Around 20% of the PHN population (n=180,920) is aged 65 and above (Qld=15.7%). ***The highest proportion of elderly reside in Wide Bay area (25.9%) followed by Sunshine Coast (21.5%)***. The LGAs with highest % of elderly are Fraser coast (27.8%), Noosa (25.6%), North Burnett (24.5%) and Bundaberg (24.1%) (1). (See
- Table 2 below)
- The gender distribution for the PHN in 2016 is seen in the below. Table 1 also includes the gender distribution for various age groups within the PHN, 2019.

Graph 1: Gender distribution within the PHN, 2016



- At least 29,567 Aboriginal and/or Torres Strait Islander people were residents of the PHN region on Census night in 2016. In total, Aboriginal and/or Torres Strait Islander people represented 3.6% of the PHN population (QLD 4%) that includes the LGA that is an Aboriginal Community (Woorabinda with 94.4%) (1). Apart from Woorabinda the LGAs with highest proportion of people who identify themselves as Aboriginal and Torres Strait Islander are: Rockhampton (7.4%), North Burnett (6.5%) and Livingstone (4.4%); making ***Central Queensland the area with highest proportion of Indigenous people within the PHN*** *(1)*. (See Table 3 below.)
- Compared to Qld (11.1%) a small proportion of people born in non-English speaking countries reside within the PHN (5.4%). The proportion is highest in Noosa (6.6%) flowed by Gladstone and Sunshine Coast (both 6.1%) (1). (See Table 3 below.)
- Around 72,800 people (8.9%) lived in outer regional, remote or very remote locations within the PHN in 2019. This proportion was highest in Central Queensland area (25.2%, n=55,698) followed by Wide Bay area (7.3%, n=15,002). Almost 100% of population from the four LGAs within the PHN (Banana, Central Highlands, Woorabinda and North Burnett) lives in remote areas. (See Table 3 below.)

Table 1: Gender distribution within the PHN by age groups, June 2019

	Total Females	0 to 4		5 to 24		25 to 44		45 to 64		>=65		>=80	
The PHN	444,608	23,869	5.4	104,706	23.6	100,815	22.7	121,731	27.4	93,487	21.0	23,799	5.4
Central Queensland Area	**112,151**	**7,802**	**7.0**	**29,989**	**26.7**	**29,758**	**26.5**	**28,445**	**25.4**	**16,157**	**14.4**	**4,205**	**3.7**
Banana (S)	6,868	505	7.4	1,771	25.8	1,781	25.9	1,755	25.6	1,056	15.4	302	4.4
Central Highlands (R) (Qld)	13,619	1,175	8.6	3,809	28.0	4,309	31.6	3,190	23.4	1,136	8.3	204	1.5
Gladstone (R)	31,094	2,302	7.4	8,469	27.2	8,622	27.7	8,080	26.0	3,621	11.6	756	2.4
Livingstone (S)	18,609	983	5.3	4,487	24.1	4,100	22.0	5,359	28.8	3,680	19.8	941	5.1
Rockhampton (R)	41,431	2,773	6.7	11,247	27.1	10,825	26.1	9,956	24.0	6,630	16.0	1,997	4.8
Woorabinda (S)	530	64	12.1	206	38.9	121	22.8	105	19.8	34	6.4	5	0.9
Wide Bay Area	**107,832**	**5,122**	**4.7**	**23,045**	**21.4**	**21,495**	**19.9**	**30,083**	**27.9**	**28,087**	**26.0**	**6,872**	**6.4**
Bundaberg (R)	48,541	2,352	4.8	10,867	22.4	10,241	21.1	13,214	27.2	11,867	24.4	3,121	6.4
Fraser Coast (R)	54,166	2,516	4.6	11,030	20.4	10,179	18.8	15,464	28.5	14,977	27.7	3,440	6.4
North Burnett (R)	5,125	254	5.0	1,148	22.4	1,075	21.0	1,405	27.4	1,243	24.3	311	6.1
Sunshine Coast Area	**224,625**	**10,945**	**4.9**	**51,672**	**23.0**	**49,562**	**22.1**	**63,203**	**28.1**	**49,243**	**21.9**	**12,722**	**5.7**
Gympie (R)	26,161	1,328	5.1	5,746	22.0	5,284	20.2	7,655	29.3	6,148	23.5	1,392	5.3
Noosa (S)	28,774	1,101	3.8	5,885	20.5	5,354	18.6	9,114	31.7	7,320	25.4	1,709	5.9
Sunshine Coast (R)	169,690	8,516	5.0	40,041	23.6	38,924	22.9	46,434	27.4	35,775	21.1	9,621	5.7
	Total Males	0 to 4		5 to 24		25 to 44		45 to 64		>=65		>=80	
The PHN	432,181	24,645	5.7	110,216	25.5	95,872	22.2	114,015	26.4	87,433	20.2	18,418	4.3
Central Queensland Area	**114,724**	**7,976**	**7.0**	**31,749**	**27.7**	**29,575**	**25.8**	**29,880**	**26.0**	**15,544**	**13.5**	**2,981**	**2.6**
Banana (S)	7,288	504	6.9	1,867	25.6	1,903	26.1	1,917	26.3	1,097	15.1	211	2.9
Central Highlands (R) (Qld)	15,082	1,242	8.2	4,127	27.4	4,442	29.5	3,892	25.8	1,379	9.1	219	1.5
Gladstone (R)	32,318	2,315	7.2	9,074	28.1	8,256	25.5	8,994	27.8	3,679	11.4	506	1.6
Livingstone (S)	19,469	1,123	5.8	4,920	25.3	4,389	22.5	5,411	27.8	3,626	18.6	731	3.8
Rockhampton (R)	40,081	2,741	6.8	11,564	28.9	10,453	26.1	9,581	23.9	5,742	14.3	1,305	3.3
Woorabinda (S)	486	51	10.5	197	40.5	132	27.2	85	17.5	21	4.3	9	1.9
Wide Bay Area	**105,335**	**5,359**	**5.1**	**24,844**	**23.6**	**20,211**	**19.2**	**27,609**	**26.2**	**27,312**	**25.9**	**5,546**	**5.3**
Bundaberg (R)	47,315	2,539	5.4	11,678	24.7	9,565	20.2	12,296	26.0	11,237	23.7	2,403	5.1
Fraser Coast (R)	52,546	2,544	4.8	11,924	22.7	9,552	18.2	13,809	26.3	14,717	28.0	2,835	5.4
North Burnett (R)	5,474	276	5.0	1,242	22.7	1,094	20.0	1,504	27.5	1,358	24.8	308	5.6
Sunshine Coast Area	**212,122**	**11,310**	**5.3**	**53,623**	**25.3**	**46,086**	**21.7**	**56,526**	**26.6**	**44,577**	**21.0**	**9,891**	**4.7**
Gympie (R)	26,285	1,411	5.4	6,361	24.2	4,838	18.4	7,354	28.0	6,321	24.0	1,206	4.6
Noosa (S)	27,099	1,096	4.0	6,282	23.2	4,854	17.9	7,886	29.1	6,981	25.8	1,405	5.2
Sunshine Coast (R)	158,738	8,803	5.5	40,980	25.8	36,394	22.9	41,286	26.0	31,275	19.7	7,280	4.6

Source: Queensland Government Statistician's Office, Queensland Treasury 2018. Queensland Regional Profiles. Available from: http://www.qgso.qld.gov.au

Table 2: Population distribution by age groups, the PHN, 2016

Geography	Total Population, 2016	Total Population 2019 Jun	Change in ERP from 2016 to 2019	Population aged 0-14 years, 2019		Population aged 15-24 years, 2019		Population aged 0-24 years, 2019		Population aged 65 years and over, 2019	
	N	N	N	N	%	N	%	N	%	N	%
Queensland	4,845,152	5,094,510	+249,358	989,819	19.4	661,901	13.0	1,651,720	32.4	799,924	15.7
Central Queensland, Wide Bay, Sunshine Coast PHN	842,048	876,789	+34,741	163,880	18.7	99,556	11.4	263,436	30.0	180,920	20.6
PHN Areas								0			
Central Queensland Area	**226,316**	**226,875**	**+559**	**49,484**	**21.8**	**28,032**	**12.4**	**77,516**	**34.2**	**31,701**	**14.0**
Banana (S)	14,570	14,156	-414	3,153	22.3	1,494	10.6	4,647	32.8	2,153	15.2
Central Highlands (R) (Qld)	28,690	28,701	+11	7,271	25.3	3,082	10.7	10,353	36.1	2,515	8.8
Gladstone (R)	63,017	63,412	+395	14,567	23.0	7,593	12.0	22,160	34.9	7,300	11.5
Livingstone (S)	36,950	38,078	+1,128	7,126	18.7	4,387	11.5	11,513	30.2	7,306	19.2
Rockhampton (R)	81,322	81,512	+190	17,030	20.9	11,295	13.9	28,325	34.7	12,372	15.2
Woorabinda (S)	999	1,016	+17	337	33.2	181	17.8	518	51.0	55	5.4
Wide Bay Area	**208,096**	**213,875**	**+5,779**	**36,384**	**17.0**	**21,986**	**10.3**	**58,370**	**27.3**	**55,399**	**25.9**
Bundaberg (R)	94,256	95,856	+1,600	16,795	17.5	10,641	11.1	27,436	28.6	23,104	24.1
Fraser Coast (R)	102,962	106,712	+3,750	17,772	16.7	10,242	9.6	28,014	26.3	29,694	27.8
North Burnett (R)	10,646	10,599	-47	1,817	17.1	1,103	10.4	2,920	27.5	2,601	24.5
Sunshine Coast Area	**407,638**	**436,747**	**+29,109**	**78,012**	**17.9**	**49,538**	**11.3**	**127,550**	**29.2**	**93,820**	**21.5**
Gympie (R)	50,327	52,446	+2,119	9,512	18.1	5,334	10.2	14,846	28.3	12,469	23.8
Noosa (S)	53,922	55,873	+1,951	8,813	15.8	5,551	9.9	14,364	25.7	14,301	25.6
Sunshine Coast (R)	302,841	328,428	+25,587	59,687	18.2	38,653	11.8	98,340	29.9	67,050	20.4

Source: Queensland Government Statistician's Office, Queensland Treasury 2018. Queensland Regional Profiles. Available from: http://www.qgso.qld.gov.au

Table 3 : Population distribution, by characteristics, the PHN 2016

Geography	Indigenous, 2016		Born overseas, 2016		Born overseas in NESB country, 2016		Population living in outer regional, remote, or very remote, 2016	
	N	%	N	%	N	%	N	%
Queensland	148,943	4.0	1,015,875	21.6	522,810	11.1	791,680	16.8
the PHN	29,567	3.6	124,713	15.2	44,554	5.4	72,807	8.9
PHN Areas								
Central Queensland Area	12,681	5.7	24,293	10.7	11,262	5.0	**55,698**	**25.2**
Banana (S)	579	4.0	1,174	8.2	689	4.8	14,319	100
Central Highlands (R) (Qld)	1,210	4.3	3,039	10.9	1,200	4.3	27,999	100
Gladstone (R)	2,503	4.1	8,921	14.5	3,789	6.1	8,516	13.8
Livingstone (S)	1,607	4.4	3,651	10.1	1,138	3.1	1,959	5.4
Rockhampton (R)	5,874	7.4	7,494	9.4	4,442	5.6	1,943	2.4
Woorabinda (S)	908	94.4	14	1.5	4	0.4	962	100
Wide Bay Area	8,617	4.2	26,252	12.6	10,220	4.9	**15,002**	**7.3**
Bundaberg (R)	3,708	4.0	11,108	12.0	4,798	5.2	4,047	4.4
Fraser Coast (R)	4,231	4.2	14,162	14.0	4,838	4.8	477	0.4
North Burnett (R)	678	6.5	982	9.4	584	5.6	10,478	100
Sunshine Coast Area	8,269	2.1	74,168	18.2	23,072	5.7	**2,107**	**0.5**
Gympie (R)	1,771	3.6	5,342	10.8	1,810	3.7	2,107	4.3
Noosa (S)	782	1.5	11,270	21.6	3,439	6.6	0	0
Sunshine Coast (R)	5,716	1.9	57,556	19.6	17,823	6.1	0	0

Source: Queensland Government Statistician's Office, Queensland Treasury 2018. Queensland Regional Profiles. Available from: http://www.qgso.qld.gov.au

2.2. Population Projections

It is important to predict population growth so that demand on health services can be predicted and supply can be planned. Due to the impact of COVID pandemic, Sunshine Coast region has seen far more migration and increase in the population. However, as data is from 2016 census, this is only reflected in qualitative information gathered via a survey and from conversations with the local community.

The predictions based on the 2016 data indicate that:(2)

- Till 2031 (from 2021) there will be 140,765 more people within the PHN indicating 24% increase in the population over 10 years. (Qld 18% growth)
- The highest increase will be for Sunshine Coast area (94,876 people), followed by Central Queensland (23,078) and Wide Bay (22,811).
- The LGAs with highest increase will be Sunshine Coast (85,361), Fraser Coast (12,342) and Bundaberg (10,533). The population of Woorabinda is projected to reduce by 49 people from 2021 to 2031.

When focused on natural increase in the population, within the PHN, in 2019, there were 9,160 births and 6,999 deaths indicating natural increase of 2,161 people. The birth rate within the PHN (10.4 per 1000 persons) is lower compared to Qld (12.1 per 1000 persons). This rate is highest in Woorabinda (16.7), followed by Central highlands (15.4) and Gladstone and Rockhampton (both around 13 per 1000 people).(1)

Graph 1: Population distribution in 2041, the PHN region, increase based on 2016 population numbers

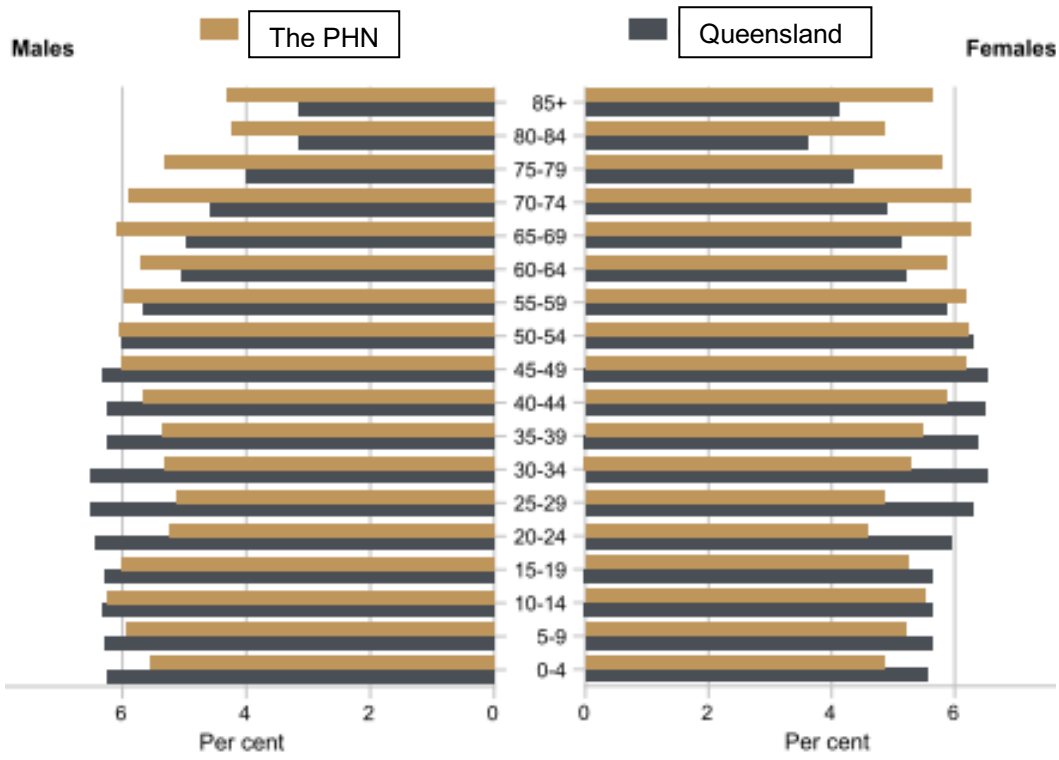


Table 4: Population projections and change in population over next 10 years, based on 2019 population, the PHN

Total Population							Change (%)	Change (N)
Geography	2016	2021	2026	2031	2036	2041	From 2021 to 2031	From 2021 to 2031
Queensland	4,848,877	5,261,567	5,722,780	6,206,566	6,686,604	7,161,661	18.0	944,999
The PHN	842,057	909,690	979,858	1,050,455	1,118,486	1,183,483	15.5	140,765
Central Queensland Area	**226,314**	**230,866**	**240,951**	**253,944**	**266,946**	**279,470**	**10.0**	**23,078**
Banana (S)	14,607	14,008	13,677	13,518	13,377	13,247	-3.5	-490
Central Highlands (R) (Qld)	28,783	28,658	28,845	29,319	29,755	30,133	2.3	661
Gladstone (R)	63,288	63,938	66,800	70,273	72,935	75,327	9.9	6,335
Livingstone (S)	37,055	38,771	42,020	46,480	51,421	55,740	19.9	7,709
Rockhampton (R)	81,589	84,532	88,680	93,444	98,567	104,153	10.5	8,912
Woorabinda (S)	992	959	929	910	891	870	-5.1	-49
Wide Bay Area	**208,029**	**218,835**	**230,330**	**241,646**	**251,633**	**260,922**	**10.4**	**22,811**
Bundaberg (R)	94,453	100,281	105,982	110,814	115,365	119,730	10.5	10,533
Fraser Coast (R)	102,953	107,817	113,679	120,159	125,633	130,630	11.4	12,342
North Burnett (R)	10,623	10,737	10,669	10,673	10,635	10,562	-0.6	-64
Sunshine Coast Area	**407,714**	**459,989**	**508,577**	**554,865**	**599,907**	**643,091**	**20.6**	**94,876**
Gympie (R)	50,292	52,257	54,378	56,440	58,461	60,088	8.0	4,183
Noosa (S)	54,033	56,308	59,357	61,640	63,411	64,999	9.5	5,332
Sunshine Coast (R)	303,389	351,424	394,842	436,785	478,035	518,004	24.3	85,361

Source: Queensland Government Statistician's Office, Queensland Treasury 2018. Queensland Regional Profiles. Available from: http://www.qgso.qld.gov.au

2.3. Life Expectancy and Median Age

Life expectancy is the most commonly used measure to describe population health and reflects the overall mortality level of a population. Life expectancy in Australia has improved dramatically for both sexes in the last century, particularly life expectancy at birth. Compared with their counterparts in 1881–1900, boys and girls born in 2017–2019 can expect to live around 30 years longer. (3). In Australia, a boy born in 2017–2019 can expect to live to the age of 80.9 years and a girl would be expected to live to 85.0 years.

Median age provides an important single indicator of the age distribution of a population. Graph 1 and show the age and gender distribution for the PHN in 2016 and in 2041. The change overtime in median age (Table 5) indicates aging population, especially in the areas such as Livingstone (5.9 years increase in median age by 2041), Fraser Coast (4.7 years increase) and Gympie (3.9 years increase) within the PHN.

Table 5: Median age projections by LGAs, the PHN and Queensland, 2021-2041.

The PHN / LGA / State	As of 30 June (in years)			Change
	2021	2031	2041	2021–2041
Queensland	**37.9**	**39.4**	**40.7**	**2.8**
The PHN	**42.9**	**44.5**	**46.2**	**3.3**
Banana (S)	38.6	40.7	42.2	3.6
Central Highlands (R)	33.9	35.4	36.3	2.4
Gladstone (R)	36.6	38.1	39.0	2.4
Livingstone (S)	44.9	48.5	50.8	5.9
Woorabinda (S)	22.7	23.4	23.8	1.1
Rockhampton (R)	36.8	38.5	39.7	2.9
Bundaberg (R)	45.4	46.4	48.0	2.7
Fraser Coast (R)	49.8	52.7	54.5	4.7
North Burnett (R)	46.6	47.9	49.9	3.3
Gympie (R)	47.5	49.7	51.4	3.9
Noosa (S)	49.0	50.8	52.6	3.6
Sunshine Coast (R)	42.1	43.2	44.9	2.8

Source: Queensland Government Statistician's Office, Queensland Treasury 2018. Queensland Regional Profiles. Available from: http://www.qgso.qld.gov.au

In summary,

Almost 30% of the PHN population is between 0-24 years and highest proportion was in Woorabinda (51%), Central Highlands (36%), Gladstone and Rockhampton (around 34%).

Around 20% of the population is 65 and above which is 5% higher compared to Qld with highest proportion in Fraser coast (27.8%), Noosa (25.6%), North Burnett (24.5%) and Bundaberg (24.1%).

Highest proportion of Aboriginal and Torres Strait Islander people is in Woorabinda (94.4%) followed by Rockhampton (7.4%), North Burnett (6.5%) and Livingstone (4.4%); making Central Queensland the area with highest proportion of Indigenous people within the PHN

The LGAs with highest increase in the population from 2021 to 2031 will be Sunshine Coast (85,361), Fraser Coast (12,342) and Bundaberg (10,533).

Increase in median age projection indicate aging population. This increase from 2021 to 2041 is precited to be highest in Livingstone (5.9 years) followed by Fraser Coast (4.7 years) and Gympie (3.9 years)

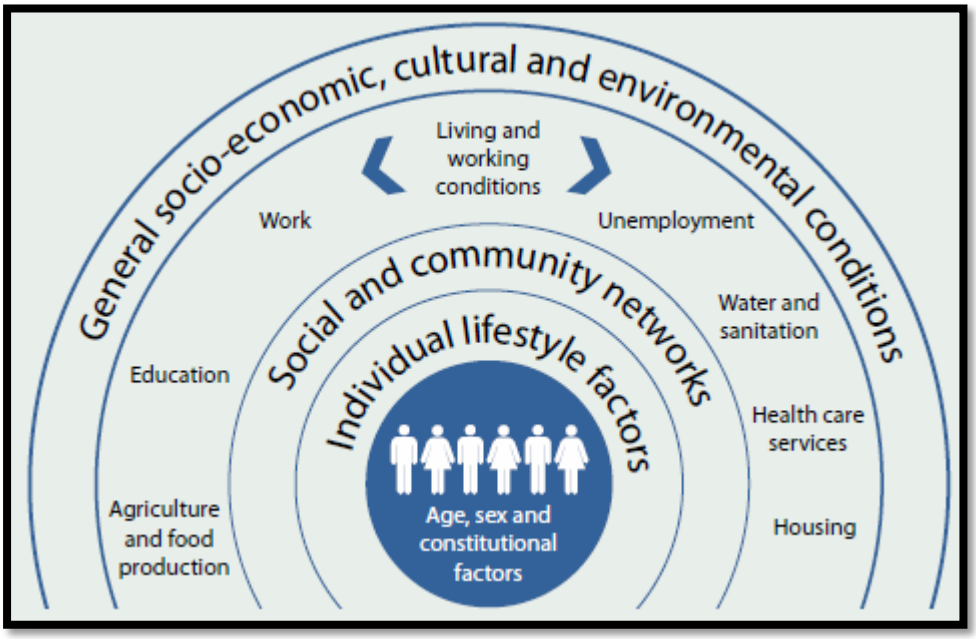
3. Socio-economic Determinants of Health

The range of socio-ecological factors including environmental, social, political, institutional and cultural factors that influence health status are known as the determinants of health. These are often complex and interrelating factors that contribute to a person's current state of health and their chances of maintaining good health or becoming ill or injured. Circumstances are shaped by the distribution of money, power, and resources at the domestic and local level.(4) The social determinants of health are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. The SDH have an important influence on health inequities - the unfair and avoidable differences in health status seen within and between various regions. Various areas at all levels of income, health and illness follow a social gradient: the lower the socioeconomic position, the worse the health. The following list provides examples of the social determinants of health, which can influence health equity in positive and negative ways:

- Income and social protection
- Education
- Unemployment and job insecurity
- Working life conditions
- Housing, basic amenities and the environment
- Early childhood development
- Social inclusion and non-discrimination

Research shows that the social determinants can be more important than health care or lifestyle choices in influencing health. Addressing SDH appropriately is fundamental for improving health and reducing longstanding inequities in health, which requires action by all sectors and not only health services. Early life experiences, housing conditions, transportation and access to health services are other commonly accepted social determinants of health (5). Most of these social determinants are closely related; for example, higher levels of education usually lead to better employment prospects and higher incomes, and that leads to healthier housing conditions. Figure 1 below summarises key determinants of health within an ecological framework.(6)

Figure 1: Social Determinants of Health



Source: Dahlgren and Whitehead (1991)

Determinants on which data is available in relation to the PHN and are relevant to this framework are included below.

3.1.1. Index of Socio-economic disadvantage

Socio-Economic Indexes for Areas (SEIFA) is a summary measure of the social and economic conditions of geographic areas across Australia. The 2016 Socio-Economic Index for Areas (SEIFA) focuses on income, education attainment, unemployment, and dwellings without motor vehicles. Low index values represent areas of most disadvantage and high values represent areas of least disadvantage. Low socio-economic status is associated with poor health, with people of lower socio-economic status bearing a significantly higher burden of disease. The SEIFA indicates that some areas within the PHN are more disadvantaged compared to Queensland (1).(See Table 7 for details).

- In 2016, 8.8% of the population in the PHN catchment was in the least disadvantaged quintile, while 27.1% was in the most disadvantaged quintile (QLD 20%)
- Within the PHN catchment, Central Highlands LGA had the largest percentage of persons in the least disadvantaged quintile (26.0%).
- LGAs with high proportions of the population in the most disadvantaged quintile were Woorabinda (100% of population), Fraser Coast (59.4%), North Burnett (57.1%), Bundaberg (49.5%), Gympie (46.1%) and Rockhampton (39.1%)

3.1.2. Remoteness

Numerous studies have demonstrated that Australians living in remote or very remote areas have, on average, higher rates of risky health behaviours, such as smoking, poorer access to health services, and worse health than people living in regional or metropolitan areas. The PHN catchment includes a high proportion of people living outside major cities and includes significant numbers of people living in locations classified as rural and remote, predominantly in the Central Queensland area. The rate of disease burden in remote and very remote areas was 1.4 times as high as major cities; most notably for kidney and urinary diseases, injuries, infectious diseases, endocrine disorders and cardiovascular diseases (7).

- The PHN was home to more than 840,000 people in 2016. According to ABS Census 2016, the majority of the PHN population (58% or 476,000 people) lived in inner regional areas, 33% lived in major cities (273,000 people in Sunshine Coast and Noosa LGAs) and the remaining 9% (73,000 people) lived in outer regional, remote or very remote areas (1). (See Table 3 for details)
- Just over one quarter (25.2%) of the population in Central Queensland (CQ) area lived in outer regional, remote or very remote areas; Wide Bay (WB) area 7.3%; Sunshine Coast (SC) area 0.5%; Queensland (QLD) 16.8% (1).
- Four of the 12 LGAs in the PHN catchment had 100% of their populations living in outer regional or remote/very remote areas (1):
    - Woorabinda in CQ (of which 100% are remote)
    - Central Highlands in CQ (of which 27% are remote or very remote)
    - Banana in CQ (of which 11% are remote)
    - North Burnett in WB (of which 2% are remote)
- For 13 out of 101 SA2 regions more than 50% of population lives in outer regional, remote or very remote areas (8)
    - 100% living in outer regional, remote or very remote: Agnes Water - Miriam Vale, Banana, Biloela, Central Highlands – East, Central Highlands – West, Emerald, Gayndah – Mundubbera, Monto – Eidsvold, North Burnett, Shoalwater Bay
    - Gin Gin (71%), Kingaroy Region – North (65.3%), Kilkivan (57%)

3.1.3. Education

Education plays an important role in health by not only improving job opportunities but also by improving health literacy and skills to navigate health system. Within the PHN (in 2016) (1),

- 326,658 persons (or 50.8%) were with highest level of schooling of Year 11 or 12 (or equivalent) (Qld 58.9%)
- Noosa (S) LGA had the largest percentage of people with highest level of schooling was Year 11 or 12 (or equivalent) with 59.7%, followed by Sunshine Coast (58.1%) and Gladstone (52.7%)
- 48 out of 101 SA2 regions had >50% of people whose highest level of schooling was Year 11 or 12 (or equivalent). Highest was Sunshine Beach (70.5%) followed by Peregian Beach-Marcus Beach (70.3%) and Mountain Creek (67.9%).
- Within the region, North Burnett (R) LGA had the largest percentage whose highest level of schooling was Year 8 or below (or did not go to school) with 12.9%, followed by Woorabinda (10.2%) and Banana (9.8%)
- 18 out of 101 SA2 regions had >10% of people whose highest level of schooling was Year 8 or below (or did not go to school). Highest % was in Shoalwater Bay (18.8%) followed by Mt Morgan (15.3%) and Monto-Eidsvold (13.8%)

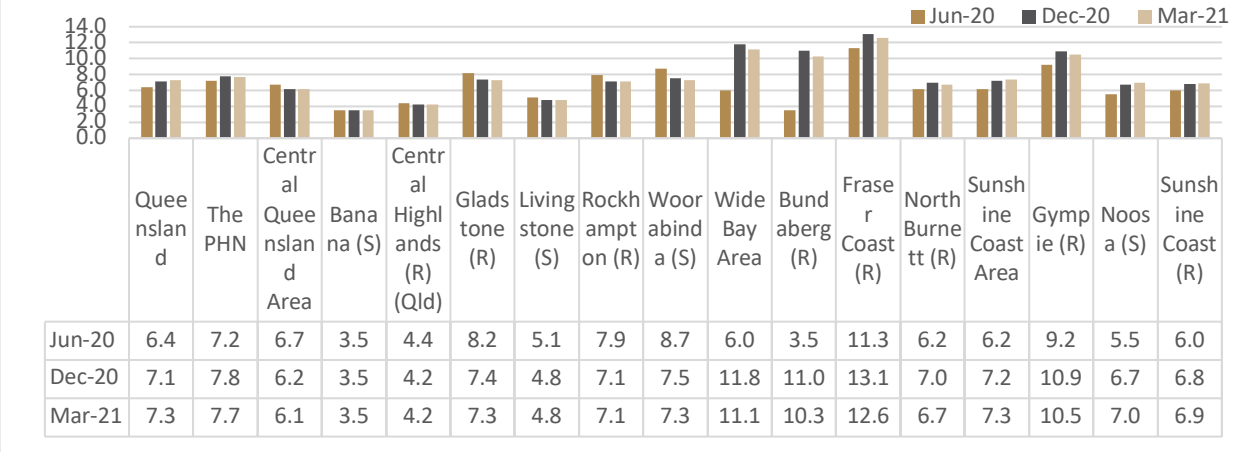
3.1.4. Employment

Employment is beneficial for health, particularly for addressing depression and general mental health (9). Unemployment leads to lower earnings and associated impacts on physical and mental health. Within the PHN the unemployment rate for Aboriginal and Torres Strait Islander people (15-64 years) was at 21.2% which is 12% higher compared to non-Indigenous persons (8.3%) (10).
Overall, within the PHN the unemployment rate in Dec 2020 quarter was 7.8% (compared to 7.1% Qld) (11).

- Highest proportion was in Wide Bay area (11.8%)
- Highest proportion of unemployment was seen in Fraser Coast (13.1%) followed by Bundaberg (11.0%) and Gympie (10.9%).
- Greatest change in unemployment for June 2020 to Dec 2020 quarter was reported for Wide Bay area (from 6% to 11.8%) and for Bundaberg LGA (from 3.5% to 11%).

Change in unemployment is seen within the PHN from June 2020 to Mar 2021 quarter (See Graph 2). Most of increase in unemployment within the PHN comes from increase in the Wide Bay area.

Graph 2: Unemployment over time, LGAs, the PHN and Queensland 2020-2021



	Queensland	The PHN	Central Queensland Area	Banana (S)	Central Highlands (R) (Qld)	Gladstone (R)	Livingstone (S)	Rockhampton (R)	Woorabinda (S)	Wide Bay Area	Bundaberg (R)	Fraser Coast (R)	North Burnett (R)	Sunshine Coast Area	Gympie (R)	Noosa (S)	Sunshine Coast (R)
Jun-20	6.4	7.2	6.7	3.5	4.4	8.2	5.1	7.9	8.7	6.0	3.5	11.3	6.2	6.2	9.2	5.5	6.0
Dec-20	7.1	7.8	6.2	3.5	4.2	7.4	4.8	7.1	7.5	11.8	11.0	13.1	7.0	7.2	10.9	6.7	6.8
Mar-21	7.3	7.7	6.1	3.5	4.2	7.3	4.8	7.1	7.3	11.1	10.3	12.6	6.7	7.3	10.5	7.0	6.9

Source: QGSO regional profiles from Feb to Jul 2021

As a response to the impact of COVID pandemic the government provide job-seeker payments to individuals who lost their jobs. There were 49,698 (10.8%) individuals receiving job-seeker payments as of March 2021 within the PHN (Qld 9.2%). (12)

Table 6: Job-seeker recipients, March 2021, the PHN

	Recipients	Rate per 100 persons aged 22 to 64 years
Queensland	262,759	9.2
the PHN	49,698	10.8
Banana (S)	497	6.4
Central Highlands (R) (Qld)	965	5.8
Gladstone (R)	4,414	12.3
Livingstone (S)	1,693	8.3
Rockhampton (R)	4,785	10.8
Woorabinda (S)	234	46.8
Bundaberg (R)	6,514	13.5
Fraser Coast (R)	8,098	15.7
North Burnett (R)	674	12.5
Gympie (R)	3,535	13.4
Noosa (S)	2,837	10.0
Sunshine Coast (R)	15,452	8.9

Source: QGSO (2021) Regional Profile, generated on the 27th July 2021.

3.1.5. Housing and families

The research into impact of adversity in child on adulthood has led to the conclusions that many adult diseases should be viewed as developmental disorders that begin early in life and that persistent health disparities associated with poverty, discrimination, or maltreatment could be reduced by the alleviation of toxic stress in childhood.(13). Childhood social disadvantage significantly influences risk of depression onset both in childhood and in adulthood. Early childhood adversity is also related to poor prognosis of mental health conditions.(14). Childhood advantages that contribute to better social and emotional wellbeing in the future include factors such as having a stable family environment, employed parent, educated mother and emotional support. Along with the impact of no stability on children, financial and housing stress leads to conflict in the household, promoting psychological distress. Healthy homes promote good physical and mental health.

Housing is commonly considered to be “affordable” when a family spends less than 30 percent of its income to rent or buy a residence. The shortage of affordable housing limits families’ and individuals’ choices about where they live, often relegating lower-income families to substandard housing in unsafe, overcrowded neighbourhoods with higher rates of poverty and fewer resources for health promotion. (15)

Indicators that show housing disadvantage and family environments are provided below.

1. **Low-income families**

Low-income families have been defined as families in occupied private dwellings whose family income was less than $650 per week or less than $33,800 per year. Compared to proportion of families reporting low income across Queensland (9.4%) in 2016, within the PHN (1):

- Overall, around 11% of families reported having low income
- This proportion was 14% in WB and 10% each in CQ and SC
- Highest proportion within LGAs was in Woorabinda (38.8%) followed by North Burnett (15.6%), Gympie (14.6%) and Fraser Coast (14.5%)
- Highest proportion within SA2 regions was in Cooloola (n=328;18.9%), Gin Gin (n=256;18.5%), Mount Morgan (n=132;18.4%), Bundaberg (n=239;18%) and Monto – Eidsvold (n=167;18%)

2. Jobless families

Unemployment leads to lower earnings and associated impacts on physical and mental health. The negative psychological consequences of unemployment spill over children and parental unemployment during childhood can have long-term consequences for adult children's psychological well-being later in life (16). The proportion of jobless families (single or couple) with children under 15 years of age (1) :

- Within the PHN was 15.8% compared to 13.8% in Qld
- This proportion was highest in Woorabinda (59.6%) followed by Fraser coast (25.2%), Gympie (24.8%) and Bundaberg (22.9%) LGAs
- This proportion was highest for Mount Morgan (n=103;48.6%), Rockhampton City (n=87;35.7%), Kingaroy Region – North (n=307;34.8%), Bundaberg (n=165;33.3%), Gin Gin (n=131;32.8%), Granville (n=95,32%) and Cooloola (n=122;31.8%) SA2 regions

Table 7. Education, employment and income indicators, LGAs, the PHN and Queensland

Geography	SEIFA (% of people living in most disadvantaged quintile), 2016	Unemployment, Mar 2021		Highest level of schooling Year 10 or below, 2016		Low-income family (<$33.8k/yr), 2016		Families with children with no parent employed, 2016
		N	%	N	%	N	%	%
Queensland	20.0	197,575	7.3	1,161,391	31.9	115,233	9.4	13.8
the PHN	27.1	33,233	7.7	252,959	39.3	24,411	11.1	15.8
Central Queensland Area	26.2	**7,706**	**6.1**	**64,658**	**39**	**5,631**	**10**	**14.5**
Banana (S)	17.2	297	3.5	4,670	43.2	319	8.8	7.4
Central Highlands (R) (Qld)	14	717	4.2	6,872	33.8	420	6.4	7.5
Gladstone (R)	21.5	2,567	7.3	17,306	37.8	1,673	10.4	14.7
Livingstone (S)	16.5	971	4.8	11,249	39.9	963	10.1	12.5
Rockhampton (R)	39.1	3,111	7.1	24,211	40	2,176	10.7	18.3
Woorabinda (S)	100	43	7.3	350	57.6	80	38.8	59.6
Wide Bay Area	54.8	**9,915**	**11.1**	**77,857**	**47.6**	**7,843**	**14.1**	**23.8**
Bundaberg (R)	49.5	4,334	10.3	34,847	47.3	3,420	13.6	22.9
Fraser Coast (R)	59.4	5,227	12.6	38,966	47.8	4,018	14.5	25.2
North Burnett (R)	57.1	354	6.7	4,044	48.4	405	15.6	17.6
Sunshine Coast Area	13.3	**15,612**	**7.3**	**110,444**	**35.3**	**10,937**	**10.1**	**12.9**
Gympie (R)	46.1	2,330	10.5	18,421	47.2	1,945	14.6	24.8
Noosa (S)	5.8	1,904	7.0	13,366	31.7	1,531	10.4	12.2
Sunshine Coast (R)	9.1	11,378	6.9	78,657	33.9	7,461	9.3	11.2

Source: Queensland Government Statistician's Office, Queensland Treasury 2018. Queensland Regional Profiles. Available from: http://www.qgso.qld.gov.au

Findings from the ***PHN community health survey 2020-21***[1] (17) also indicated that communities across the PHN region identified the potential factors that serve as key socio-economic determinants of health. These were similar to the above-mentioned aspects suggested by data evidence such as being remote and rural, having less job opportunities and lack of health literacy.

The respondents also listed broader health and safety concerns with higher importance but with lower satisfaction of services/interventions to address those. These included the following (17):

- Family violence and abuse
- Lack of safe and affordable housing
- People needing residential care are not looked after well
- Lack of transportation
- Binge drinking or drug abuse
- People do not have adequate access to emotional and social support

The greatest concern appears to be family violence and abuse, with 98% of the respondents stating this was important/very important, but only 11% of the respondents were satisfied or very satisfied with the current state, and more than 50% had low or no satisfaction. ***Safe and affordable housing also appears to be a concern for the PHN region, with only 13% stating they were satisfied or very satisfied with the current service and 60% stating they were not satisfied or had low satisfaction.***

Service providers who completed the ***PHN stakeholders surveys***[2] across the region also highlighted the importance of social factors (unemployment, housing etc) in shaping one's health and health impacting behaviours. About 33 % of the respondents ranked socio-economic among top three health concerns and specific concerns mentioned included jobs, income, education/training, housing, transport options, safety, and security (18).

3. **Community and family Connectedness:**

- Social, physical and economic characteristics of neighbourhoods have been increasingly shown to affect short- and long-term health quality and longevity. A neighbourhood's characteristics may promote health by providing places for children to play and for adults to exercise that are free from crime, violence and pollution. Social and economic conditions in neighbourhoods may improve health by affording access to employment opportunities and public resources including efficient transportation and an effective police force. Connection to the community is empowering and provides identity and sense of belonging to the community in which one lives.

The Families in Australia Surveys, summarise the disruption to families and communities throughout the pandemic time (2020-current) and indicates that:(19)

- Limited technological skills were a common barrier to older people connecting with family, although several older participants commented that adult children were too busy or unwilling to communicate.
- Many grandparents found their regular patterns of care of or contact with grandchildren disrupted by COVID restrictions and felt disconnected and isolated from their children and grandchildren.
- Almost 30% of respondents who reported needing help with everyday tasks due to a disability or illness said that they did not receive help from professional services, but they would like to.

[1] 612 completed surveys were used. The survey involved young people and families, adults, older people and people from vulnerable groups including people with a disability, and people from culturally and linguistically diverse backgrounds and LGBTIQ

[2] 240 completed stakeholders' surveys used in the HNA. There was a fairly even representation across all 3 PHN areas in the PHN stakeholders survey.

- COVID prevented many people from performing volunteer work. The number of respondents volunteering since COVID restrictions were lifted has not equalled the numbers volunteering before restrictions, suggesting that volunteer numbers across Australia have yet to recover to pre-COVID levels.

All these observations show reduced connections within families and within a society. Having ***access to internet*** can help to improve communication and connectedness with people. While around 81% of the dwellings within the PHN accessed internet from dwelling in 2016 (Qld 83.7%), this proportion was below 75 % for two LGAs: Woorabinda (34.7%) and North Burnett (66.1%)

4. Homelessness

Homelessness can result from many factors, such as whether a person is working, experience of family and domestic violence, ill health (including mental health) and disability, trauma, and substance misuse (20). Homelessness can expose people to violence and victimisation, result in long-term unemployment and lead to the development of chronic ill health (21). The data below is from 2016, and impact on these numbers since the COVID pandemic can be seen after 2021 Census data is made available.

In 2016,

- The rate of homelessness was less within the PHN compared to Queensland (36.2 compared to 45.6 per 10,000 persons)
- This rate was highest in Woorabinda (652.2 per 100,000) followed by North Burnett (63.4 per 100,000, n=69), Gympie (58 per 100,000, 289) and Rockhampton (46.7 per 100,000, n=372) LGAs.
- The highest number of homeless people were on Sunshine Coast (n=785,26.2 per 100,000), Fraser coast (n=456, 43.6 per 100,000) and Bundaberg (n=408, 43.3 per 100,000) LGAs.
- Rockhampton City (n=169 ;430.7 per 100,000) and Kingaroy Region – North (n=167;175.7 per 100,000) included highest numbers and rates of homelessness while Bundaberg (n=95;144.5 per 100,000), Gin Gin (n=66; 127.8 per 100,000) and West Gladstone (n=51; 109.4 per 100,000) SA2 areas had only highest rate of homelessness.

The PHN ***community health survey data*** (17) indicates that the majority (96% or 575/ 612) of those who responded to the survey identified that being connected and having an access to emotional and social support as being very important (84%) and important (12%). However, in regard to the existing service, only about 25-30% of the respondents were satisfied with the support services provided in this regard. Nevertheless, majority of the respondents across various LGAs identified “connected community, community support and engagement” as one of the things working well and needs to be promoted continuously. An importance of holistic approach to address health issues with its underlying broader determinants such as alcohol and other drugs (AOD), child safety, domestic violence and unemployment was reinforced (17).

3.1.6. Health Literacy

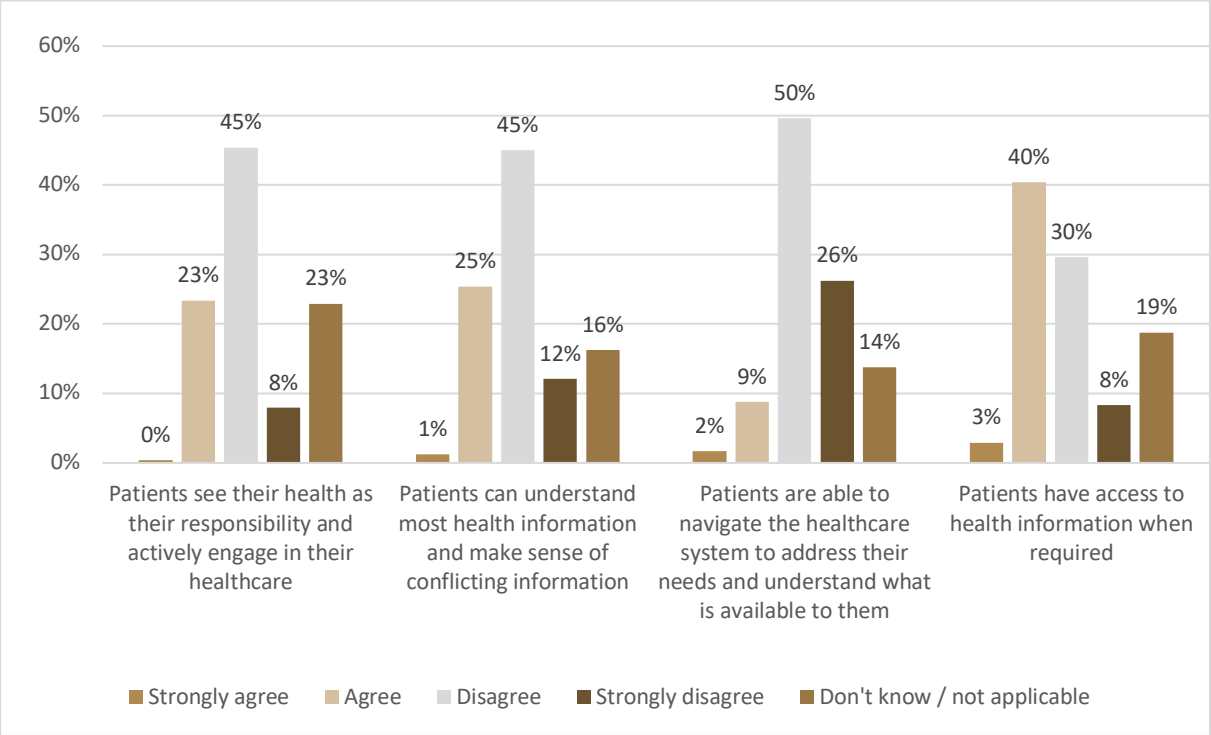
The National Health Survey: Health Literacy, 2018, shows that one-third of Australians (33 per cent) found it always easy to discuss health concerns and actively engage with their healthcare providers; 56 per cent found this usually easy, while 12 per cent found it difficult (22). Nationally more than 60% of responders agreed or strongly agreed on various domains of the health literacy including:

- Feeling understood and supported by healthcare providers
- Having sufficient information to manage their health
- Actively managing their health
- Social support for health
- The survey also indicated that around 30% of responders indicated that it is always easy to

- Ability to actively engage with healthcare providers
- Navigate the healthcare system
- Find good health information
- Understand health information well enough to know what to do

The ***PHN stakeholders survey*** (18) explored patient health literacy and ability to navigate services and access information (
Graph 3). Aspects that were most negatively perceived by stakeholders related to patients' ability to source and interpret information and navigate services and systems followed by patient's responsibility and active engagement in their healthcare.

Graph 3: Respondents' perceptions of patients' health literacy and ability to source and interpret information and navigate the healthcare system



Source: Central Queensland Wide Bay Sunshine Coast PHN, The PHN Stakeholder survey, 2021

3.1.7. Crime and Domestic Violence

Crime rates vary by neighbourhood characteristics. Low-income neighbourhoods are more likely to be affected by crime and property crime than high-income neighbourhoods (23). The impacts of violence on children and adolescents include poor long-term behavioural and mental health (24) and the effects can result in greater risk for substance use, risky sexual behaviour, and unsafe driving behaviour (25). Individuals exposed to violence at any age are more likely to engage in and experience intimate partner violence (26). Women exposed to intimate partner violence have an increased risk of physical health issues such as injuries, and mental health disorders such as disordered eating, depression and suicidal ideation (27).

Within the PHN regions the crime rates differ extensively(12):

- There were 80,105 total reported offences in 2019-20 (9002 per 100,000 compare to Qld 10,386 per 100,000)

- Highest number of offences was reported in Sunshine Coast LGA (n=22,842; 6,778 per 100,000), followed by Rockhampton (n=13,573;16,558 per 100,000) and Fraser coast (n=10,660; 9873 per 100,000)
- Highest rate per 100,000 was noted in Woorabinda (73,320; n=753); Rockhampton (16,558; n=13,573) and Gladstone (11,121; n=7,120)
- The SA2 areas with highest rate were Rockhampton City, Bundaberg, Berserker, Gladstone, Kingaroy Region – North, Park Avenue and Central Highlands – East. Looking at the number of offences, these were highest in Maroochydore – Kuluin, Maryborough (Qld), Rockhampton City, Bundaberg, Gympie – North, Kingaroy Region – North and Berserker (28).

3.1.8. Child protection and out of home care

There is a substantial body of research internationally and within Australia that indicates that there is an association between child maltreatment (abuse and neglect) and various social problems affecting children and young people, such as homelessness, substance abuse and suicide. There is consistent evidence for a link between child abuse and neglect and later offending and involvement in the juvenile justice system (29).

In Australia (2018–19) about 170,000 children aged 0–17 received child protection services. This equates to a rate of 30 per 1,000 children. More than half (58%) of these children were the subject of an investigation only and were not subsequently placed on a care and protection order or in out-of-home care. A small proportion (7.4%) were involved in all 3 components of the system (investigation, order and out-of-home care). The number of children receiving child protection services continues to rise. Over the 5-year period from 2014–15 to 2018–19, the overall number of children who received child protection services in Australia rose by 12%—from around 152,000 children (29 per 1,000) to around 170,000 children (30 per 1,000). How COVID has impacted these numbers can only be known when 2019-20 and 2020-21 data is published. Some groups of children that consistently overrepresented in the child protection system are:

- Aboriginal and Torres Strait Islander children were almost 8 times as likely as non-Indigenous children to have received child protection services (156 per 1,000 children compared with 21 respectively)
- infants (aged under 1) were more likely to have received child protection services than those aged 15–17 (38 per 1,000 compared with 23 respectively)
- children from geographically remote areas had the highest rates of substantiations—children from Very remote areas were 3 times as likely as those from Major cities to be the subject of substantiations (20 per 1,000 compared with 7, respectively)
- children who were the subjects of substantiations were more likely to be from lower socioeconomic areas (36% were from the lowest socioeconomic area compared with 5.4% from the highest).

Even if this data is not available on the PHN level, domestic violence is listed as one of the top concerns by the survey responders.

In Summary,

- *Within the PHN almost 7% higher population was in the most disadvantaged quintile compared to Qld. LGAs with high proportions of the population in the most disadvantaged quintile were Woorabinda, Fraser Coast, North Burnett, Bundaberg, Gympie and Rockhampton.*
- *100% population from LGAs Banana, Central Highlands, Woorabinda, and North Burnett lives in outer regional, remote or very remote areas.*
- *From 2020 June to Mar 2021: Most of increase in unemployment within the PHN comes from increase in the Wide Bay area.*

- *Highest rate of jobseeker payments provided were for people in Woorabinda and Fraser Coast in Mar 2021*
- *Highest proportion of low-income families was in Woorabinda followed by North Burnett, Gympie, and Fraser Coast*
- This proportion of jobless families was highest in Woorabinda followed by Fraser coast, Gympie, and Bundaberg
- The rate of homelessness was highest in Woorabinda followed by North Burnett, Gympie and Rockhampton LGAs.
- Highest rate of crime was noted in Woorabinda, Rockhampton, and Gladstone

The PHN surveys supported the findings indicating that the broader health and safety concerns include:

Family violence and abuse

Lack of safe and affordable housing

People needing residential care are not looked after well

Lack of transportation

The surveys also identified that the community felt that being connected and having access to emotional and social support as being very important and domestic violence is listed as one of the top concerns by the PHN survey responders.

4. Health Status

4.1. Wellbeing and Human Function

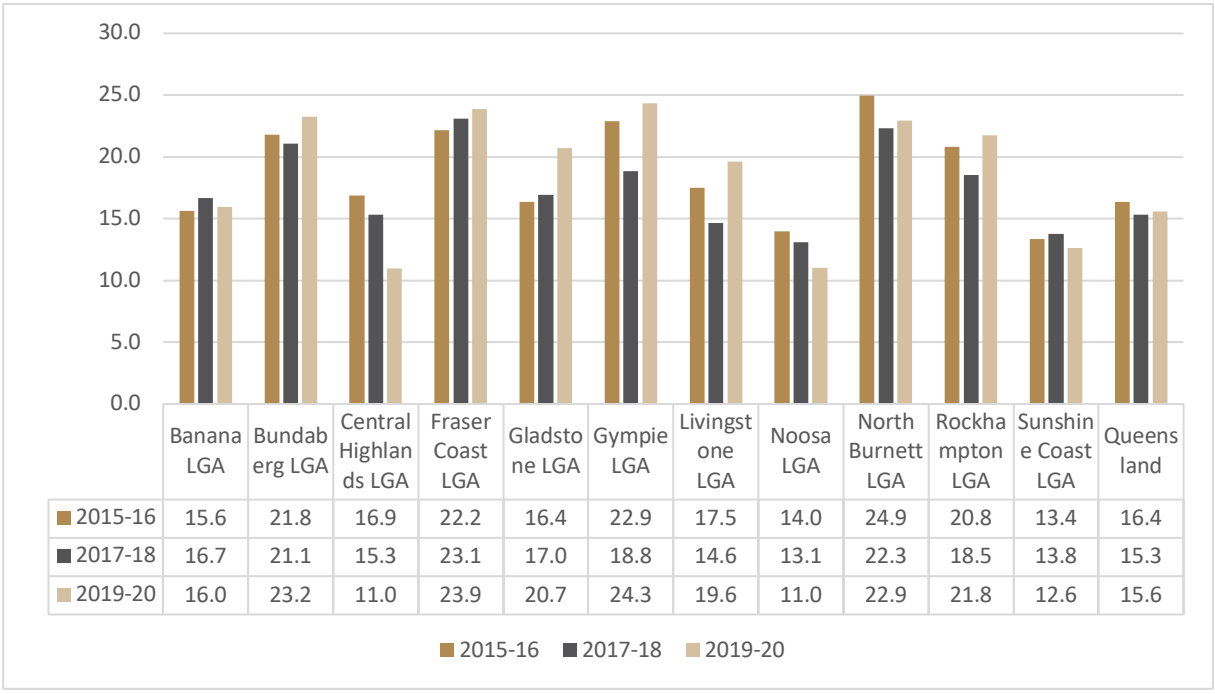
4.1.1. Self-rated Health

Self-rated health status is a subjective measure that depends on an individual's expectations for their own health and their comparisons with others around them (30). Data published by PHIDU (2017-18) indicates that around 130,485 (17.6 ASR per 100) people aged 15 years and over self-rated their health as fair or poor within the PHN (Qld 16.9%).(31)

The 2019-20 data from Queensland Health indicates that (32):

- Within LGAs: significantly higher % of people (compared to Qld) from Bundaberg (23.2%), Fraser Coast (23.9%), Gladstone (20.7%), Gympie (24.3%), North Burnett (22.9%) and Rockhampton (21.8%) indicated that they feel that their health is fair or poor (Qld=15.6%) .
- Overtime since 2015-16 to 2019-20, some LGAs such as Bundaberg, Fraser Coast, Noosa and Sunshine Coast are showing increase in % of people indicting their health is good (excellent, very good and good) while LGAs such as Bundaberg, Fraser Coast, Gladstone, Gympie and Livingstone are showing steady decline in perception of their health.

Graph 4: Self-rated health (fair/poor %) overtime, the LGAs and Queensland, 2015-16 to 2019-20



	Banana LGA	Bundaberg LGA	Central Highlands LGA	Fraser Coast LGA	Gladstone LGA	Gympie LGA	Livingstone LGA	Noosa LGA	North Burnett LGA	Rockhampton LGA	Sunshine Coast LGA	Queensland
2015-16	15.6	21.8	16.9	22.2	16.4	22.9	17.5	14.0	24.9	20.8	13.4	16.4
2017-18	16.7	21.1	15.3	23.1	17.0	18.8	14.6	13.1	22.3	18.5	13.8	15.3
2019-20	16.0	23.2	11.0	23.9	20.7	24.3	19.6	11.0	22.9	21.8	12.6	15.6

Source: Queensland Health (2021) Queensland survey analytic system (QSAS) Detailed Regional data from https://www.health.qld.gov.au/phsurvey.

4.1.2. Psychological Distress as an indicator of social and emotional wellbeing

Social and emotional wellbeing is strongly associated with better mental and physical health outcomes. This is detailed in mental health and service needs assessment report however summary of psychological distress is provided here. Psychological distress can be described as unpleasant feelings or emotions that affect a person's level of functioning and interfere with the activities of daily living. Psychological distress is often associated not only with poor mental health outcomes but also with poorer physical health outcomes.

Overall, there is a relatively higher proportion of people with high or very high psychological distress in the PHN region compared to the other PHNs in Australia. Psychological distress is disproportional across the PHN region (See below). Data for 2017-18 indicated the following findings for high or very high psychological distress (31)

- 86,823 people aged 18 years and over are estimated to have high or very high levels of psychological distress (ASR 13.5 per 100 for PHN; ASR 12.9 per 100 for Australia).
- WB region had the highest burden of psychological distress among three PHN regions: (14.9 per 100 compared to 13.9 for CQ and 12.9 for SC) PHN rate of ASR 13.5 per 100.
- 12 out of 16 SA3s in the PHN had higher than the QLD rate (ASR 13.0 per 100).
- The SA3s with the highest prevalence of psychological distress were Maryborough (ASR 16.4 per 100), Gympie – Cooloola (ASR 15.8 per 100), Burnett (ASR 15.2 per 100), Hervey Bay (14.8 per 100) and Nambour (14.4 per 100).
- A higher number of people experienced psychological distress in 2017-18 compared to 2014-15 in the PHN region; the rate increased from ASR 12.3 in 2014-15 to 13.5 in 2017-18.
- Females experienced psychological distress more than the males across all SA3s in the PHN region. Detailed analysis by gender is presented under the subsection on mental health common conditions for specific population groups.

4.1.3. Disability

Persons with a profound or severe disability are defined as needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a long-term health condition (six months or more), a disability (lasting six months or more), or old age. In 2016, within the PHN, 6.4% of people were in a need of assistance with a profound or severe disability (Qld 5.2%).

- Highest proportion of people with disability is in Wide Bay area (8.9%) followed by Sunshine Coast (5.9%) and Central Queensland (4.8%).
- Within the LGAs, the highest proportion was for Fraser coast (9.7%), Bundaberg (8.3%) and Gympie (8.0%)
- Within the LGAs, the lowest proportion was for Central Highlands (2.6%), Woorabinda (3.3%) and Banana (3.7%)
- For the SA2 level estimates the highest proportion with large numbers is in Maryborough (n=1937, 10.6%), Torquay - Scarness – Kawungan (n=1628, 10.9%), Pialba - Eli Waters (n=1462,10.5%) and Walkervale - Avenell Heights (n=1029, 9.6%).

From proportion of people who were living with disability, the PHIDU data presents the number of people who are 65 years and over and have a profound or severe disability and are living in the community. The table below summarises these proportion for the PHN region for 2016. This information identifies the disability access needs to various health services including used by the elderly people.

Table 7: Distribution of people living with a profound or severe disability within the PHN community. 2016

	People with a profound or severe disability and living in the community, All age			People with a profound or severe disability and living in the community, 65 years and over		
	Number of Persons	Total population	% persons	Number of Persons	Population aged 65 years and over	% persons
Queensland	216,397	4,470,404	4.8	96,559	695,250	13.9
Central Queensland, Wide Bay, Sunshine Coast	46,688	780,555	6.0	21,852	158,258	13.8
Banana (S) - part b	409	13,096	3.1	194	1,756	11.0
Central Highlands (R)	684	27,786	2.5	232	2,091	11.1
Gladstone (R)	2,270	57,651	3.9	807	6,150	13.1
Livingstone (S)	1,660	33,086	5.0	837	5,976	14.0
Rockhampton (R)	4,211	74,539	5.6	1,701	11,371	15.0
Woorabinda (S)	25	946	2.6	8	39	20.5
Bundaberg (R)	6,939	86,917	8.0	3,193	20,156	15.8
Fraser Coast (R)	9,017	95,849	9.4	4,234	25,398	16.7
North Burnett (R)	630	9,353	6.7	341	2,161	15.8
Gympie (R)	3,769	45,788	8.2	1,584	10,231	15.5
Noosa (S)	2,677	52,731	5.1	1,459	13,622	10.7
Sunshine Coast (R)	14,397	282,787	5.1	7,269	59,370	12.2

Source: PHIDU (2021) Social Health Atlas of Australia Primary Health Networks.

The PHN stakeholders rated accessibility and appropriateness of the health care services for various subsets of the population. The findings indicated that health care services are not always accessible or appropriate for people living with a disability. More specifically, about 43% of the survey respondents disagreed (31%) or strongly disagreed (12%) that health care services are accessible and appropriate for people with a disability (18).

In Summary,

Self-rated health: Significantly higher proportion of people from Bundaberg, Fraser Coast, Gladstone, Gympie, North Burnett and Rockhampton indicated that they feel that their health is fair or poor

Psychological Distress is on rise and the SA3s with the highest prevalence of psychological distress were Maryborough, Gympie – Cooloola, Burnett, Hervey Bay and Nambour

Disability: The highest proportion of people living with disability was for Fraser Coast, Bundaberg, and Gympie

Around 43% of the PHN survey respondents indicated that health care services are not accessible to people with disabilities

4.2. Health Behaviours and Biomedical Risk Factors

Australian Institute of Health and Welfare defines health behaviours including attitudes, beliefs, knowledge and behaviours such as patterns of eating, physical activity, smoking & alcohol consumption. Behavioural factors (e.g. tobacco smoking, drinking alcohol at risky levels) and biomedical risk factors, described later, (e.g. overweight and obesity, high blood pressure) carry specific risks for health. While behavioural risk factors are those that individuals have the most ability to modify, biomedical risk factors are bodily states that are often influenced by behavioural risk factors. Many chronic diseases share common behavioural and biomedical risk factors that are largely preventable.(33) Modifying these risk factors can reduce an individual's risk of developing a chronic disease and result in large health gains by reducing illness and rates of death. The summary table below clearly indicates the strength of this evidence. (please see the reference for further details)(33)

Graph 5: Strong evidence of direct associations between selected chronic diseases and behavioural and biomedical risk factors

	Behavioural: Tobacco smoking	Behavioural: Insufficient physical activity	Behavioural: Excessive alcohol consumption	Behavioural: Dietary risks	Biomedical: Obesity	Biomedical: High blood pressure	Biomedical: Abnormal blood lipids
CVD	•	•	—	• (a)	•	•	•
Stroke	•	•	•	—	•	•	•
Type 2 diabetes	•	•	—	• (a)	•	—	—
Osteoporosis	•	•	•	• (b)	—	—	—
Colorectal cancer	•	—	•	• (c)	•	—	—
Oral health	• (d)	—	• (e)	• (f)	—	—	—
CKD	•	—	—	—	•	•	—
Breast cancer (female)	—	—	•	—	• (g)	—	—
Depression	—	—	—	—	•	—	—
Osteoarthritis	—	—	—	—	•	—	—
Rheumatoid arthritis	•	—	—	—	—	—	—
Lung cancer	•	—	—	—	—	—	—
Cervical cancer (h)	•	—	—	—	—	—	—
COPD	•	—	—	—	—	—	—
Asthma	•	—	—	—	—	—	—

• • = Strong evidence in support of a direct association between the chronic disease and behavioural or biomedical risk factor.

— — = There is either not a direct association or the evidence for a direct association is not strong.

Source: AIHW (2016) Evidence for chronic disease risk factors. https://www.aihw.gov.au/reports/chronic-disease/evidence-for-chronic-disease-risk-factors/contents/behavioural-and-biomedical-risk-factors

4.2.1. Burden of Risk Factors

Over one-third of disease burden is potentially preventable. In 2018, 38% of the burden of disease could have been prevented by reducing or avoiding exposure to the modifiable risk factors. The risk factors contributing the most burden in 2018 were tobacco use (8.6%), overweight (including obesity) (8.4%), dietary risks (5.4%), high blood pressure (5.1%), and alcohol use (4.5%).(34). The burden of disease increased substantially by increasing remoteness and increasing low socioeconomic status.

4.2.2. Smoking

Smoking is a leading cause of death and disability from cardiovascular disease, ischaemic heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer. Tobacco use was the leading risk factor for both males and females and contributed the most to fatal burden, with almost 20,500 attributable deaths (13% of all deaths) in 2018(34). Smoking was responsible for 9.3% of the total burden of disease in Australia in 2015, making it the leading risk factor contributing to disease burden. Almost three-quarters (73%) of the burden due to smoking was fatal—that is, due to premature death.

Although there has been a large reduction in smoking rates over time, smoking remains a major risk factor contributing to the health, social and economic inequalities experienced by certain population groups in Australia. While some improvements are being made, the 2019 NDSHS shows daily smoking continues to be more commonly reported among people living in the lowest socioeconomic areas, people living in Outer regional or Remote and very remote areas, people who are unable to work or unemployed, and people who completed Year 11 or below and people with a Certificate III or IV. (35)

In 2015, smoking was responsible for more than 1 in every 8 (21,000) deaths (36). Tobacco use contributed to 41% of all respiratory burden, 22% of all cancer burden and 12% of the cardiovascular burden (36). Tobacco use has remained the leading risk factor, but the disease burden from smoking fell from 10.5% of total burden to 9.3% between 2003 and 2015.

- In 2017-18, smoking rates were 13.8% nationally and 14.9% in Queensland
- For the PHN (2019-20) region the rate of people who smoked daily (11.7%, n=81,000) was similar to Qld (10.3%) however there are areas within the PHN that have significantly higher proportions compared to Qld (32).
- This rate was significantly higher compared to Qld for CQ (15.4%) and WB (14.5%) and lower for SC (8.5%) areas. (See Table 9 for details)
- Smoking rates in 2019-20, are highest in Gladstone (16.4%), followed by Central Highlands (16%), North Burnett (15.9%) and Rockhampton (15.4%) LGAs. While smoking rates in Fraser Coast, Gympie, Rockhampton and Sunshine Coast LGAs are slowly reducing, increase in these rates overtime (2015-16 to 2019-20) is seen in Banana, Bundaberg and Noosa. (see Graph 7 for details)

Second-hand smoke

- Exposure to second-hand smoke affects people of all ages and can cause cardiovascular and respiratory diseases in adults, and in infants and children can cause low birthweight and sudden infant death syndrome and induce and exacerbate a range of mild to severe respiratory effects.(37) Results from the 2019 NDSHS show that parents and guardians are choosing to reduce their children's exposure to smoke inside the home. Nationally, the proportion of households with dependent children where someone smoked inside the home fell from 19.7% in 2001 to 2.8% in 2016 and to 2.1% in 2019. (35). Across Australia, proportion of children aged 0-14 who lived in households with daily smokers was higher in remote areas and amongst Aboriginal and Torres Strait Islander people in 2014-15.(38) .

Table 8: Proportion of children aged 0–14 who live in households with daily smokers, by remoteness and Indigenous status 2012–13, and 2014–15 (2018-19 available for Indigenous only)

	Non-remote			Remote			Australia		
	Indigenous	Non-Indigenous	Rate ratio(b)	Indigenous	Non-Indigenous(c)	Rate ratio(b)	Indigenous	Non-Indigenous(c)	Rate ratio(b)
2012–13	53.7%	25.9 %	2.1	70.2%	35.5%	2	56.9%	26%	2.2
2014–15	53.2%	20.3* %	2.6	73.0%	14.2*%	5.1	56.9%	20.9*%	2.7
2018-19	54.2%*	n.a	n.a	71.6%	n.a	n.a	56.9%*	n.a	n.a

*significant difference from 2004-05 proportions

Source: (AIHW) Australian Institute of Health and Welfare (2020) Aboriginal and Torres Strait Islander Health Performance Framework 2020 online data tables. 2.03 Environmental tobacco smoke. From https://www.indigenoushpf.gov.au/measures/2-03-environmental-tobacco-smoke/data

4.2.3. Alcohol Intake

The details of health and services needs associated with Alcohol and Other drug concerns within the PHN are drafted separately and this is just a short summery of that assessment. Alcohol abuse affects families and communities in multiple ways. It has the potential to lead to anti-social behaviour, violence, assault, imprisonment, and family breakdown. Long-term excessive alcohol consumption is a major risk factor for chronic physical and mental health conditions. Binge drinking contributes to injuries and death due to external causes such as suicide or transport accidents. The use of alcohol and other drugs has several economic impacts relating to household expenditure, decreased productivity and healthcare and law enforcement costs. The social costs of alcohol misuse in Australia in 2010 was estimated to be $14.35 billion. The highest costs were associated with productivity losses (42.1%), traffic accidents (25.5%) and cost to the criminal justice system (20.6%) (39).

Queensland Government's Queensland survey analytics system (QSAS) 2019-20 reported (32):

- Proportion of people who had lifetime risky alcohol consumption (exceeding guidelines) was higher within the PHN (25.9%) than Queensland (21.6%).
- The proportion was highest in Sunshine Coast HHS area (28%, significantly higher) compared to Central Queensland and Wide Bay HHS areas (both at 23.7%). (See Table 9 for details)
- The LGAs with the highest proportion of adults reporting alcohol consumption that was risky (lifetime) were Livingstone (31.7%), Central Highlands (29.4%) and Sunshine Coast (29.3%). Trends overtimes also indicate that these three LGAs have strong upward trend. (see Graph 7 for details).

4.2.4. Insufficient physical activity

Low levels of physical activity are a major risk factor for chronic conditions. People who are not active enough have a greater risk of developing cardiovascular disease, type 2 diabetes, osteoporosis and dementia. Being physically active improves the immune system and mental and musculoskeletal health and reduces other risk factors such as overweight and obesity, high blood pressure and high blood cholesterol. Physical activity can also improve symptoms and/or delay or halt the progression of a number of conditions or the onset of associated diseases and complications (40). The rates of insufficient physical activity did not change significantly between 2014–15 and 2017–18 (41). (see Graph

7 for details). Note that the data is from CATI surveys and might not be accurate and variations may be due to random error however show a trend that might not be significant but important.

Based on 2019-10 CHO report (32):

- Compared to Queensland (41.7%), the PHN regions have significantly high proportion of people with insufficient activity specifically in the following LGAs: Gympie (52.5%), North Burnett (51.9%), Banana (50.6%) and Gladstone (52.5%). (See Table 9 for details)
- Overtime, the trends indicate that Gympie and Banana LGA have consistently higher proportion of people with insufficient physical activity.

4.2.5. Patterns of eating

A healthy diet helps to prevent and manage health risk factors such as overweight and obesity, high blood pressure and high blood cholesterol, as well as associated chronic conditions, including type 2 diabetes, cardiovascular disease and some forms of cancer. (42) Diet-related chronic conditions are among the leading causes of death and disability in Australia.
In 2017–18(43),

- most Australians didn't consume the recommended number of serves of vegetables. The proportion not meeting the recommendation was similar for boys (95%) and girls (93%) aged 2–17, and higher for men (96%) than for women (89%).
- The proportions not eating the vegetable recommendation were similar for adults living in Outer regional and remote areas (92%) and those living in Major cities (93%)
- 94% of those living in the lowest socioeconomic areas didn't meet the vegetable recommendation, compared with 92% in the highest
- the proportion of Australians consuming the recommended number of serves of fruit was higher than the proportion meeting the recommendation for vegetables. The proportion not meeting the recommendation was higher for boys (30%) than for girls (24%) aged 2–17, and higher for men (53%) than for women (44%).
- after adjusting for age, Australians aged 18 and over living in Outer regional and remote areas (53%) were less likely to meet the fruit recommendation than those living in Major cities (48%)
- 53% of those living in the lowest socioeconomic areas didn't meet the fruit recommendation, compared with 46% in the highest
- Sugar-sweetened drinks include soft drink, cordials, sports drinks, and caffeinated energy drinks.
    - 7.1% of children and adolescents aged 2–17 and 9.1% of those aged 18 and over consumed sugar-sweetened drinks daily
    - men were almost twice as likely (12%) as women (6.4%) to consume sugar-sweetened drinks daily
- Men, people living in remote areas and people living in low socio-economic areas are at higher risk of not meeting the guidelines for fruit and vegetable intake and have higher intake of sweetened drinks.

The PHN ***community survey*** further confirmed the importance of having an easy and affordable access to (17) recreational facilities, fresh food and healthy eating, and health promoting information and the service information. However, only about 30% satisfied/very satisfied with existing recreation facilities; 27% satisfied/very satisfied with the information they need to look after their health. On the positive note, a relatively higher percentage (60%) of the respondents were satisfied/very satisfied with their access to fresh food.

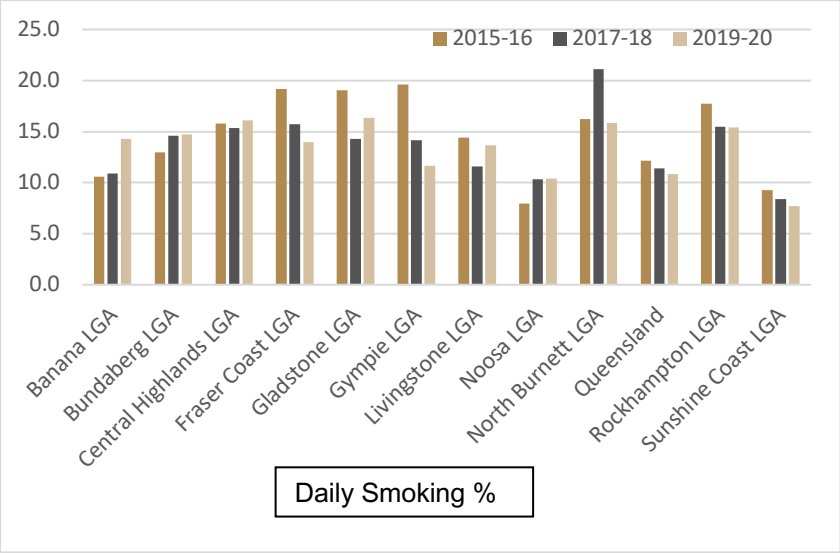
Table 9: Distribution of behavioural and biomedical risk factors (18+ years) within the PHN, LGAs and Queensland, 2019-20

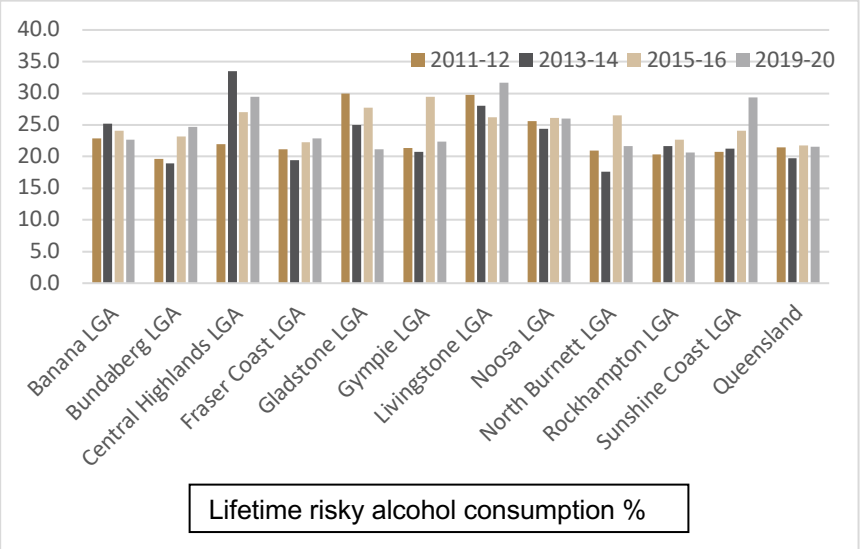
Significantly higher and lower compared to Queensland

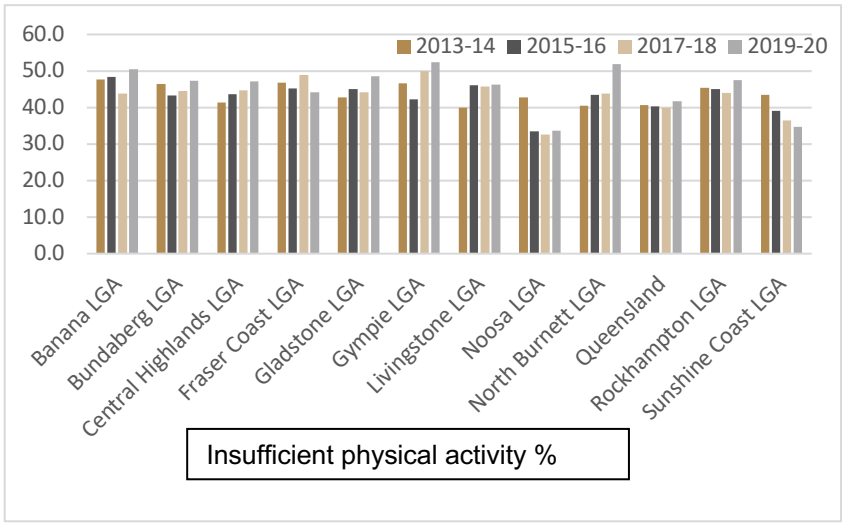
Region	Smoking (Daily Smoker) %, 2020	Alcohol (Lifetime Risky Drinking) %, 2020	Past Week Insufficient Physical activity %, 2020	BMI (Overweight/obese) %, 2020
Queensland	10.9	21.6	41.7	60.0
The PHN	11.7	25.9	29.5	63.2
Central Queensland HHS	**15.4**	**23.7**	**34.0**	68.0
Banana LGA	14.3	22.7	50.6	67.0
Central Highlands LGA	16.1	29.4	47.2	71.4
Gladstone LGA	16.4	21.2	48.6	68.1
Livingstone LGA	13.7	31.7	46.3	66.5
Rockhampton LGA	15.4	20.6	47.5	67.9
Woorabinda LGA	n/a	n/a	n/a	n/a
Wide Bay HHS	**14.5**	**23.7**	**30.2**	68.4
Bundaberg LGA	14.8	24.7	47.4	69.0
Fraser Coast LGA	14.0	22.9	44.2	67.8
North Burnett LGA	15.9	21.7	51.9	71.8
Sunshine Coast HHS	**8.5**	**28.0**	**26.9**	58.1
Gympie LGA	11.6	22.4	52.5	65.3
Noosa LGA	10.4	26.1	33.7	54.2
Sunshine Coast LGA	7.7	29.3	34.7	57.7

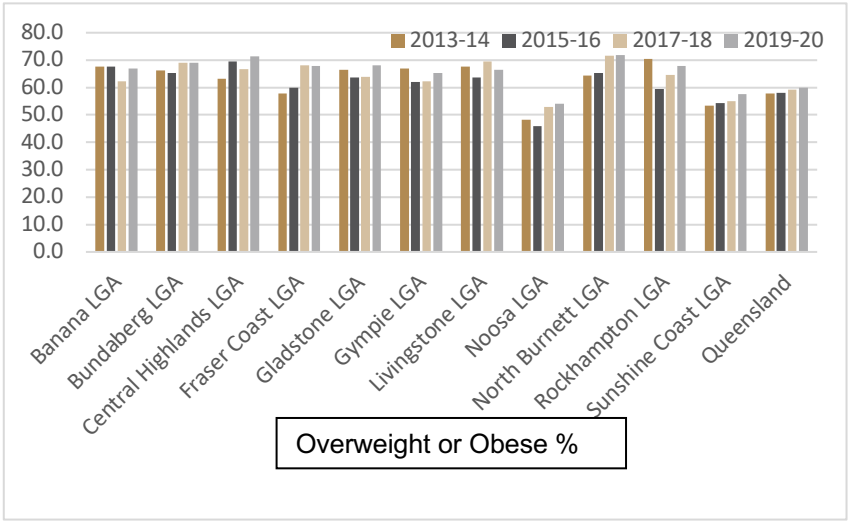
Source: Queensland Health (2021) Queensland survey analytic system (QSAS) Detailed Regional data.

Graph 6: Change overtime in the percentage of persons (18+ years) with risk factors within the PHN, 2015-16 to 2019-20









4.3. Biomedical Factors

4.3.1. High Blood Pressure

High blood pressure is a risk factor for chronic conditions, including stroke, coronary heart disease, heart failure and chronic kidney disease. In Australia (2017-18) (44) :

- The proportion of adults with high blood pressure increased with increasing age.
- 1 in 4 (25%) men had high blood pressure compared with 1 in 5 (20%) women
- people in the lowest socioeconomic areas had the highest rate of high blood pressure (24%).
- 32.5% of the PHN population was diagnosed with hypertension in 2017-18 and the PHN also ranked top 12th amongst 31 PHN across Australia. (highest 43.7% lowest 24.1%).

The Queensland data indicates that (45)

- By measurement, 1 in 5 Queensland adults (22%) reported high blood pressure, putting them at higher risk of cardiovascular disease.
- High blood pressure is treated with medication and lifestyle modifications, which would suggest that the 22% of adults with high blood pressure are either undiagnosed cases or not adequately treated.
- This proportion was highest for SC (28.9%) followed by WB (28.1%) and CQ (19.1%) HHS areas.

PHIDU data, 2017-18 provides high blood pressure related details on LGA levels.

Table 10: Estimated number of people aged 18 years and over who had high blood pressure (modelled estimates), 2017-18

	Number	ASR per 100
Australia	4,259,000	22.8
Queensland	854,109	23.1
Central Queensland, Wide Bay, Sunshine Coast	172,275	23.7
Banana (S) - part b	2,387	23.7
Central Highlands (R)	4,279	23.9
Gladstone (R)	10,707	24.3
Livingstone (S)	7,359	23.5
Rockhampton (R)	14,266	23.9
Woorabinda (S)	n/a	n/a
Bundaberg (R)	20,452	23.6
Fraser Coast (R)	24,066	23.8
North Burnett (R)	2,391	24.3
Gympie (R)	11,251	23.8
Noosa (S)	12,020	22.6
Sunshine Coast (R)	62,943	23.6

Significantly higher compared to Australia
Source: PHIDU (2021) Social Health Atlas of Australia Primary Health Networks. https://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlas-of-australia-primary-health-networks

Uncontrolled blood pressure poses higher risk to health and in 2017-18(46):

- Men are more likely to have uncontrolled high blood pressure than women. In particular, 1 in 4 men (25%) had uncontrolled high blood pressure compared with 1 in 5 (20%) women.
- The proportion of adults with uncontrolled high blood pressure increased with age—from 10% or less among 18–34-year-olds (10% for men and 4.9% for women) to a peak of 47% at age 85 and over (51% for men and 48% for women).

- Uncontrolled high blood pressure is significantly more common in the lowest socioeconomic areas where 1 in 4 people (24%) have uncontrolled high blood pressure, compared with 1 in 5 (19%) people in the highest socioeconomic areas

4.3.2. Cholesterol Levels

Cholesterol is essential for many metabolic processes, including the production of hormones and building cells, however, too much cholesterol in the bloodstream can lead to fatty deposits building up in the blood vessels, making it harder for blood to flow and increasing the risk of heart disease or stroke In 2015, 3% of the disease burden in Australia was due to high cholesterol, and high cholesterol contributed to 37% of coronary heart disease burden and 15% stroke burden.(47).

In 2017-18

- 6.1% of all Australians (1.5 million people) had high cholesterol, which is a decline from 7.1% in 2014-15
- Proportion of people with high cholesterol doubled from age 45-54 years (7%) to 55-64 years (14%).
- 21% of people aged 65 years and over had high cholesterol.

4.3.3. Overweight/Obesity

Being overweight or obese increases the risk of developing chronic diseases such as coronary heart disease, type 2 diabetes, some cancers, respiratory and joint problems. In 2015, 8.4% of the total burden of disease in Australia was due to overweight and obesity. Overweight and obesity was the leading risk factor contributing to non-fatal burden (living with disease) (48).

In 2019-20 (32),

- For the PHN region, 63.2% of the population was overweight or obese compared to Qld (60%).
- Overweight and obesity was higher in Wide Bay and Central Qld (around 68%) while lower (58%) in Sunshine Coast HHS area. (See Table 9 for details)
- There is variation within LGAs: Highest % of people who are overweight and obese is in North Burnett (71.8%), Central highlands (71.4%) and Bundaberg (69%).
- Trend overtime (2009-10 to 2019-20) indicates that except Noosa and Sunshine Coast LGAs the rates of overweight and obesity have been steady above 60%, except some exceptions in the past. The general trend over past three time periods (2015-16 to 2019-20) is upwards for most of the LGAs (32).

4.4. Unhealthy days

Health-related quality of life (HRQoL) is an important measure for public health monitoring. Queensland Health has used ‘unhealthy days’ measures to measure population HRQoL in 2020. These data are collected and reported in terms of four types of unhealthy days in the past 30 days: physical, mental, total and limiting. Limiting unhealthy days refer to the number of days poor physical or mental health limited the participant’s ability to engage in their usual activities, such as self-care, work or recreation. (49). The

Table 11 below indicates unhealthy days associated with poor health assessed in 2017-18.

Table 11: Age-standerdised average unhealthy days in the past 30 days by HHS, Queensland adults,2017-18

HHS/Queensland	Mean unhealthy days (95% CI)			
	Physical	Mental	Total	Limiting
Queensland	4.3 (4.1–4.4)	4.5 (4.3–4.7)	7.6 (7.4–7.9)	2.6 (2.5–2.8)
Central Queensland HHS	4.3 (3.8–4.7)	4.8 (4.3–5.3)	7.9 (7.4–8.5)	2.6 (2.3–3.0)
Wide Bay HHS	5.1 (4.5–5.7)	6.0 (5.3–6.8)	9.3 (8.5–10.1)	3.3 (2.8–3.8)
Sunshine Coast HHS	4.6 (4.0–5.2)	4.5 (3.9–5.1)	7.9 (7.1–8.7)	2.9 (2.5–3.4)

Source: Queensland Health (2020) Health-related quality of life in Queensland - Relationship with risk factors and hospitalisations, from https://www.health.qld.gov.au/__data/assets/pdf_file/0024/1010778/uhd-risk-factors-hosp-2020.pdf .

In Summary,

- *Smoking rates are highest in Gladstone, followed by Central Highlands , North Burnett and Rockhampton LGAs. Smoking rates on rise in Banana, Central highlands, Bundaberg and Noosa overtime.*
- *The highest proportion of adults reporting alcohol consumption at risky levels (lifetime) were from Livingstone, Central Highlands, and Sunshine Coast. Increasing rates over time are noticed in Livingstone and Noosa.*
- *Compared to Queensland, Gympie, North Burnett , Banana (50.6%) and Gladstone (52.5%). have significantly high proportion of people with insufficient activity*
- *Blood pressure rates were higher in Gladstone and Sunshine Coast.*
- *Highest proportion of people who are overweight and obese is in North Burnett , Central highlands and Bundaberg . except Noosa and Sunshine Coast LGAs the rates of overweight and obesity have been steady above 60%, for past 10 years.*
- *Mean unhealthy dates were highest for WBHHS*
- *The PHN community survey further confirmed the importance of having an easy and affordable access to recreational facilities, fresh food and healthy eating, and health promoting information and the service information.*

4.5. Health Conditions

The health needs can be assessed by understanding prevalence of certain health conditions and use of services associated with those. This chapter includes indicators such as incidence of heart attacks, selected cancers, end-stage kidney disease, injury & poisoning and type 2 diabetes amongst other data related to chronic conditions. Chronic diseases are long lasting conditions with persistent effects. Their social and economic consequences can impact on quality of life. Chronic conditions are becoming increasingly common and are a priority for action in the health sector. Many people with chronic conditions experience multimorbidity—the presence of 2 or more chronic conditions at the same time.

Within the PHN (2017-18)(45)

- 24.3% of people had two or more long term health conditions (Qld 21.5%)
- 53.1% of people had one or more long term health conditions (Qld 48.3%)
- Two or more long term health conditions were:
- 3.6%* in young people (0-24 years old)
- 26.1% in people aged 25 to 64 years old
- 48.3%* in people aged 65 and over.

*(*interpret with caution as high margin of error)*

Just under half (47.3%) of Australians had one or more chronic conditions in 2017-18, an increase from 2007-08 when two-fifths (42.2%) of people had one or more chronic conditions. (45)

Overall, in Queensland top six long term chronic conditions were (2017-18) (50)

- Mental and Behavioural Conditions (22.7%), Back Problems (16.8%), Hayfever and Allergic Rhinitis (15.3%), Arthritis (14.1%), Asthma (11.9%) and hypertension (10.1%).
- Followed by Heart, stroke and vascular disease (4.7%), Diabetes Mellitus (4.5%), Osteoporosis (3.8%), COPD (3.4%), Cancer (1.6%) and Kidney Disease (1.0%).

4.5.1. Burden of chronic Disease

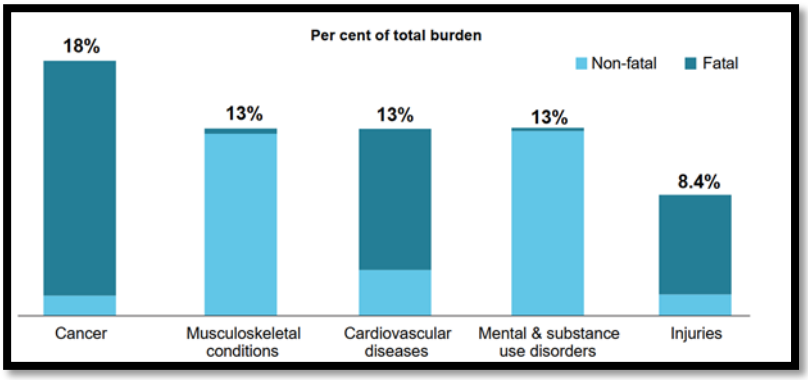
In 2018, the 5 disease groups that caused the most burden across Australia were cancer, musculoskeletal conditions, cardiovascular diseases, mental & substance use disorders and injuries. Together these disease groups accounted for around two-thirds (65%) of the total burden. With the exception of injuries, which includes acute injuries, these disease groups include mostly chronic, or long-lasting, conditions(34) .

In 2018, 38% of the burden of disease could have been prevented by reducing or avoiding exposure to the modifiable risk factors. The risk factors contributing the most burden in 2018 were tobacco use (8.6%), overweight (including obesity) (8.4%), dietary risks (5.4%), high blood pressure (5.1%), and alcohol use (4.5%). The leading 5 diseases causing burden (% of total DALY) in 2018 were:

- Coronary heart disease 6.3%
- Back pain & problems 4.5%
- Dementia 4.0%
- Chronic obstructive pulmonary disease (COPD) 3.5%
- Lung cancer 3.2%

The leading diseases causing fatal burden were coronary heart disease (which had a large decline between 2003 and 2018), lung cancer (slight decline) and suicide & self-inflicted injuries (slight increase). Back pain & problems (which increased slightly between 2003 and 2018) was the leading cause of non-fatal burden, followed by anxiety disorders and depressive disorders (which remained stable).

Graph 7: Proportion (%) of total burden, and fatal and non-fatal composition of total burden, for the leading 5 diseases groups in 2018



Source: (AIHW) Australian Institute of Health and Welfare (2021) 'Australian Burden of Disease Study 2018: key findings'. https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/burden-of-disease/overview

The 2015 Burden of Disease Study indicates that for: (41).

- 0-5 age group: Infant and congenital conditions accounted for most of the burden in children aged under 5; 4 of the 5 leading causes of burden in this age group were from this disease group.
- 5–14-years: Among children aged 5–14, asthma and mental disorders (including anxiety disorders and depressive disorders) contributed the most burden.
- 15–44-years: Suicide and self-inflicted injuries was the leading cause of burden in young people aged 15–24 and those aged 25–44.
- 25- to 64-years: Back pain and problems emerged as the second leading cause of burden for adults aged 25–44 and 45–64.
- 45 and above: Coronary heart disease was the leading cause of burden in adults aged 45–64, and Australians aged 65 and over.

The burden of modifiable risk factors and avoidable chronic conditions is very high and specific chronic conditions that contribute to this avoidable burden of disease are included below.

4.6. Specific Health Conditions

4.6.1. Diabetes Mellitus

Diabetes is a chronic condition with serious health implications. Complications of diabetes include stroke, heart disease, kidney disease, eye disease, foot ulcers and foot amputations. Diabetes complications accounted for 7% of all potentially preventable hospitalisations in Australia in 2017–18. Hospitalisation for diabetes complications is common and after standardising to remove age and sex differences between populations, the rate of hospitalisation for diabetes in 2017–18 was 12.2 times as high in the area with the highest rate than in the area with the lowest rate. The rate for Aboriginal and Torres Strait Islander people was 3.7 times as high as the rate for other Australians.(51) Being overweight or obese, unhealthy lifestyle, such as insufficient exercise, obesity, unhealthy diet, and smoking are causal factors for some types of diabetes. The prevalence of diabetes/high sugar levels increases with age and is higher in remote areas than in non-remote areas.(50)

Prevalence of diabetes

In Australia, 1,179,800 people (4.4%) lived with diabetes in 2017-18.(52).

In 2017-18, the rate of self-reported diabetes

was lower compared to 2014-15 (4.7%)

increased with age 55-64 years (10.2%), 65-74 years (15.5%) and 75+ years (18.6%)

higher in outer regional and remote areas and in socio-economically disadvantaged areas

In Queensland, around 4.1% (n=217,300) of population was living with diabetes mellitus in 2017-18. The prevalence increased with increasing age with around 7.4% of 45-64 years old and around 14% of 65+ years old people having DM as a long term condition. (50) A small proportion of people showed high sugar levels in blood or urine.

In 2017-18, estimated number of people with diabetes mellitus were (31): (See Table 12)

- Higher in North Burnett LGA (ASR 6.2 per 100 people) followed by Central Highlands and Bundaberg (ASR 5.5 per 100 people). None of the ASR were significantly higher
- Significantly lower rates compared to Australia (ASR 4.9 per 100 people) were in the PHN (ASR 4.5 per 100 people) and Noosa (ASR 3.2 per 100 people)

Incidence of insulin treated diabetes in 2019:(53)

- Type 1 diabetes: In Australia a total of 30,814 people were insulin dependent and registered on the National Diabetes Register. In Qld 665 people (ASR 13.5 per 100,000) while in the PHN 122 people with type 1 diabetes (ASR 15.6 per 100,000 people) were insulin dependent. The rate of insulin dependent type 1 diabetes population in the PHN was 8th highest from 29 PHNs on whom the data is reported.
- Type 2 diabetes: In Australia, 16,637 people with type 2 diabetes were treated with insulin (ASR 4082.4 per 100,000 people). This incidence was ASR 4155.1 per 100,000 people (n=3459) in Qld and ASR 4003.6 per 100,000 people (n=627) for the PHN. The PHN ranked 18th from the 31 PHNs. (highest 6,553.1 and lowest 1,381.2)
- Incidence of insulin treated type 2 diabetes was higher in major cities and in least disadvantaged areas.

Diabetes related hospitalisations

- Number of type 2 diabetes hospitalisations (principal and/or additional diagnosis) in 2017–18 was 3,674 per 100,000 and increased with age (Rate of 1,077 in 35 to 44 years to 24,428 in 75-84 years per 100,000) (AIHW 52)
- In 2018–19, diabetes related hospitalisations were significantly higher in Central Queensland HHS area (284 ASR per 100,000 people, Qld 221) while these rates were significantly lower in Sunshine Coast HHS area (195 ASR per 100,000 people) (54).
- In 2018-19,(31) admissions for diabetes (public hospitals) were around 45,356 hospitalisations (ASR 180.2 per 100,000) across Australia. There were 9,715 admissions (ASR 193.5) across Qld public hospitals (ASR 180.2 per 100,000) and 1,812 across the PHN region (ASR 185.7 per 100,000). Significantly higher rate of diabetes related hospitalisations was reported in Fraser Coast ((ASR 218.4 per 100,000) LGA, Gympie (256.7), North Burnett (280.4) and Rockhampton (341.8) LGAs. Two LGAs, Noosa (74.9) and Sunshine Coast (125.4), had significantly lower diabetes related hospital admission rates.
- In 2018-19,(31) admissions for chronic diabetes complications (public hospitals) were around 45,356 hospitalisations (ASR 180.2 per 100,000) across Australia. There were 9,715 admissions (ASR 193.5) across Qld public hospitals and 1,812 across the PHN region (ASR 185.7 per 100,000). Significantly higher rate of chronic diabetes complications related hospitalisations was reported in Banana (398.9), Fraser Coast (218.4), Gympie (256.7), North

Burnett (280.4) and Rockhampton (341.8) LGAs. Two LGAs, Noosa (74.9) and Sunshine Coast (125.4), had significantly lower diabetes related hospital admission rates. This is similar to the diabetes related hospitalisations above and indicates that most of these admissions were associated with diabetes related complications.

Diabetes related deaths

- Number of diabetes deaths (underlying and/or associated cause) in 2018 were 16,666 from which 10.5% were attributed to diabetes. The rate of diabetes deaths per 100,000 population increased with increasing age. (from 49 per 100,000 persons in the age group 55-64 while 1,222 per 100,000 persons for people aged 85+)(AIHW 52)
- Significantly higher rates of deaths associated with diabetes diagnosis were reported in Wide Bay HHS (2016-18) in 2020. (WB 19 compared to Qld 15 ASR per 100,000 people).
- Pre-mature mortality associated with diabetes (2014-18) was reported by PHIDU. (31) The average annual ASR per 100,000 for the PHN was 6.2 (n=295) (compared to Qld 7.2 and Australia 6.5). Significantly higher rates within the PHN were reported in Fraser Coast LGA (ASR 9.6 per 100,000 people, n=70), compared to Australia.

Diabetes complications and hospitalisations could be reduced by better management, and prevention, of diabetes. This may include education about self-management of diabetes, and better coordinated health care.

Table 12: Diabetes prevalence, related hospitalisations (public hospitals), avoidable deaths associated with diabetes and proportion of overweight/obese people, by LGA

	Estimated number of people with diabetes mellitus (modelled estimates), 2017-18		Admissions for diabetes, persons - Public hospitals, 2018/19		Avoidable Deaths from Diabetes (0 to 74 years), 2014-2018		Overweight/ Obese, 2019-2020*
	Number	ASR per 100	Number	ASR per 100	Number	Average annual ASR per 100,000	%
AUSTRALIA+	1,182,600	4.9	45,356	180.2	7,364	6.5	
Queensland	227,958	4.7	9,715	193.5	1,649	7.2	60.0
the PHN	44,980	4.5	1,812	185.7	295	6.2	63.2
Banana (S) - part b	690	5.3	52	398.9	7	10.6	67.0
Central Highlands (R)	1,149	5.5	230	199.9	11	10.9	71.4
Gladstone (R)	2,393	4.4	117	204.5	19	7.3	68.1
Livingstone (S)	1,984	4.7	82	198.0	11	5.4	66.5
Rockhampton (R)	4,103	5.3	274	341.8	24	6.7	67.9
Bundaberg (R)	6,926	5.5	230	199.9	43	7.3	69.0
Fraser Coast (R)	8,100	5.4	297	218.4	70	9.6	67.8
North Burnett (R)	880	6.2	36	280.4	n/a	n/a	71.8
Gympie (R)	3,419	5.0	160	256.7	21	6.3	65.3
Noosa (S)	2,459	3.2	52	74.9	16	4.3	54.2
Sunshine Coast (R)	12,831	3.5	456	125.4	67	3.9	57.7

Interpret carefully as data is from multiple years and does not represent same cohort.
Coded Significantly **higher** and **lower** compared to Queensland
Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks.* https://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlas-of-australia-primary-health-networks
Queensland Health (2021) Queensland survey analytic system (QSAS) Detailed Regional data.

4.6.2. Stroke

Stroke is often preventable as many of its risk factors are modifiable. These include biomedical risk factors such as high blood pressure, insufficient physical activity, overweight and obesity, and tobacco smoking. The risk factors also include high cholesterol and atrial fibrillation. Stroke contributes to premature death, disability, and preventable hospitalisations, consequently a National Strategic Action Plan for Heart Disease and Stroke is under development. In Australia, one stroke occurs every 19 minutes and in 2020(55),

- there were 445,087 Australian's living with stroke
- an estimated 27,428 Australians will experience stoke for the first time
- 8,703 died from stroke
-

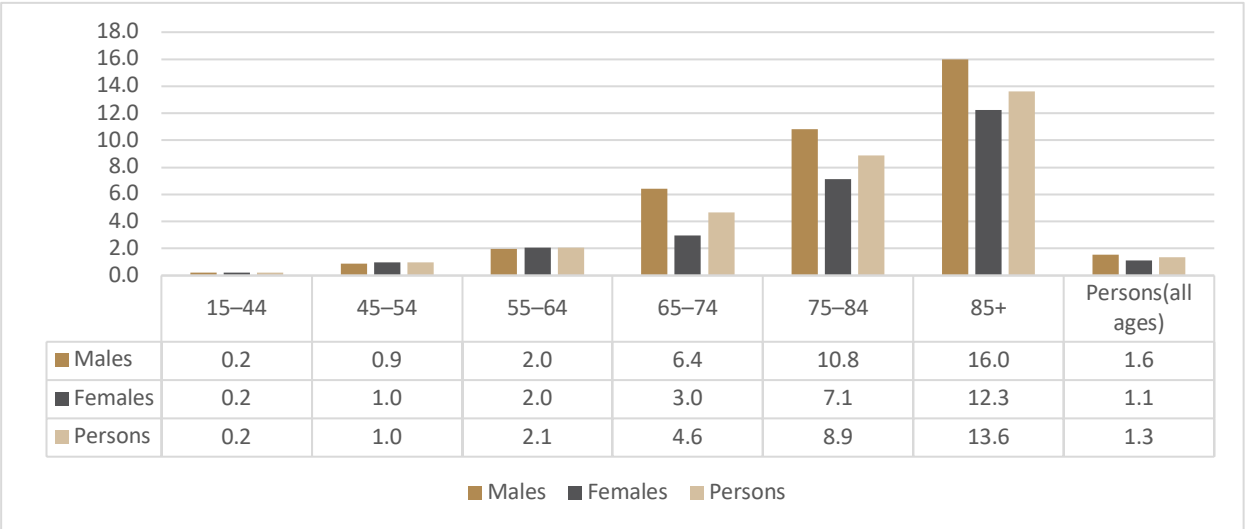
Burden of Disease

- In 2015, stroke accounted for 2.7% of the total burden of disease in Australia and was the 10th leading specific cause of disease burden. Stroke was the third highest disease burden in people aged 85 and over, accounting for 6.6% of the burden in males and 8.1% of the burden in females. The total burden of disease due to stroke decreased by 41% between 2003 and 2015. This included a 42% decline in the fatal burden and a 30% decline in the non-fatal burden(56).
- The average length of stay nationally for stroke patients in acute hospital care was 7 days in 2017–18. Stroke patients in rehabilitation care had an average length of stay of 24 days(56)
- Burden of disease was higher in Indigenous people (2.3 times compared to non-Indigenous), in people living in remote or very remote regions (1.2 times higher compared to major cities) and higher in lowest SES (1.4 times compared to highest SES). (56)

Prevalence

- In 2018, in Australia, there were 386,900 (ASR 1.3 per 100 people) people living with stroke (56). This rate increased with increasing age and men seem to be at higher risk compared to females.

Graph 8: Age and gender distribution of stroke across Australia, ASR per 100 people, 2018

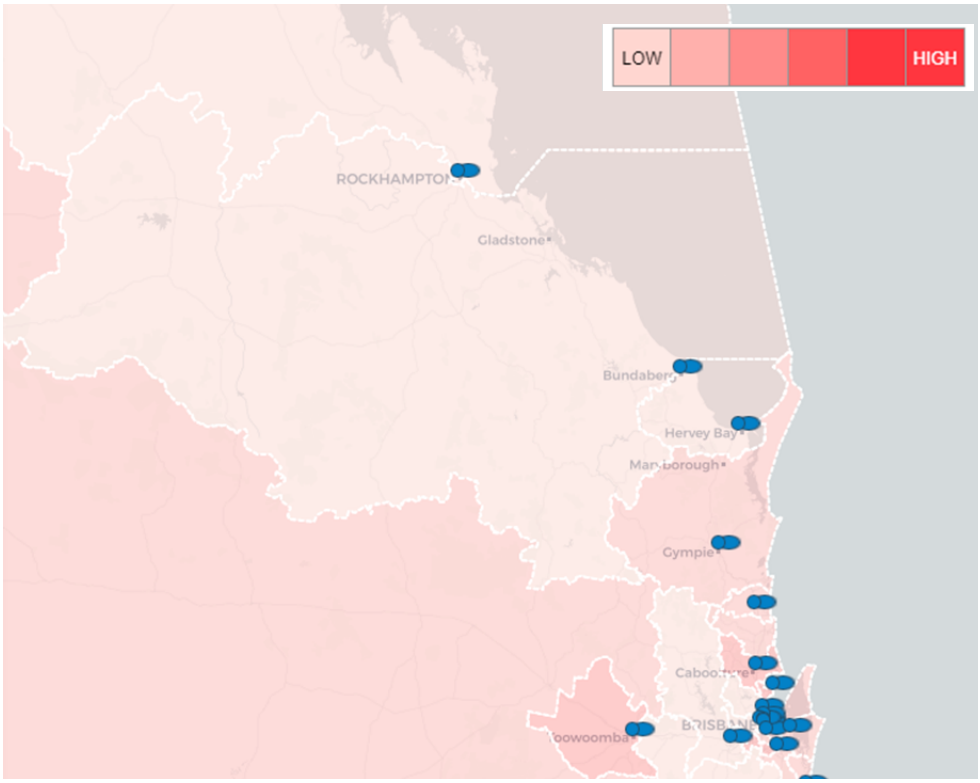


	15–44	45–54	55–64	65–74	75–84	85+	Persons(all ages)
Males	0.2	0.9	2.0	6.4	10.8	16.0	1.6
Females	0.2	1.0	2.0	3.0	7.1	12.3	1.1
Persons	0.2	1.0	2.1	4.6	8.9	13.6	1.3

Source: (AIHW) Australian Institute of Health and Welfare (2020) 'Cardiovascular disease webpages data tables.

- Stroke Foundation mapping indicates that in 2020, there were 5,371 new cases of stroke across Qld, prevalence was 87,676 and there were 1,634 deaths. (57) the map below shows the incidence of stroke in 2020 and the locations of Stroke units across the PHN. ***Locations such as Gympie, Sunshine Coast and Fraser Coast LGAs have higher incidence and few stroke units.***

Figure 2: Map of number of new stroke cases in 2020 and locations of stroke units, across the PHN



Source: Stroke Foundation (2020) No Postcode Untouched Stroke In Australia 2020. http://maps.strokefoundation.com.au/?stat=incidence

Stroke related hospitalisations

- In 2017–18, nationally, there were almost 40,000 acute care hospitalisations with a principal diagnosis of stroke, at a rate of 133 per 100,000 population. Acute care hospitalisation rates were higher among males than females (1.4 times as high), and most hospitalisations (73%) were for people aged 65 and over.(56)
- In 2017, nationally, there were around 38,000 stroke events—more than 100 every day. The rate of these events, based on hospital and mortality data, fell 24% between 2001 and 2017, from an age-standardised rate of 169 to 129 per 100,000 population. The rate of decline was greater among those aged 75 and over, when compared to those aged 55–74(56).
- In 2018–19, stroke related hospitalisations were significantly higher across the PHN (ASR 351 per 100,000) compared to Qld (ASR 299 per 100,000). Within the PHN, the significantly high rates were highest in WBHHS (388) followed by CQHHS (355) and SCHHS (330) (32)
- Admissions for stroke in 2018-19 in public hospitals was significantly higher within the PHN (ASR 237.9 per 100,000) compared to Australia (ASR 213.3 per 100,000). These rates were significantly higher for Fraser Coast (261.6), Gympie (265.3), Rockhampton (255.4) and sunshine Coast (248.4).

Stroke related deaths

- In 2018, stroke was recorded as the underlying cause of 8,400 deaths, accounting for 5.3% of all deaths in Australia. Between 1980 and 2018, overall death rates for stroke have fallen by three-quarters (75%), or 3.5% a year. The rate of decline has remained steady in people aged 75 and over but slowed among younger age group(56).
- Pre-mature deaths associated with cerebrovascular disease (0-74 years) from 2014-18 within the PHN were not significantly higher compared to Australia (ASR 7.9 per 100,000) but higher ASR were reported in Gladstone (9.6 per 100,000), Rockhampton (11.4 per 100,000) and North Burnett (11.7 per 100,000) (31)
- The rate of deaths due to stroke was higher in Indigenous Australians (1.3 time higher compared to non-Indigenous) and people from low SES (1.3 time compared to highest SES) (56)

4.6.3. Chronic Kidney Disease

Chronic kidney disease (CKD) refers to all conditions of the kidney, lasting at least 3 months. CKD is common and often detected too late to be reversible, but it is largely preventable because many of its risk factors—high blood pressure, tobacco smoking, overweight and obesity, and impaired glucose regulation.

Prevalence

Detailed prevalence data is from 2011-12 hence not used in this HNA, instead the prevalence of End staged kidney disease (ESKD) is used. ESKD is the most severe form of chronic kidney disease. (58)

In 2018, there were around 3,100 new cases of treated ESKD in Australia. This equates to 8 cases diagnosed every day, or an incidence rate of 11 cases per 100,000 population.

The leading causes of ESKD among new patients were:

- diabetes (38%)
- glomerulonephritis—a type of kidney inflammation (16%)
- hypertension (13%)
- polycystic disease—presence of multiple cysts in the kidney (6.6%).

Age standardised incidence rates of treated ESKD have almost doubled from 6 persons per 100,000 population in 1989 to 11 persons per 100,000 in 2018. This increase was greater for males, from 6 cases per 100,000 population in 1989 to 15 cases per 100,000 in 2018, than for females, increasing from 5 to 8 cases per 100,000 population from 1989 to 2018. Since 2006, the incidence rate of treated ESKD has remained largely unchanged for both males and females.

Hospitalisations

There were approximately 1.8 million hospitalisations where chronic kidney disease (CKD) was recorded as the principal and/or additional diagnosis in 2017–18, according to the Australian Institute of Health and Welfare National Hospital Morbidity Database. This represents 16% of all hospitalisations in Australia. Dialysis accounted for the vast majority (79%) of these hospitalisations.(58)

In 2017–18, CKD hospitalisation rates (as a principal or additional diagnosis):(58)

- were between 1.3 and 2 times **higher for females than males before the age of 45**. From age 45, age-specific rates were **higher for males than females**.
- **increased with age**, with the majority (70%) occurring in those aged 65 and over. CKD hospitalisation rates for males and females were highest in those aged 85 and over (19,100 and 11,000 per 100,000 population, respectively)—at least 1.6 times as high as those in the 75–84 age group (11,100 and 6,900 per 100,000, respectively)

- **2.7 times as high for people living in Remote and very remote areas** compared with Major cities. The difference in these rates was much larger for females than males—4 times as high for females (4,100 and 1,000 per 100,000 population, respectively) and 1.8 times as high for males (2,700 and 1,500 per 100,000, respectively).
- **twice as high for people living in the lowest socioeconomic areas** compared with those living in the highest socioeconomic areas—over twice as high for females (1,600 and 700 per 100,000) and almost twice as high for males (2,000 compared with 1,000 per 100,000, respectively)
- **among Indigenous Australians was almost 5 times the rate among non-Indigenous** Australians (5,700 and 1,200 per 100,000, respectively). The differences in CKD hospitalisation rates between Indigenous and non-Indigenous Australians were greater for females than males— almost 7 times as high for females (6,300 and 954 per 100,000, respectively) and almost 4 times as high for males (5,100 and 1,400 per 100,000, respectively).

In 2018-19, CKD related hospital admissions in public hospitals were significantly higher within the PHN (ASR 173.3 per 100,000) compared to Australia (ASR 146.5 per 100,000) (31) These rates were significantly higher in ***Central Highlands LGA (198.3), Fraser Coast LGA (232.7), Livingstone LGA (214.8) and Rockhampton LGA (229.5).***

Deaths

Chronic kidney disease (CKD) contributed to 11% of all deaths in 2018 (around 16,800 deaths), according to the Australian Institute of Health and Welfare National Mortality Database. CKD was the underlying cause of death in around 3,600 deaths (21% of CKD deaths). It was an associated cause of death in a further 13,200 deaths (79% of CKD deaths)(58). CKD death rates (as the underlying or associated cause of death) increased with remoteness, socioeconomic disadvantage and from Aboriginal or Torres Strait Islander community. The Table 13 below summarise some significant rates within the PHN.(58)

Table 13: Deaths with chronic kidney disease listed as the underlying and/or an associated cause, by sex and PHN/PHAs, 2013–2017

	Persons			Males			Females		
	Annualised deaths	Crude rate (deaths per	Age-standardised rate (death	Annualised deaths	Crude rate (deaths per	Age-standardised rate (death	Annualised deaths	Crude rate (deaths per	Age-standardised rate (death
Australia	16,829	70.5	56.6	8,815	74.4	71.1	8,013	66.7	46.0
Qld	3,306	69.0	60.8	1,729	72.7	75.2	1,577	65.4	50.1
The PHN	695	83.6	58.1	378	91.7	71.9	317	75.7	46.6
Population Health Areas									
Emerald	6	44.3	140.0	4	53.6	n.p.	n.p.	34.7	n.p.
Bouldercombe/ Gracemere/ Mount Morgan	13	77.5	85.1	7	87.9	107.1	6	67.2	67.7
Rockhampton - Central	38	141.3	84.9	18	134.0	105.4	21	149.7	73.3
Nambour	26	128.4	73.4	13	132.7	96.7	13	124.4	55.4
Noosa Heads/ Noosaville	15	110.9	50.9	9	138.0	72.1	6	85.6	34.4
Tewantin	27	257.1	100.6	12	244.5	114.1	15	268.5	91.3
Bundaberg - South	33	122.5	68.0	17	126.8	81.9	16	118.3	58.8
Bundaberg/ Bundaberg North/ Millbank area	33	154.8	74.9	19	181.0	103.3	14	130.4	51.2
Kingaroy Region - North/ Nanango	21	109.8	77.5	11	113.6	83.4	10	106.0	69.1
Gympie - North/ Gympie - South	27	127.0	70.8	15	148.7	97.9	12	107.2	50.2
Torquay - Scarness - Kawungan/ Urangan - Wondunna	36	130.4	67.6	20	148.5	83.9	16	113.6	54.9
Maryborough (Qld)/ Tinana	32	131.7	75.6	16	134.6	91.5	15	128.8	61.5

Coded Significantly **higher** compared to Queensland
Source: (AIHW) Australian Institute of Health and Welfare (2020) Chronic kidney disease. Cat. no. CDK 16. Canberra: AIHW. https://www.aihw.gov.au/reports/chronic-kidney-disease/chronic-kidney-disease.

4.6.4. Cardiovascular Disease

The term cardiovascular disease (CVD) is used to describe many different conditions affecting the heart and blood vessels. The most common and serious types of CVD include coronary heart disease, stroke and heart failure. CVD generally has a greater impact on males, the elderly, Indigenous Australians, and people living in remote and socioeconomically disadvantaged areas.

Burden of disease

The Australian Burden of Disease study (2018) indicates that (34)

- Cardiovascular disease (CVD) accounted for almost 13% of the total burden of disease in 2018, it was 14% in 2015, having decreased from 15% in 2011 and 18% in 2003.
- When considering individual diseases, coronary heart disease was the leading cause of burden (6.3%), and also showed the largest reduction in total burden over time—from 21 to 10 DALY per 1,000 people between 2003 and 2018. This reduction was mainly driven by large declines in fatal burden.

Prevalence
An estimated 1.2 million (5.6%) Australian adults aged 18 years and over had 1 or more conditions related to heart or vascular disease, including stroke, in 2017–18, based on self-reported data from the Australian Bureau of Statistics (ABS) 2017–18 National Health Survey.(50)

Hospitalisations

In 2017–18, across Australia there were around:(59)

- 583,900 hospitalisations with CVD as the principal diagnosis (the diagnosis largely responsible for hospitalisation)
- 861,200 hospitalisations with CVD as an additional diagnosis (a coexisting condition with the principal diagnosis or a condition arising during hospitalisation that affects patient management).

When CVD was listed as the principal diagnosis, the leading conditions were:

- coronary heart disease (28% of CVD hospitalisations)
- heart failure and cardiomyopathy (12%)
- stroke (11%) and peripheral vascular disease (6%).
- Four in five hospitalisations occurred in people aged 55 and above
- 11% of all hospitalisations were associated with CVD
- The hospitalisation rates were 30% higher among those living in remote ares compared to major cities
- 20% higher for those in the lowest socioeconomic areas compared with the highest socioeconomic areas—2,200 and 1,800 per 100,000, respectively.
- the rate among Indigenous Australians was overall 1.6 times as high as the non-Indigenous rate.

In 2018-19, hospitalisations due to coronary heart disease (ICD I20-I25) were significantly higher across the PHN (54)

For the PHN this rate was 986 ASR per 100,000 people compared to Qld 785 ASR per 100,000 people.

Significantly higher rates were seen across Wide Bay HHS (1,107 ASR), Central Queensland HHS (1,213 ASR) and Sunshine Coast HHS (841 ASR).

Data on PHA are published by AIHW and indicates (59)

- Significantly higher rates of CVD as the principle diagnosis (ICD I00-I99) hospitalisation all across the PHN (ASR 2630.8 per 100,000) compared to Australia (ASR 2027.5 per 100,000)
- PHIDU data reports admissions for public hospitals for circulatory system related admissions that includes CVDs.(31) Table below summarises this information.

Table 14: Prevalence and Hospital admissions for cardiovascular system related conditions, PHN and LGAs, 2018-19

	Prevalence		Hospital Admissions							
	Estimated number of people with heart, stroke and vascular disease (modelled estimates)		Circulatory system diseases		IHD		Heart Failure		Stroke	
	Number	ASR per 100	Number	ASR per 100,000	Number	ASR per 100,000	Number	ASR per 100,000	Number	ASR per 100,000
AUSTRALIA+	1,156,500	4.8	391,814	1,556.4	96,193	382.1	50,216	199.5	53,697	213.3
Queensland	224,130	4.7	84,500	1,702.3	21,087	422.2	9,415	193.2	11,562	234.1
The PHN	47,395	4.6	19,732	1,889.7	5,416	513.0	2,029	187.6	2,523	237.9
Banana	617	4.8	317	2,445.8	96	730.5	45	359.5	33	254.9
Central Highlands	951	5.1	504	2,571.1	147	726.1	47	304.0	50	273.8
Gladstone	2,525	5.0	1,143	2,221.6	349	652.2	111	254.0	129	262.6
Livingstone	2,202	5.2	1,061	2,445.6	346	779.0	96	221.9	128	294.0
Rockhampton	4,029	5.2	1,952	2,458.6	612	773.2	184	230.4	203	255.4
Woorabinda	n/a	n/a	19	3,823.9	6	1,242.0	n/a	n/a	n/a	n/a
Bundaberg	6,231	4.8	2,242	1,743.6	616	476.8	248	178.7	225	169.6
Fraser Coast	7,484	4.8	3,669	2,348.4	1,260	796.3	337	199.8	422	261.6
North Burnett	779	5.3	350	2,405.2	110	751.6	32	205.7	19	130.0
Gympie	3,328	4.8	1,473	2,144.6	403	572.0	168	237.8	185	265.3
Noosa	3,067	3.9	788	999.4	188	233.7	70	84.8	139	171.5
Sunshine Coast	16,144	4.3	6,214	1,591.9	1,282	327.1	689	167.8	988	248.4

Coded Significantly **higher** and **lower** compared to Queensland
Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks*.

Deaths

While the ASR for deaths due to cardiovascular disease (2016-18) didn't differ at the PHN level compared to Qld (141 ASR per 100,000), these rates were (54)

- Significantly higher across Central Queensland HHS (164 ASR per 100,000) and Wide Bay HHS (160 ASR per 100,000)
- Significantly lower across Sunshine Coast HHS (124 ASR per 100,000)

Deaths associated with circulatory system disease (0-74 years) in 2014-2018, were

- significantly lower across the PHN (Annual average ASR 40.8 er 100,000) compared to Australia (43.1)

- Significantly higher in Fraser Coast LGA (ASR 50.1 per 100,000), Gladstone LGA (51.1), North Burnett LGA (61.1) and Rockhampton LGA (61.0)

Deaths associated with Ischemic Heart Disease (0-74 years), 2014-218, were

- Significantly higher in Fraser Coast LGA (annualised ASR 26.6 per 100,000), Gladstone LGA (28.3), and Rockhampton LGA (34.5) compared to Australia (22.0)

4.6.5. Respiratory Diseases

Chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease, make a large contribution to disease burden among especially elderly people and are associated with poor health and wellbeing. Risk factors associated with chronic respiratory conditions can be behavioural, environmental or genetic. Risk factors that cannot be changed include age and genetic predisposition. Risk factors that can be changed include smoking; exposure to environmental fumes, carbon-based cooking, and heating fuels; occupational hazards; poor nutrition; overweight/obesity; and sedentary lifestyle.

Burden of Disease

Chronic respiratory diseases contribute substantially to the disease burden in the Australian population. In recognition of this burden, the National Asthma Strategy was launched in January 2018(60). Asthma action plans are one of the most effective asthma interventions available. The National Strategic Action Plan for Lung Conditions was launched in February 2019 (61).

The Australian Burden of Disease Study found that, in 2018, COPD contributed 3.5% of the total burden of disease in Australia (34). In 2015, Respiratory diseases were ranked as the sixth leading disease group contributing to total burden, after cancer, cardiovascular disease, musculoskeletal conditions, mental and substance use disorders, and injuries. COPD contributed 51% of the respiratory diseases burden, and asthma contributed 34%. At the individual disease level: COPD was the third leading cause of total burden; asthma was ranked as the ninth leading cause of total burden overall, but was the first leading cause of total burden among children aged 5 to 14.(48).

Prevalence

In Australia, in 2017-18, (62)

- Chronic respiratory conditions affected almost one third (31%) of Australians. Of the estimated 7.4 million Australians with these conditions, 4.7 million (19% of the total population) had allergic rhinitis ('hay fever'); 2.7 million (11%) had asthma; 2.0 million (8.4%) had chronic sinusitis; and 599,000 (2.5%) had COPD.

Asthma:

- Nationally, the prevalence of asthma increased in a decade from 2007-08 (9.9%) to 2017-18 (11%). The prevalence was common in boys at younger ages (0-14) and women at older ages (25+ years).
- 81% of people with Asthma had co-morbidities (mainly arthritis and back-problems)
- ASR per 100 people for asthma was significantly higher in the PHN (12.6) and LGAs of Bundaberg (12.9), Fraser Coast (13.1), Gympie (14.6), Rockhampton (13.0) and Sunshine Coast (12.2) compared to Australia (11.2) . (31) (See Table 15 for details)

COPD:

- Nationally, the prevalence of COPD was 4.6% in 2017-18 (3.9% in 2007-08). Mostly prevalent in 45 and above age group, COPD prevalence increased with age.
- 90% of people with COPD had co-morbidities (mainly arthritis and asthma)
- ASR per 100 people was significantly higher within the PHN (3.6) compared to Australia (2.5). This rate was also higher for Bundaberg (3.9), Fraser Coast (4.0), Gympie (3.9), Rockhampton (4.0) and Sunshine Coast (3.3). (31) (See Table 15 for details)

Hospitalisations

Nationally, in 2017–18, (62)

- asthma was the principal diagnosis in 38,800 hospitalisations and the hospitalisation rate for asthma fluctuated during the last decade, with the highest rate at 183 per 100,000 population in 2009–10 and the lowest at 158 per 100,000 population in 2017–18
- COPD was the principal diagnosis in 77,700 hospitalisations (732 per 100,000) of people aged 45 and over and the hospitalisation rate for COPD also fluctuated, with the highest at 757 per 100,000 population in 2016–17 and the lowest at 663 per 100,000 population in 2013–14.

Within the PHN (31)

- Significantly higher rates of asthma related admissions in public hospitals were in the PHN (166.3 ASR per 100,000) and the LGAs of Bundaberg (173.5), Gladstone (199.6), North Burnett (234.8) and Sunshine Coast (198.8) compared to Australia (139.5) . (See Table 15 for details)
- Significantly higher COPD related hospitalisation were within the PHN (326.2 ASR per 100,000) and nine LGAs from 11 LGAs for which data is available. (See Table 15 for details)

In 2018-19, (54)

- COPD related hospitalisations were significantly higher in Central Queensland (520 ASR per 100,000 people) and Wide Bay (608 ASR per 100,000 people) HHS areas compared to Qld (389 ASR per 100,000 people)
- Asthma related hospitalisations were similar to Qld ASR however slightly higher in Sunshine Coast and Wide Bay HHS and lower in Central Queensland HHS

Deaths

- While deaths rates (2016-18) within the PHN from all respiratory diseases combined didn't differ from Qld, these rates were significantly higher in Wide Bay HHS (39 ASR per 100,000 people) and Central Queensland HHS (43 ASR per 100,000 people) compared to Qld (31 ASR) (54)
- Avoidable deaths associated with COPD were significantly higher in the PHN (10.8 average annual ASR per 100,000) compared to Australia (9.7) and LGAs of Bundaberg (12.5), Fraser Coast (15.0) and Rockhampton (18.8) (See Table 15 for details)

Treatment and management

Asthma and COPD are conditions that can be managed in primary care most of the time. Risk factors that can be changed include smoking; poor nutrition; overweight/obesity; and sedentary lifestyle. These risk factors are higher in people living in low socio-economic conditions and Aboriginal and Torres Straits populations. Low health literacy associated with lower educational levels also contributes to not seeking timely treatments. While higher prevalence of asthma and COPD is associated with various risk factors, higher avoidable hospitalisations and deaths associated with asthma and COPD indicate lack of timely and appropriate heath care in the regions. Rurality also contributes to the concerns due to lack of workforce and/or moving workforce. General practitioners (GPs) play an important role in managing asthma in the community, but there is currently no nationally consistent primary health care data collection to monitor provision of care by GPs. ***One of the key steps in managing asthma is for patients to follow a personal asthma action plan developed with their GP.***

Table 15: Prevalence, hospitalisation and deaths associated with asthma and COPD, PHN and LGA.

	Estimated number of people with asthma (modelled estimates), 2017-18		Admissions for asthma, persons - Public hospitals, 2018/19		Avoidable admissions for chronic asthma, persons - Public hospitals, 2018/19		Estimated number of people with COPD (modelled estimates), 2017-18		Admissions for COPD - Public hospitals, 2018/19		Avoidable admissions for COPD - Public hospitals, 2018/19		Avoidable Deaths COPD , 0-74 years, 2014-18	
	Number	ASR per 100	Number	ASR per 100,000	Number	ASR per 100,000	Number	ASR per 100	Number	ASR per 100,000	Number	ASR per 100,000	Number	Average Annual ASR per 100,000
AUSTRALIA+	2,705,100	11.2	35,118	139.5	29,721	118.1	598,800	2.5	66,762	265.2	65,800	261.4	10,967	9.7
Queensland	570,319	11.8	7,319	143.5	6,838	133.9	168,721	3.5	14,875	299.8	14,675	295.8	5,443	7.9
the PHN	107,864	12.6	1,428	166.3	1,332	152.3	34,219	3.6	3,525	326.2	3,488	322.5	534	10.8
Banana (S) - part b	1,743	13.1	18	126.0	17	121.1	486	3.7	55	427.9	54	420.5	#	..
Central Highlands (R)	3,508	12.7	47	145.2	46	148.5	898	3.9	85	471.8	84	467.4	11	12.0
Gladstone (R)	7,086	11.4	135	199.6	94	141.8	2,133	3.8	246	497.1	245	495.4	30	12.1
Livingstone (S)	4,789	12.9	47	125.4	44	115.2	1,468	3.6	195	437.3	190	427.3	23	11.2
Rockhampton (R)	10,367	13.0	87	102.7	81	96.5	3,110	4.0	287	363.3	287	362.3	67	18.8
Bundaberg (R)	12,398	12.9	163	173.5	158	163.5	4,472	3.9	563	415.4	557	410.9	79	12.5
Fraser Coast (R)	13,953	13.1	164	159.2	146	136.4	5,379	4.0	868	518.8	861	513.7	119	15.0
North Burnett (R)	1,342	12.3	24	234.8	24	227.4	387	3.0	81	529.7	79	511.5	12	16.6
Gympie (R)	7,626	14.6	77	149.5	77	145.5	2,424	3.9	199	274.1	198	272.3	34	9.7
Noosa (S)	6,557	11.6	29	56.0	29	51.4	2,085	3.0	77	92.6	77	92.0	21	5.4
Sunshine Coast (R)	38,376	12.2	638	198.8	617	187.8	11,343	3.3	866	215.1	853	211.8	131	7.4

Data not available on Woorabinda. Significantly higher and lower rates compared to Australia.,
Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks*. https://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlas-of-australia-primary-health-networks

4.6.6. Cancer

Cancer is a major cause of illness in Australia and has a substantial social and economic impact on individuals, families and the community.

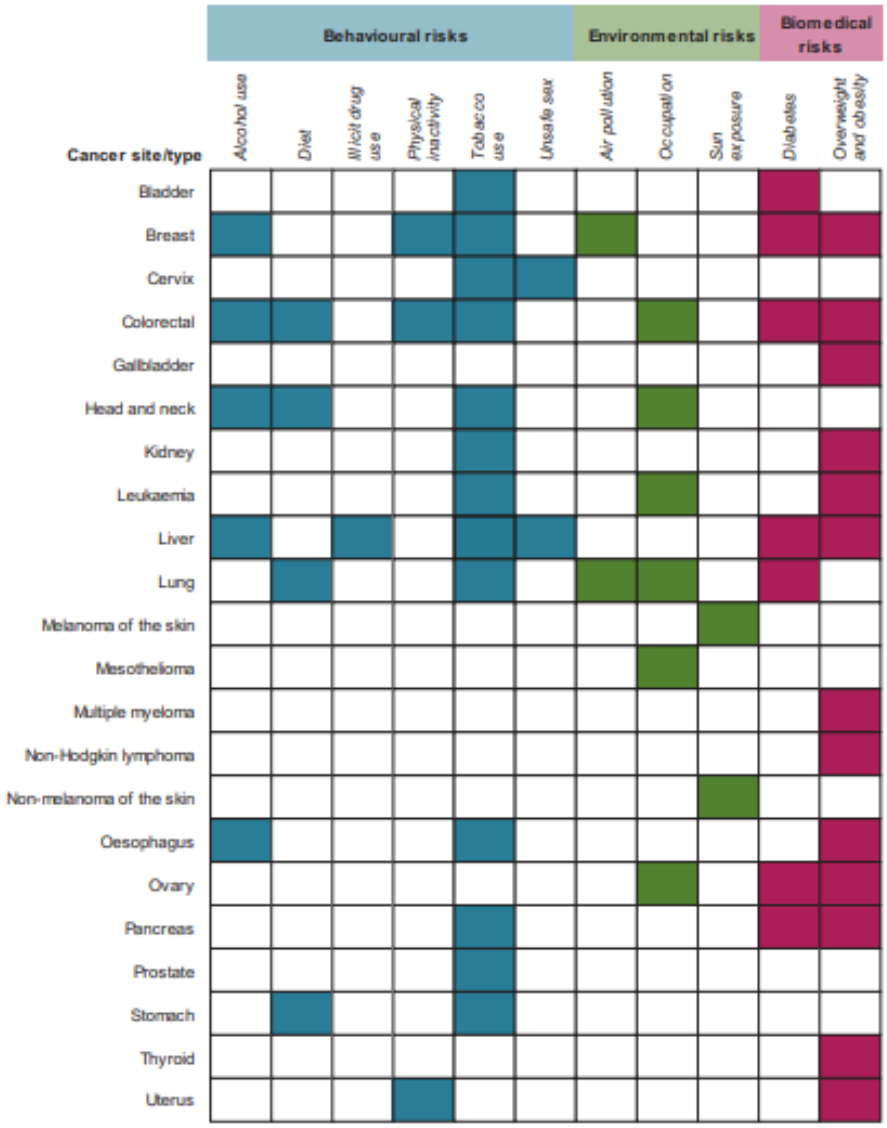
Burden of Disease

Findings from the recent Australian Burden of Disease Study showed that cancer as a disease group was the leading cause of burden in Australia in 2018, accounting for 18% of the total disease burden. Lung cancer (ASR 5.DALYs per 1000 people) and bowel cancer (ASR 3.4 DALYs per 1000 people) were in a list of top 10 disease with highest burden in Australia in 2018 (34). It has been estimated that, in 2021, lung cancer will be the leading cause of cancer related deaths.

Risk factors

Not all cancers are avoidable, however, mostly there are certain risk factors that have evidence to be associated with cancers.

Figure 3: Association of risk factors with various types of cancers



Source: (AIHW) Australian Institute of Health and Welfare (2019) *Cancer in Australia 2019. Cancer series no.119. Cat. no. CAN 123. Canberra: AIHW.*

Prevalence

Recent regional data is not available for cancer prevalence for 2019 however nationally(63):

- There were 144,700 new cases, one new diagnosis every 4 minutes
- One in two people will be diagnosed with cancer by the age of 85
- One in nine hospitalisations in 2016-17 were cancer related
- lung cancer was the most common cancer diagnosed and also associated with high mortality for Aboriginal and Torres Strait Islander people.
- During the period 2010–2014, those living in Inner regional areas of Australia had higher age standardised incidence rates for melanoma of the skin, prostate cancer and kidney cancer than people living in Very remote areas.
- Those living in the most disadvantaged areas of Australia during the period: in 2010–2014 had the highest age-standardised incidence rates of cancers including cervical cancer of unknown primary site, colorectal cancer, uterine cancer and head and neck cancer

The table below (Table 16) summarises cancer incidence, hospitalisation, and deaths data. Bundaberg, Fraser Coast, North Burnett and Rockhampton seem to have higher morbidity and mortality associated with cancer. Central Highlands have significantly higher death associated with breast cancer diagnosis.

Early detection and treatments

Early detection of cancer improves survival rates therefore having an access to screening programs is critical for the reduction in mortality. Table 16 presents a summary of cancer data in the PHN and its LGAs.

Table 16: Summary of cancer data, PHN and LGAs

	Incidence, Colorectal Cancer, 2010-2014		Deaths from colorectal cancer, 0 to 74 years,2014 to 2018		Incidence, Lung cancer,2010-2014		Deaths from lung cancer, 0 to 74 years, 2014 to 2018		Incidence, All cancers, 2010-2014		Hospital admissions for all cancers, persons, 2018-19		Deaths from any cancer, 0-74 years, 2014 to 2018		Deaths from breast cancer (females), 0 to 74 years, 2014 to 2018		Incidence Melanoma, 2010-2014	
	Number	ASR per 100,000	Number	Average annual ASR per 100,000	Number	ASR per 100,000	Number	Average annual ASR per 100,000	Number	ASR per 100,000	Number	ASR per 100,000	Number	Average annual ASR per 100,000	Number	Average annual ASR per 100,000	Number	ASR per 100,000
AUSTRALIA+	74,871	65.8	9,957	8.8	55,246	48.6	22,910	20.3	623,128	548.0	331,429	1,316.5	111,343	98.4	8,690	15.4	61,549	54.1
Queensland	14,933	68.9	2,140	9.4	11,192	51.7	5,093	22.4	129,238	589.8	72,229	1,444.2	23,313	102.4	1,716	15.2	17,247	78.3
the PHN	3,163	68.6	436	9.2	2,501	53.3	1,095	22.5	26,894	588.9	15,601	1,522.6	4,892	102.7	363	15.8	3,465	77.6
Banana (S) - part b	44	69.0	#	..	26	41.2	7	12.1	323	499.6	137	1,038.1	52	84.5	#	..	29	44.5
Central Highlands	58	66.5	#	..	50	60.4	19	19.4	544	566.2	308	1,432.5	91	88.9	13	26.4	72	69.1
Gladstone (R)	176	77.5	18	6.8	126	56.8	60	23.2	1,413	585.7	1,115	2,036.3	270	102.3	26	20.3	175	69.5
Livingstone (S)	108	58.7	15	7.4	108	58.1	56	27.2	1,045	561.6	572	1,323.8	208	102.1	15	15.5	116	62.9
Rockhampton (R)	288	72.8	39	10.8	214	54.0	103	28.7	2,326	592.5	1,263	1,594.6	450	125.1	26	14.6	254	65.1
Bundaberg (R)	441	73.5	61	10.5	402	65.2	170	28.1	3,645	621.1	1,872	1,512.3	692	117.7	49	17.9	448	79.3
Fraser Coast (R)	495	72.3	78	11.0	419	59.1	184	24.5	4,102	613.3	2,604	1,730.7	820	113.4	63	19.0	529	82.9
North Burnett (R)	63	90.9	5	7.5	46	64.4	19	27.2	431	634.0	251	1,789.1	76	112.4	#	..	47	71.9
Gympie (R)	188	63.8	29	8.9	169	55.8	100	29.4	1,693	578.4	1,255	1,859.6	375	113.8	22	14.5	201	70.7
Noosa (S)	182	52.9	29	8.0	149	42.3	53	13.9	1,954	574.0	745	975.1	307	83.2	21	11.9	259	78.8
Sunshine Coast (R)	1,120	67.6	153	9.1	789	46.8	321	18.6	9,409	578.4	5,468	1,438.1	1,539	91.0	123	14.6	1,334	84.0

Data not available on Woorabinda. Significantly higher and lower rates compared to Australia., Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks.*

4.6.7. Injury and Poisoning

Injury is a major contributor to mortality, morbidity and permanent disability in Australia. Most injuries requiring hospitalisation are the result of falls and transport accidents, while most deaths from injuries occur as a result of falls and suicide.

Rates of injury hospitalisations and deaths vary according to the regions and generally increase with remoteness. The number and rate of injury hospitalisations and deaths also vary by sex, age and external cause according to the remoteness of usual residence. In 2017–18, 350,000 hospitalisations and 8,300 deaths occurred for residents of Major cities of Australia. While the numbers of hospitalisations and deaths were higher for residents of Major cities, after adjusting for population size, the rates of hospitalised injury and deaths were much higher for residents of Very remote areas. For both injury hospitalisations and deaths, rates increased as remoteness of usual residence increased.(64) Also,

- 42% on injuries requiring hospitalisations are due to falls
- Most hospitalisations due to injury occur in the 65+ age group of females and 25-44 age group for males
- Males account for 55% of hospitalisations due to injury and 61% of all injury deaths
- Females are more likely to be hospitalised for injuries due to intentional self-harm than males
- Males are more likely to die as a result of suicide
- Geography affects chances of serious injury or death from injury, with highest rates of injury among people in remote areas

Burden of Disease

Injury was amongst the top five disease groups that caused the most burden of disease in 2018. Injury caused 8.4% of the total burden. (34)

Hospitalisations

In 2018-19, significantly higher rates of hospitalisations were notified across the PHN region (32)

- Compared to Qld (3,577 ASR) the rates of injury and poisoning related hospitalisations were highest in Wide Bay HHS (4,391) followed by Central Queensland HHS (3,927ASR) and Sunshine Coast HHS (3,908 ASR). Driving the PHN rates to 4,035 ASR, significantly higher than Qld.
- Compared to Qld (315 ASR) the rates of hospitalisations due to road transport injury were significantly higher across the PHN (383 ASR) that included Wide Bay HHS (370 ASR), Central Queensland HHS (392 ASR) and Sunshine Coast HHS (385 ASR).

  Rate of hospital admissions in 2018-19 associated with injury or poisoning by external causes was significantly higher compared to Australia in all the LGAs within the PHN except for Gympie and Noosa. (See Table 17 Table 18 for data details)

Deaths

Similar data reports the death rates (2016-18) for the PHN region due to these reasons.(32)

- Wide Bay reported significantly higher deaths compared to Qld due to injury and poisoning (56 ASR per 100,000 compared to 41 Qld) as well as road traffic accidents (10 ASR per 100,000 compared to 5 Qld).
- Death rates for Sunshine Coast HHS and Central Queensland HHS did not differ from Qld rates.

- Rates of deaths from all external causes were significantly higher across the PHN (37.9) compared to Australia (30.1) and highest in North Burnett (79.8 average annual ASR per 100,000) (See Table 17 and Table 18 for data details)

Table 17: Hospital admissions, ED presentations and deaths associated with injury or poisoning by external cases, PHN, and LGAs

	Admissions for all diagnosis of injury or poisoning, by external cause, persons - Public hospitals		ED Presentations for injury, poisoning and certain other consequences of external causes, all persons		Deaths from external causes	
-	2018/19		2018/19		2014-2018	
	Number	ASR per 100,000	Number	ASR per 100,001	Number	Average annual ASR per 100,000
AUSTRALIA+	468,169	1,859.7	2,031,275	8,068.80	34,027	30.1
Queensland	110,657	2,212.9	411,092	8,110.70	7,549	33.4
the PHN	21,142	2,318.1	94,357	10,901.5	1,477	37.9
Banana (S) - part b	360	2,784.4	328	2,454.6	22	36.0
Central Highlands (R)	960	3,829.4	602	2,069.1	47	35.3
Gladstone (R)	1,198	2,076.2	10,563	16,581.6	117	39.8
Livingstone (S)	1,132	2,924.4	2,610	6,958.9	70	40.5
Rockhampton (R)	1,771	2,183.2	11,381	13,730.7	158	43.1
Woorabinda (S)	33	3,838.9	25	2,249.1	n/a	n/a
Bundaberg (R)	2,684	2,552.2	13,111	13,790.9	194	44.8
Fraser Coast (R)	2,953	2,475.7	17,386	16,695.0	190	39.7
North Burnett (R)	351	2,997.8	498	4,749.5	39	79.8
Gympie (R)	1,021	1,838.6	8,637	16,862.5	109	46.5
Noosa (S)	822	1,343.7	1,998	3,697.3	92	35.6
Sunshine Coast (R)	7,855	2,290.9	27,217	8,427.3	432	30.7

Some data not available on Woorabinda. Significantly higher and lower rates compared to Australia.,
Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks.*

Table 18: Hospital admissions and deaths by injury type and associated deaths, PHN and LGA

	Hospital Admissions for transport crash injury, persons - Public hospitals		Hospital Admissions for accidental poisoning, persons - Public hospitals		Hospital Admissions for falls, persons - Public hospitals		Hospital Admissions for intentional self-harm, persons - Public hospitals		Deaths from road traffic injuries		Deaths from suicide and self-inflicted injuries	
-	2018/19		2018/19		2018/19		2018/19		2014-2018		2014-2018	
	Number	ASR per 100,000	Number	ASR per 100,000	Number	ASR per 100,000	Number	ASR per 100,000	Number	Average annual ASR per 100,000	Number	Average annual ASR per 100,000
AUSTRALIA+	59,845	237.7	10,323	41.0	206,567	820.5	29,327	116	5,084	4.5	14,030	12.4
Queensland	15,121	299.9	2,828	56.4	47,007	948.2	8,413	166.6	1,065	4.7	3,473	15.4
the PHN	2,956	347.6	495	57.3	9,579	956.4	1,497	184.6	241	6.3	663	17.7
Banana (S) - part b	63	486.4	6	42.8	134	1,029.7	13	104.6	6	9.2	9	15.1
Central Highlands (R)	198	714.1	37	132.1	293	1,381.5	54	191.8	6	4.5	25	18.5
Gladstone (R)	191	308.7	44	71.7	392	749.7	141	225.7	12	4.1	59	20.0
Livingstone (S)	142	382.5	35	93.5	481	1,164.3	68	190.1	10	5.9	34	20.0
Rockhampton (R)	261	322.3	50	61.9	700	861.2	127	155.9	24	6.4	74	20.1
Woorabinda (S)	8	795.0	#	..	9	1,368.8	#	..	0	0.0	#	..
Bundaberg (R)	307	328.8	61	63.6	1,202	985.4	229	264.0	43	10.2	83	19.8
Fraser Coast (R)	350	343.7	53	49.9	1,415	983.3	192	210.5	27	5.9	96	21.0
North Burnett (R)	56	546.0	8	75.8	140	1,025.6	27	282.1	12	25.5	15	31.8
Gympie (R)	165	330.3	25	48.8	426	669.6	52	113.4	27	12.0	40	17.7
Noosa (S)	141	261.9	16	28.6	416	577.6	60	120.9	12	4.9	46	18.5
Sunshine Coast (R)	1,074	336.1	159	49.3	3,971	1,053.4	533	173.7	61	4.4	182	13.2

Data not available on Woorabinda. Significantly higher and lower rates compared to Australia., Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks.*

4.6.8. Chronic Musculoskeletal Conditions

Arthritis and other musculoskeletal conditions are highly prevalent, affecting almost 1 in 3 Australians. and are large contributors to illness, pain and disability. Compared with the general population, people with musculoskeletal conditions have higher rates of poor health, very high psychological distress and very severe pain. In 2015–16, an estimated 11% ($12.5 billion) of recurrent disease expenditure in the Australian health system was attributed to the Musculoskeletal conditions group (65). Common musculoskeletal conditions are back pain and problems, osteoarthritis, Rheumatoid arthritis, Osteoporosis and gout. These group of conditions is associated with high expenditure and in 2015-16 it was highest and the second highest for males and females respectively. (65).

Burden of Disease

Based on data from the Australian Burden of Disease Study 2015, musculoskeletal conditions were responsible for 13% (approximately 611,300 disability-adjusted life years (DALY)) of the total burden of disease. Of this proportion, osteoarthritis contributed 19% of disease burden, rheumatoid arthritis contributed 15%, and gout contributed 0.9%. The remaining burden was attributed to 'other musculoskeletal conditions' (33%) and 'back pain and problems' (32%). (7)

1. Arthritis

Arthritis is an umbrella term for a range of inflammatory conditions and includes osteoarthritis, rheumatoid arthritis, juvenile arthritis and gout. Arthritis is a common condition particularly among older Australians, and is a large contributor to illness, pain and disability.

Prevalence

In 2017-18 ,(66)

- 1 in 7 Australians have some form of arthritis
- almost 1 in 3 (29%) Australians had a musculoskeletal condition
- arthritis affected 15% of Australians
- in 2018-19 arthritis affected 11% of Indigenous Australians

Within the PHN the rates of estimated number of people with arthritis and osteoporosis were similar to Australia. (see Table 19 for details) (31)

Co-morbidities ,(66)

- 3 in 4 Australians over 45 with arthritis have self-reported at least one other chronic condition. Back problems was the most common comorbidity (36%), followed by mental and behavioural conditions (30%) and asthma (18%).
- 1 in 5 Australians with arthritis experienced high or very high levels of psychological distress
- 1 in 2 Australians with arthritis experienced moderate to severe pain.
- people with arthritis were twice as likely to describe their health as poor (11%) compared with those without arthritis (4.0%)

2. Chronic pain

Chronic pain is a common and complex condition, and the pain experienced can be anything from mild to severe. The defining characteristic of chronic pain is that it is ongoing and experienced on most days of the week. Chronic pain can result from injury, surgery, musculoskeletal conditions such as arthritis, or other medical conditions such as cancer, endometriosis or migraines. In some cases, there may be no apparent physical cause. Several behavioural factors such as sedentary behaviour, smoking and being overweight or obese are linked to chronic pain.

Prevalence

In 2016,

- almost 1 in 5 (19%, or 1.6 million) Australians aged 45 and over reported having chronic pain
- Chronic pain increased with increasing age, to almost 1 in 4 adults (24%) aged 85 and over
- Chronic pain was 1.8 times as high for women aged 85 and over (28%) as women aged 45–54 (16%)
- Among men, chronic pain was 1.3 times as high in those aged 85 and over (18%) as in those aged 45–54 (13%).

Co-morbidities

People without chronic pain were 9 times as likely as those with chronic pain to say that their activities were not limited. Compared with people without chronic pain, those with chronic pain were

- 2.6 times as likely to have arthritis,
- 2.5 times as likely to have mental health problems,
- 2.5 times as likely to have osteoporosis and
- 2.4 times as likely to have other long-term health conditions, or a long-term injury

Opioids are recommended in the treatment of chronic pain where other pharmacological and non-pharmacological treatment strategies have not been effective. (67)

However, there is increasing evidence of harm and negative side effects, and a lack of evidence of the effectiveness of long-term opioid use for managing chronic pain(68) . Opioids may not offer any additional pain relief to non-opioid medications such as paracetamol or NSAIDs, and the risk of harm is higher (69). Opioid misuse is of national and international concern. All opioids carry a risk of dependence, accidental overdose, hospitalisation and death.

Table 19: Prevalence of specific musculoskeletal conditions in the PHN,LGAs, 2017-18

	Estimated number of people with arthritis (modelled estimates)		Estimated number of people with osteoporosis (modelled estimates)	
	Number	ASR per 100	Number	ASR per 100
AUSTRALIA+	3,625,200	15.0	924,000	3.8
Queensland	668,371	13.9	184,248	3.8
the PHN	147,190	14.7	41,708	4.0
Banana (S) - part b	1,737	13.4	296	2.3
Central Highlands (R)	2,933	14.0	414	2.2
Gladstone (R)	7,834	14.4	1,754	3.5
Livingstone (S)	6,578	15.4	1,702	4.0
Rockhampton (R)	11,922	15.4	3,243	4.1
Bundaberg (R)	19,226	15.6	5,266	4.0
Fraser Coast (R)	24,520	16.6	6,681	4.3
North Burnett (R)	2,168	15.4	427	2.9
Gympie (R)	10,062	14.9	2,975	4.3
Noosa (S)	9,382	12.3	3,205	4.1
Sunshine Coast (R)	50,723	13.9	15,728	4.2

Data not available on Woorabinda.
Source: PHIDU (2021) *Social Health Atlas of Australia Primary Health Networks*. https://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlas-of-australia-primary-health-networks

Hospitalisation

Nationally, osteoarthritis was the most common musculoskeletal reason for hospitalisation in 2017–18 (accounting for 34% of all musculoskeletal hospitalisations), followed by back pain and problems (23%). (66)

Treatments

These conditions are predominantly managed in primary health care settings by a range of health professionals. Treatment involves a combination of medication (for pain and inflammation); physiotherapy; self-management (such as diet and exercise); education on self-management and living with the condition; and referral to specialist care.

The PHN survey data

The ***PHN community health and stakeholders' surveys*** explored commonly occurring chronic disease management services and areas in which health service provision has gaps or needs improvement. The community survey identified that there is a need to improve access to the following services (17):

- mental health services (highest importance)
- diabetes management
- allied health care
- bulkbilling GPs
- better aged care facilities
- fully funded palliative care service
- more funding for health promotion, health education and preventive health i.e affordable healthy foods and sports facilities.

Another commonly mentioned "needs improvement" areas were transport support for accessing health services, interventions to reduce alcohol use and binge drinking, continuity of care between GPs and specialists and access to afterhours clinics.

Stakeholders listed the following main health service areas as having gaps or needs relating to service provision (for all of PHN, n = 228) (18):

- Mental Health and Suicide Prevention (n170, 75%)
- Alcohol and/or other drugs (n127 (56%)
- Allied Health (n119, 52%)
- After hours (n116, 51%)
- Older Persons health (n95, 42%)

Nearly half of the stakeholders' survey participants indicated that chronic disease management and palliative care services are not meeting the increasing demand in the area. Especially, higher percentage of respondents in Central Queensland (60%) and Wide Bay (48%) regions indicated that chronic disease management services were inadequate compared to the service in Sunshine Coast (35%). The same regional pattern was observed in regard to the provision of the palliative care services(18).

In Summary:

Diabetes:

High prevalence in North Burnett, Central Highlands and Bundaberg

Higher rate of diabetes related hospitalisations in Fraser Coast, Gympie, North Burnett and Rockhampton

Higher rate of chronic diabetes complications related hospitalisations was reported in Banana, Fraser Coast , Gympie , North Burnett , and Rockhampton

Higher rates of diabetes related pre-mature mortality in Fraser Coast

Stroke:

High incidence in Gympie, Sunshine Coast and Fraser Coast

Hospital admissions for Fraser Coast , Gympie , Rockhampton , and sunshine Coast

Pre-mature deaths associated with cerebrovascular disease (0-74 years) higher in Gladstone, Rockhampton and North Burnett

Chronic Kidney Disease:

Hospital admissions in public hospitals in Central Highlands,, Fraser Coast , Livingstone , and Rockhampton

CKD death rates (as the underlying or associated cause of death) increased with remoteness, socioeconomic disadvantage and from Aboriginal or Torres Strait Islander community.

Cardiovascular disease:

Hospitalisations due to coronary heart disease higher rates were seen across Wide Bay HHS, Central Queensland HHS and Sunshine Coast HHS

ASR for deaths due to cardiovascular disease higher across Central Queensland HHS and Wide Bay HHS while lower across Sunshine Coast HHS

Deaths associated with Ischemic Heart Disease (0-74 years higher in Fraser Coast, Gladstone and Rockhampton .

Asthma:

Rate of asthma higher in Bundaberg, Fraser Coast , Gympie , Rockhampton and Sunshine Coast

Higher rates of asthma related admissions in Bundaberg, Gladstone , North Burnett , and Sunshine Coast

COPD:

Rate of COPD higher in Bundaberg, Fraser Coast , Gympie , Rockhampton and Sunshine Coast

Hospitalisations higher in Central Queensland and Wide Bay HHS

Avoidable deaths higher in Bundaberg, Fraser Coast and Rockhampton

Cancer:

Bundaberg, Fraser Coast, North Burnett and Rockhampton have higher morbidity and mortality associated with cancer.

Central Highlands have significantly higher death associated with breast cancer diagnosis.

Injury and poisoning:

Rates of hospitalisations due to road transport injury higher across the PHN that included Wide Bay HHS, Central Queensland HHS and Sunshine Coast HHS.

Wide Bay reported significantly higher deaths compared to Qld due to injury and poisoning as well as road traffic accidents

5. Maternal and Child Health

Childhood (0 to 14 years) is an important time for healthy development and learning, and for establishing the foundation blocks of future wellbeing. While a positive start in life helps children to reach their full potential, a poor start increases the chances of adverse outcomes for the individual, society and possibly future generations(70).

A data model used by the Australian Institute of Health and Welfare summarised across 7 domains—health, education, social support, household income and finance, parental employment, housing, and justice and safety(71). The information below summarises available data on these domains in an attempt to develop a picture of the health and service needs for this age group within the PHN.

5.1. Child population within the PHN

There are around 163,880 children (18.7% of total PHN 0-14 yrs population, Qld=19.4%) living in the PHN region (2019) (10). This proportion is highest in CQ 21.8% followed by SC17.9% and WB 17.0%. See Table 20 below.

- Highest proportion is noted in Woorabinda (33.2%), Central Highlands (25.3%) and Gladstone (23.0%) LGA (10).
- Lowest proportion is noted in Noosa (15.8%), Fraser Coast (16.7%) and North Burnett (17.1%) LGAs (10).
- Thirty-Two SA2 areas within the PHN have higher % of young children compared to Qld (>20%). Highest percentage of children is seen in : Emerald (26.8%), Gracemere (26.4%), Peregian Springs (26.4%) (8).

Table 20: Number and percentage of children aged 0-14 years, by PHN areas and LGAs

Geography	Population aged 0-14 years, 2019	
	N	%
Central Queensland Area	**49,484**	**21.8**
Banana (S)	3,153	22.3
Central Highlands (R) (Qld)	7,271	25.3
Gladstone (R)	14,567	23.0
Livingstone (S)	7,126	18.7
Rockhampton (R)	17,030	20.9
Woorabinda (S)	337	33.2
Wide Bay Area	**36,384**	**17.0**
Bundaberg (R)	16,795	17.5
Fraser Coast (R)	17,772	16.7
North Burnett (R)	1,817	17.1
Sunshine Coast Area	**78,012**	**17.9**
Gympie (R)	9,512	18.1
Noosa (S)	8,813	15.8
Sunshine Coast (R)	59,687	18.2
PHN	**163,880**	**18.7**
Queensland	**989,819**	**19.4**

Source: QGSO, 2020 Regional profiles from: ABS, Census of Population and Housing

5.2. Health Status

Maternal and child health is an important public health issue as it provides an opportunity to end preventable deaths among women, children and adolescents and to greatly improve their health and well-being(70). Life course model clearly indicates how an investment in prevention, health care and education in childhood can impact positively over lifetime(72).

Reported maternal and child health indicators include:

- birthweight
- the smoking status during pregnancy
- antenatal care visits.
- child immunisation

These and other indicators are included below.

5.2.1. Infant and child mortality

Infant mortality rate remains an important indicator of health for whole populations. Similarly, low birthweight is closely associated with foetal and neonatal mortality and morbidity, inhibited growth and cognitive development, and chronic conditions later in life.

National data (70) indicated the following:

- The infant death rate decreased from a peak of 5.7 deaths per 1,000 babies in 1999 to 3.3 in 2017.
- The child death rate for children aged 1–14 halved between 1998 and 2017 (20 to 10 deaths per 100,000 children); however, since 2011, the death rate has stayed in the range of 10 to 12 deaths per 100,000.
- In 2015–17, the leading causes of child (aged 1–14) deaths were injuries, cancer and diseases of the nervous system.
- In 2017, infant death rates were higher for different population categories:
    - 5.9 per 1,000 in Remote and very remote compared with 2.9 in Major cities
    - 4.2 per 1,000 in lowest socioeconomic areas compared with 2.3 in highest SES areas.

In 2015–2017, child death rates were higher for different population categories:

- 25 per 100,000 in Remote and very remote areas compared with 9.4 in Major cities
- 16 per 100,000 in the lowest socioeconomic areas compared with 6.9 in the highest areas. within the PHN (73): (See Table 21).
- Infant mortality rate (0 to <1 years), in 2014-16 indicated the following:
- the PHN rate (3.6 deaths per 1,000 live births) was closer to the national rate (3.3).
- the PHN rate has been consistently improving since 2010-12, falling from 5 deaths per 1,000 live births down to 3.6 in 2014-16.
- the highest rate within the PHN was seen in WB; both Hervey Bay and Maryborough SA3s had the same high rates; 6.1 deaths per 1,000 live births. This is almost double the national rate and the eighth highest rate of 80 SA3s reported in Queensland.
- in Maryborough SA3 the rate has risen consistently (more than doubled) since 2010-12 period.
- in Sunshine Coast Hinterland SA3 the rate has remained high for the last three reporting periods (5.7 – 5.9 deaths per 1,000 live births).

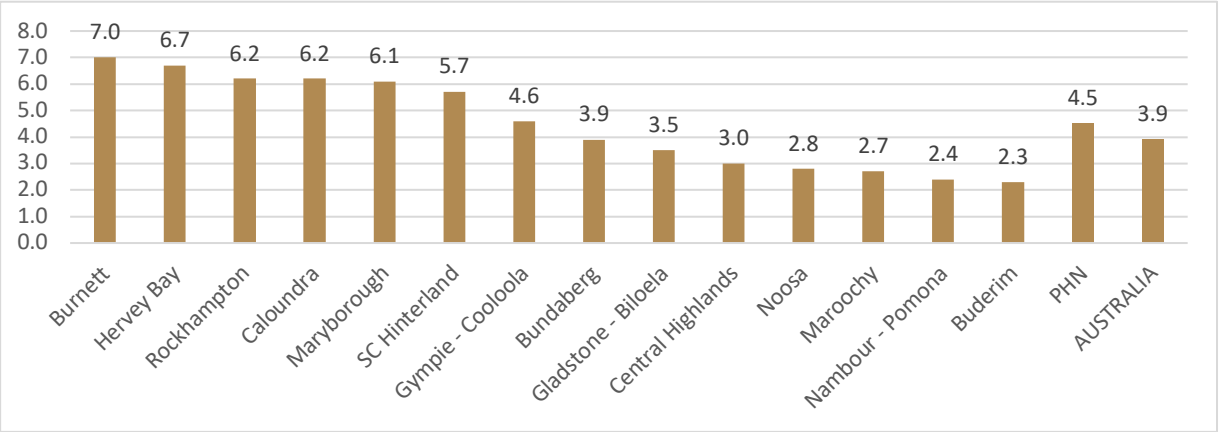
- highest rate in CQ region was seen in Rockhampton (5 deaths per 1,000 live births), though this rate has been falling consistently from 7.3 in 2010-12
- Child mortality (0 to <5 years) in 2014-16: See
- The PHN child mortality (4.5 deaths in infants and children aged 0 to <5 years per 1,000 live births) remains slightly higher than the national rate (3.9).
- The highest rates in the PHN are again seen in WB area: Burnett (7.0) and Hervey Bay (6.7) SA3s. High child mortality rates are also seen in Rockhampton, Caloundra, Sunshine Coast Hinterland and Maryborough SA3s (5.7 – 6.1 deaths per 1,000 live births).
- Noosa's previously high rate has halved, from 6.5 in 2013-15 to 2.8 in 2014-16.

Table 21: Maternal and Child Health Indicators, PHN and SA3 regions

Location/SA3	**Infant mortality: Number of deaths per 1,000 live births (0 to <1 year), 2014-16**	**Percentage of live births that were of low birthweight, 2014-16**	**Percentage of women who gave birth and smoked during pregnancy, 2014-16**	**Percentage of women who gave birth and had at least one antenatal visit in the first trimester, 2014-16**
Central Queensland				
Central Highlands (Qld)	2.4	4.0	14.1	57.5
Gladstone - Biloela	2.7	4.0	13.6	67.3
Rockhampton	5.0	5.2	18.7	58.9
Wide Bay				
Bundaberg	3.2	5.4	20.1	64.0
Burnett	4.7	6.3	28.8	50.3
Gympie - Cooloola	3.9	5.4	23.0	76.7
Hervey Bay	6.1	5.4	19.9	45.9
Maryborough	6.1	6.5	23.9	48.5
Sunshine Coast				
Buderim	1.7	3.5	6.4	79.4
Caloundra	3.7	4.1	10.2	78.3
Maroochy	2.7	4.1	11.0	80.8
Nambour - Pomona	1.0	4.9	15.1	78.0
Noosa	1.9	3.9	7.4	76.8
Sunshine Coast Hinterland	5.7	4.6	11.9	73.0
The PHN	**3.6**	**4.8**	**10.4**	**65.0**
Australia	**3.3**	**5.0**	**15.6**	**67.2**

Source: AIHW, 2019 Child and maternal health indicators 2010-12 to 2014-16 by PHN & SA3s, from https://www.aihw.gov.au/reports/mothers-babies/child-maternal-health-2014-2016/contents/summary/

Graph 9: Number of deaths per 1,000 live births (0 to <5 years), by PHN, SA3s, 2014-16



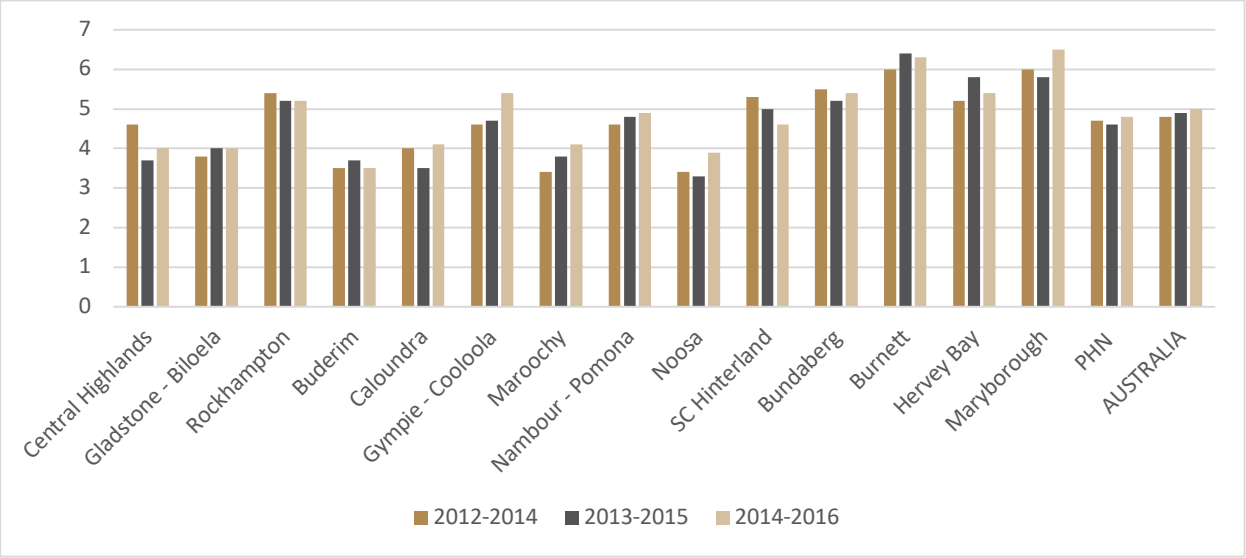
Source: AIHW, 2019 Child and maternal health indicators, 2014-16 by PHN & SA3s, from https://www.aihw.gov.au/reports/mothers-babies/child-maternal-health-2014-2016/contents/summary/

5.2.2. Birth Weight

Low birthweight (LBW) is a key indicator of a baby's immediate health and a determinant of their future health. Low birthweight babies—whose weight at birth is less than 2,500 grams—are more likely to die in infancy or to be at increased risk of illness in infancy (70).

- Nationally in 2017(70), around 20,300 (6.7%) live-born babies were of low birthweight and low birthweight was higher among mothers who smoked during pregnancy (12.9%) than mothers who did not (6%).
- Within QLD, in 2018, there were 4,360 low birthweight babies born (7.2%) (32), which is slightly higher compared to the PHN (n=607, 6.8%) *(73)*. The PHN performed better compared to other PHNs within QLD.
- Within the PHN(73) ,
    - highest proportions of LBW babies were seen in CQ HHS (7.9%) followed by WB HHS (6.8%) and SC HHS (6.0%) areas
    - largest increase in low birthweight babies was seen in (from 2013-15 to 2014-16) Maryborough (5.8 to 6.5%) and Gympie-Cooloola (4.7 to 5.4%) SA3s(74). Graph **10** on next page.

Graph 10: Percentage of live births that were of low birthweight, by PHN-SA3s, from 2012-14 to 2014-16



Source: AIHW, 2019 Child and maternal health indicators, 2014-16 by PHN & SA3s, from https://www.aihw.gov.au/reports/mothers-babies/child-maternal-health-2014-2016/contents/summary/

5.2.3. Smoking during pregnancy

Tobacco smoking increases the risk of pregnancy complications, including miscarriage, placental abruption and premature labour. It is also a leading contributor to adverse perinatal outcomes such as low birthweight, intra-uterine growth restriction, pre-term birth and perinatal death(70).

Nationally (70),

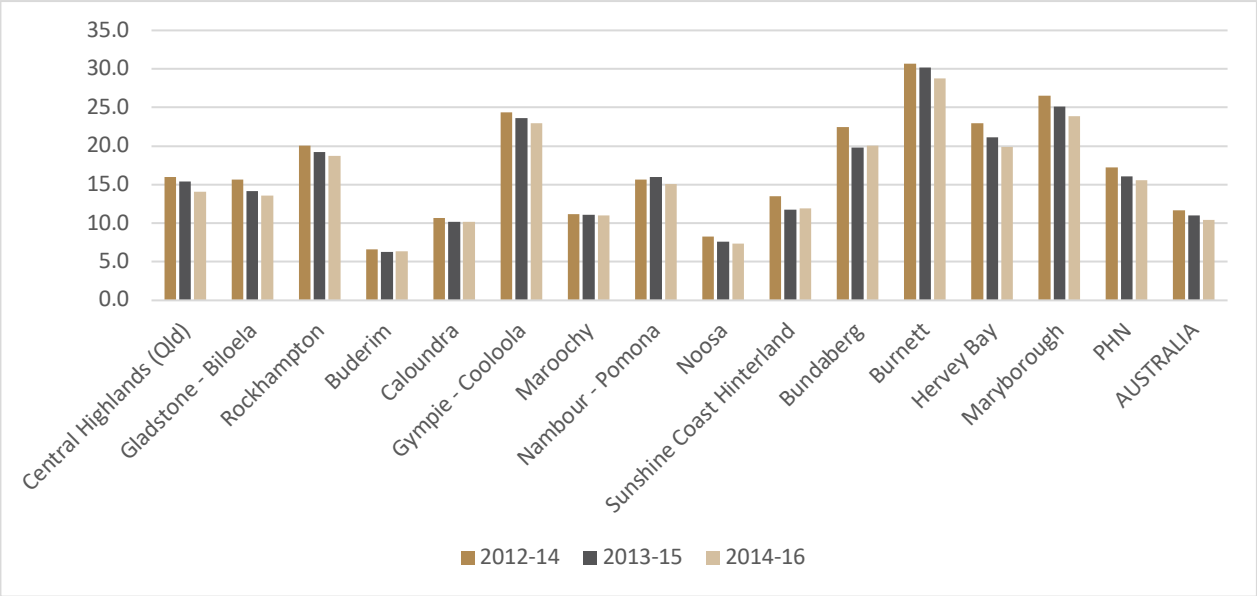
- In 2017 about 1 in 10 (9.5% or about 28,600) women who gave birth reported smoking during the first 20 weeks of their pregnancy.
- The rate of smoking during the first 20 weeks decreased with increasing maternal age up to 35–39 years.
- In 2016, of women who reported they were unaware of being pregnant for a part of their pregnancy, 1 in 2 (49%) drank alcohol before they knew they were pregnant and 1 in 4 (25%) drank after they knew.
- Between 2011 and 2017, the proportion of women who smoked during the first 20 weeks of pregnancy fell from 13% to 9.5%.

Within the PHN, smoking rates data indicated the following (73): (See Graph 11 below)

- Smoking rates during pregnancy have largely been falling throughout the PHN over the last three years periods (2012-14 to 2014-16). Nevertheless, it remains to be a major problem within the PHN catchment.
- During 2014-16, 15.6% of women who gave birth in the PHN smoked while pregnant. While this rate had decreased (from 17.2% in 2012-14) it still remained significantly higher than the national rate (10.4%).
- Across the PHN catchment, smoking rates during pregnancy were highest in WB (19.9 – 28.8%).
- Burnett SA3 (28.8%) had the highest rate in the PHN over the last three years periods (2012-14 to 2014-16). The lowest rates were largely seen in the Sunshine Coast area (6.4 – 15.1%), except for Gympie-Cooloola SA3 (23.0%).

- CHO report, 2020 support these findings: smoking during pregnancy across QLD (in 2018) was 11.2%, with the PHN being 13.6% and the HHSs reporting WB 19.8%, CQ 15.7% and SC 9.7% (32)

Graph 11: Percentage of women who gave birth and smoked during pregnancy, by PHN-SA3 areas, from 2012-14 to 2014-16



Source: AIHW, 2019 Child and maternal health indicators, from 2012-14 to 2014-16 by PHN & SA3s, from https://www.aihw.gov.au/reports/mothers-babies/child-maternal-health-2014-2016/contents/summary/

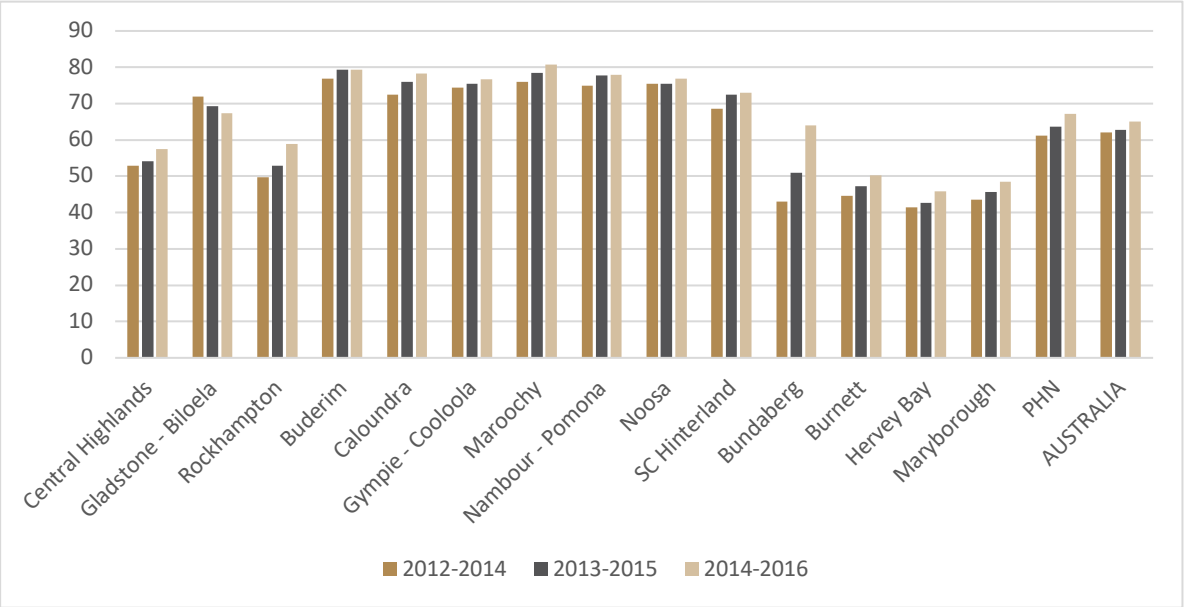
5.2.4. Access to antenatal care

Antenatal visits are well established as a means of improving perinatal outcomes.

Percentage of women who gave birth and had at least one antenatal visit in the first trimester was (73)

- similar within the PHN (67.2%) when compared with national (65.0%).
- slowly increasing within the PHN from 61% in 2012-14 to 67% in 2014-16
- highest in Maroochy SA3 (80.8%) followed by other SA3 area within Sunshine Coast HHS
- lowest in Wide Bay HHS area: Hervey Bay SA3 (45.9%), Maryborough SA3 (48.5%) and Burnett SA3 (50.3%).(See Graph 13 below)

Graph 12: Percentage of women who gave birth and had at least one antenatal visit in the first trimester, by PHN-SA3 areas, (reported in 3-year aggregates - 2012–2014, 2013–2015 and 2014–2016)



Source: AIHW, 2019 Child and maternal health indicators, from 2012-14 to 2014-16 by PHN & SA3s, from https://www.aihw.gov.au/reports/mothers-babies/child-maternal-health-2014-2016/contents/summary/

The latest data (2018 data) showed an increase in the uptake of the antenatal visits in the PHN region. Proportion of pregnant women who had eight or more antenatal care visits in 2018 within QLD (79.1%) was similar to the PHN (81.5%). The proportion varied between the three HHS areas (WB 80.4%, CQ 76.7% and SC 83.4%) of the PHN region (54).

5.2.5. Breast Feeding

Breastfeeding promotes the healthy growth and development of infants and young children.

Nationally, in 2017–18 (70)

- around 6 in 10 (61%) children aged 4–47 months had been exclusively breastfed to at least 4 months of age.
- Percentage of breastfeeding was lower (46%) in one parent families compared to 2-parent families (64%)
- about 7 in 10 (70%) of infants living in the highest socioeconomic areas were exclusively breastfed to at least 4 months of age, compared with around 5 in 10 (53%) infants in the lowest areas. See Table 22 below.

In 2018, 94% of newborns had been breastfed at some stage between birth and discharge from hospital. Women at highest risk of not meeting breastfeeding recommendations are those who are daily smokers, aged less than 25 years, Aboriginal and Torres Strait Islander, culturally and linguistically diverse, those with the lowest education levels, experienced significant disadvantage or who had a preterm birth, caesarean or other birth complication (50).

Table 22: Proportion of infants exclusively breastfed to 4 months and over, by priority population group, 2017–18

Population group	Population	Percentages	95% CI
	Australia	61	57.6–64.3
Birthplace	Australia	59	53.6–63.7
	Overseas	66	58.6–72.9
Family type	2-parent family	64	60.6–67.4
	1-parent family	#46	34.6–58.1
	Multiple family households	#57	41.8–72.4
Remoteness	Major cities	62	57.8–66.3
	Regional & remote (a)	59	50.3–67.3
Socioeconomic area	Lowest socioeconomic areas	53	44.1–62.6
	Highest socioeconomic areas	70	62.3–78.2

Source: (50) Microdata: National Health Survey, 2017–18. cited in Australia's children: Breastfeeding and nutrition.

5.2.6. Maternal Obesity

Offspring of overweight and obese women are at increased risk to be born large-for-gestational age and become overweight or obese as children or adults (75). In 2018, across Queensland there were 12,555 pregnant mothers who were obese (21.3%) compared to 20.8% in the PHN, 26.3% in WBHHS, 25% in CQ HHS and 15.1% in SC HHS (54).

5.2.7. Gestational Diabetes

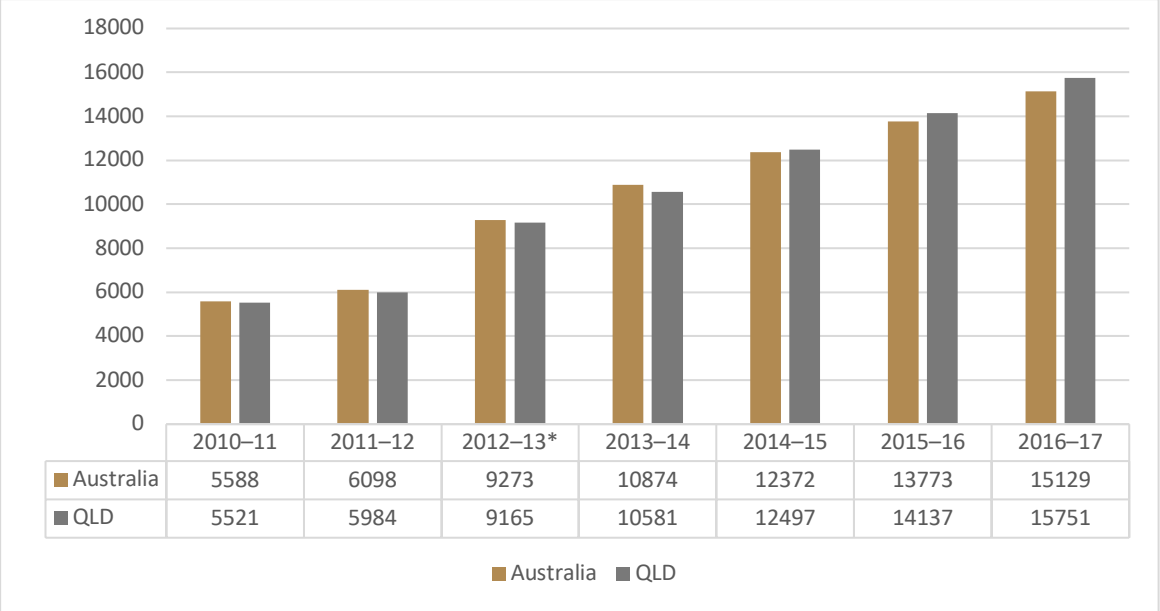
Gestational diabetes has implications for the immediate and longer-term health of both the mother and baby. Even if it usually resolves after the baby is born, it increases the risk of type 2 diabetes for the mother and baby in the future.

Nationally (76):

- In 2016–17, gestational diabetes affected 15% of all women aged 15–49 who gave birth in hospital—over 40,800 women
- Women aged 45–49 were four times as likely to be diagnosed with gestational diabetes as women aged 15–19
- After adjusting for differences in the age structure of the populations, the incidence rate among Aboriginal and Torres Strait Islander women was 1.3 times the rate for non-Indigenous women.
- Between 2000–01 and 2016–17, the rate of women being diagnosed with gestational diabetes in Australia, tripled from 5% to 15% with steep increases recorded from 2012–13.

Incidence of gestational diabetes has been increased overtime both in Australia and Queensland(76). (See Graph 14). The PHN and LGA/SA3 level data were not available for gestational diabetes.

Graph 13: Incidence rate of gestational diabetes, QLD and Australia, 2010 to 2016–17: Queensland (ASR per 100,000 Australian female resident population aged 15–49.)



	2010–11	2011–12	2012–13*	2013–14	2014–15	2015–16	2016–17
Australia	5588	6098	9273	10874	12372	13773	15129
QLD	5521	5984	9165	10581	12497	14137	15751

Source:AIHW, 2019. Supplementary data tables for Gestational diabetes in Australia web report and fact sheet
Note: protocols for gestational diabetes changed in 2014 which might have impacted this rate, however, steady increase is noticed overtime.

5.2.8. Children's perspective on wellbeing

Children across Australia aged 6 to 18 years (n= 47,000) completed surveys and in 2020 it was reported that(70).

- 71% said they talk to their parents if they have a problem and 50% said they talk to their friends.
- in 4 (25%) children reported they did not talk to anyone if they have a problem.
- some children reported they did not feel safe at home (9%), at school (14%) or in their neighbourhood (24%) a lot of the time.
- out of 4 (28%) reported that their device (phone, tablet, computer or video console) was stopping them from getting the right amount of sleep at least some of the time.
-

5.2.9. Social and emotional wellbeing

Good mental health and wellbeing is important to enable children to thrive across the early years and into adolescence and young adulthood. Socially and emotionally competent children become confident, build good relationships, perform better at school and persevere(70).

Nationally, in 2013–14(70),

- 1 in 10 children scored in the 'of concern' range of the Strengths and Difficulties Questionnaire (SDQ) total difficulties score.
- The proportion of children who scored in the range 'of concern' increased with age, from 7.3% for those aged 4–6 to 11.7% for those aged 7–9 and 12% for those aged 10–12.
- Children living in original two parent or two carer families were less likely to score 'of concern' (8.6%) compared with blended (18%) and 1-parent families (18%). Overseas-born children were also less likely to score 'of concern' (6.2%) compared to Australian-born children (11%).

- Living in the lowest socioeconomic areas was strongly associated with a score 'of concern' and double the rate of that for children living in the highest socioeconomic areas (16% and 7.2%, respectively)
- Social and emotional wellbeing emphasises the importance of holistic approach in addressing child health and promotes positive behaviours and emotions and abilities to adapt and cope with daily challenges while maintaining a fulfilling life(70).

5.2.10. Children and crime

Children can be exposed to crime as victims or witnesses within their home or the broader community. Any type of exposure to crime at a young age can have potentially detrimental impacts on a child's health, safety and development (77). Children exposed to crime at a young age have increased likelihood of depression or other mental illness, suicidal ideation, homelessness and future offending(70).

National data (70) informed the following:

- In 2018, there were around 7,900 sexual assaults against children aged 0–14. The rate of sexual assault was 3.5 times higher for girls than boys (266 sexual assaults per 100,000 girls, compared with 72 sexual assaults per 100,000 boys).
- In 2016–17, there were 612 hospitalised assault cases —a rate of 13.3 cases per 100,000 children aged 0–14. This rate increased with remoteness (8.5 times higher), low socioeconomic background (almost 5 times higher) and Indigenous status (6 times higher).
- In 2012–14, there were 35 deaths due to homicide among children aged 0–14, a rate of 0.4 per 100,000 children—this increased to 2.3 per 100,00 for infants under the age of 1.
- In 2017–18, more than two-thirds (around 68% or 9,400) of the 13,800 criminal offences committed by children aged 10–14 were committed by boys.
- The 2016 Personal Safety Survey (PSS) estimates that about 1 in 6 women (16% or 1.5 million) and 1 in 9 men (11% or 992,000) experienced physical and/or sexual abuse before the age of 15.
- Where the perpetrator was specified, a parent or another family member was the perpetrator in more than half (58%) of assault-related hospitalisations involving children aged 0–14 in 2016–17.

5.2.11. Immunisation

Immunisation through vaccination is one of the most effective preventive health measures developed for protecting against the spread of infectious diseases. Immunisation rates above the 90% threshold are considered critical for providing whole of population protection from infectious disease via herd immunity. Australia's aspirational childhood immunisation coverage target has been set at 95% to achieve herd immunity to prevent transmission of all vaccine preventable diseases (78).

The % of children (0 to 5 years) fully vaccinated (1 July 2020 - 30 June 2021) was (79):

- At 12-<15 months, 93.3% within the PHN compared to Australia (94.7%)
- At 24-<27 months, 91.1% within the PHN compared to Australia (92.9%)
- At 60-<63 months, 93.5% for the PHN compared to Australia (94.6%)

- The percentage of children fully vaccinated was higher or similar to Australia in Central Queensland and Wide Bay SA3s (1 July 2020 - 30 June 2021 data). However, in Sunshine Coast, immunisation coverage was lower than Australia in all SA3s at all three age groups. See

  Table **23** below.

  - Noosa had the lowest coverage rate at 12-<15 (87.9%) months and 24-<27 months (84.7%)

- At 60-<63 months, % of children fully vaccinated was lowest in Nambour - Pomona (88.2%) followed by Sunshine Coast Hinterland (88.3%) and Noosa (88.8%)
- Immunisation coverage at 24-27 months was the lowest within the PHN (91.1%) and Australia (92.9%) compared to other two age groups

Table 23: Percentage of % of children fully vaccinated at a specific age groups, PHN, SA3s, (1 July 2020 - 30 June 2021)

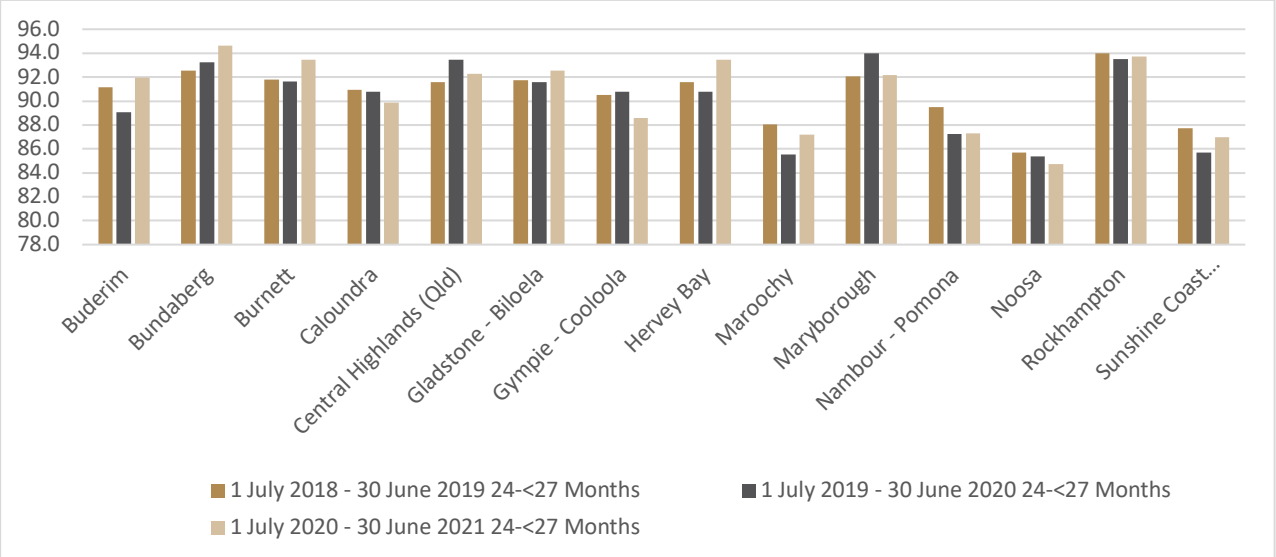
Location/SA3	12-<15 Months	24-<27 Months	60-<63 Months
Central Queensland	**95.5**	**93.2**	**95.8**
Central Highlands (Qld)	93.6	92.3	95.7
Gladstone - Biloela	94.1	92.6	94.5
Rockhampton	96.4	93.7	96.3
Wide Bay	**95.0**	**93.7**	**95.6**
Bundaberg	96.8	94.6	96.9
Burnett	94.0	93.5	93.1
Hervey Bay	94.7	93.4	96.0
Maryborough	93.9	92.2	95.2
Sunshine Coast	**91.2**	**88.3**	**91.0**
Buderim	93.3	91.9	92.4
Caloundra	94.1	89.9	94.3
Gympie - Cooloola	91.9	88.6	92.6
Maroochy	89.9	87.2	90.6
Nambour - Pomona	89.0	87.3	88.2
Noosa	87.9	84.7	88.8
Sunshine Coast Hinterland	90.0	87.0	88.3
The PHN	**93.3**	**91.1**	**93.5**
Australia	**94.7**	**92.9**	**94.6**

Source: DOH (2021) Immunisation coverage, from https://www.health.gov.au/resources/publications/qld-childhood-immunisation-coverage-data-by-sa3
*Immunisation coverage lower than 90% is in Red

The percentage of fully vaccinated children at 24-27 months in the PHN- was not consistently increased in the last three years (See Graph 15).

Decrease in the uptake was seen in Caloundra, Central Highlands, Gympie-Coolola, Maryborough and Noosa (79). Overall, vaccination coverage among two years old children in the PHN has been lowest in Noosa, Maroochy, Nambour-Pomona and Sunshine Coast Hinterland over the period of last three years from 2018 to 2021.

Graph 14: Percentage of fully vaccinated children at 24-27months within PHN SA3 areas, from FY2018-19 to 2020-21



Source: DOH (2021) Immunisation coverage, from https://www.health.gov.au/resources/publications/qld-childhood-immunisation-coverage-data-by-sa3

Human Papillomavirus (HPV) (80): Immunisation against the human papillomavirus (HPV) can prevent cervical and other cancers, and other HPV-related diseases.

- Nationally, 80.1% of girls aged 15 were fully immunised against HPV in 2015-16, an increase from 78.6% in 2014–15.
- HPV immunisation rates for girls varied across PHN areas with the PHN ranking 6th lowest (76.6%) amongst 31 PHNs (ranging from 85.6% of girls fully immunised in Central and Eastern Sydney (NSW) to 69.2% in Tasmania).
- Nationally, 74.1% of boys aged 15 were fully immunised against HPV and the PHN ranked fifth lowset (70.4%) amongst 31 PHNs, where the percentages ranged from 83.5% in Murrumbidgee (NSW) to 62.5% in Tasmania.

5.2.12. Chronic conditions and burden of disease in children

Chronic conditions can interrupt a child's normal development and can increase their risk of being developmentally vulnerable at school entry.

Australia's Children 2020 report indicates that(70):

- In 2017-18, asthma, hay fever and allergic rhinitis, anxiety-related problems and psychological development problems were the four leading chronic conditions for children aged 0–14, based on self-reported proxy data from the ABS National Health Survey.
- Australian Burden of Disease Study 2015 (7), reported that for children under the age of 5, four of the five leading causes of the total burden of disease were infant and congenital conditions, mostly due to pre-term birth and low birthweight complications
- In 2017-18, among all children aged 5–14, asthma was the leading cause of disease burden followed by mental health disorders
- Between 2007–2008 and 2017–18, prevalence of child asthma remained similar (between 9.3% and 11%).

- In 2017, around 6,500 children aged 0–14 had type 1 diabetes, a rate of 141 per 100,000 children. The prevalence of type 1 diabetes among children remained stable between 2013 and 2017.
- In 2013–14, an estimated 314,000 children aged 4–11 (almost 14%) experienced a mental disorder. Boys were more commonly affected than girls (17% compared with 11%). Children living in families with one parent, blended families and poor family functioning environment were more likely to have mental disorders.
- In 2015, 7.4% of children aged 0–14 had some level of disability and 4.0% had a severe or profound level of disability and the most common disability types were intellectual and sensory/speech.
- Injury is a leading cause of child deaths and a major cause of hospitalisation.
    - During 2015–2017, injuries contributed to 563 deaths of children aged 0–14—a rate of 4.1 per 100,000 children.
    - The most common causes of injury death were land transport accidents, accidental drowning and assault.
    - In 2016–17, among children aged 0–14, there were around 66,500 were hospitalised injury cases—a rate of 1,445 per 100,000 children.
    - Overall, boys were 1.5 times as likely to be hospitalised for injury than girls.
    - Falls accounted for close to half (45.9% or around 30,500) of hospitalised injury cases and were the most common reason for injury hospitalisation of children across all age groups.

When these rates/percentages applied to the children of respective age groups within the PHN, the following estimations were drawn:

- In 2019, an estimated 12,690 children aged 5-14 suffered from asthma. LGAs with higher proportion of children aged 5-14 years, include Woorabinda (22%), Central Highlands (17%), Gladstone (16%), Banana (15%) and Rockhampton (14%), hence more likely to experience higher burden of childhood illnesses compared to other LGAs.
- Among children aged 0–14, estimated 231 children had type 1 diabetes; about 12,127 children had some level of disability and 6,555 children had a severe and profound level of disability
- Around 2,368 children aged 0-14 were hospitalised due to injury

5.2.13. Overweight and obesity

Overweight and obesity (the abnormal or excessive accumulation of fat in the body), increases a child's risk of poor physical health and is a risk factor for illness and mortality in adulthood(70).

Nationally, in 2017–18 (70) ,

- around 1 in 4 (24%) children aged 5–14 were overweight (17%) or obese (7.7%)
- the proportion of children overweight or obese remained relatively stable between 2007–08 (23%) and 2017–18 (24%)
- Children living in a Regional and remote area were more likely to be overweight or obese (29%) than children living in Major cities (23%).
- In Queensland, in 2020, there were 240,000 children (aged 5 to 17 years) were identified being overweight or obese (27%) (54).
- The PHN proportion (n=39,000, 26.5%) was similar to QLD, about one in four children were identified being overweight or obese

- The proportion was varied for the PHN HHS areas: CQ (31.6%) had the highest proportion followed by WB (27.1%) and SC 23.3%.

PHIDU data (81) provides SA3 level data for modelled estimates of number of children aged 2-17 years who were overweight and obese. All SA3s in Wide Bay had higher than the QLD rates for overweight (ASR 16.6 per 100) and obese children (ASR 9.3 per 100); however the rates for majority of the SC SA3s were lower than QLD rate for both measures. For detailed data See Table 24 below.

Table 24: Estimated number of children aged 2-17 years who were overweight (but not obese) and who were obese, 2017-18 (modelled estimates)

Region/SA3	Overweight (but not obese) children		Obese children	
	Number	ASR per 100	Number	ASR per 100
Central Queensland	**8,689**	**16.9**	**5,640**	**11.0**
Central Highlands	1,375	18.4	821	11.0
Rockhampton	4,169	16.4	2,797	11.1
Biloela	530	16.3	356	11.0
Gladstone	2,615	17.2	1,666	11.0
Wide Bay	**10,052**	**17.4**	**6,335**	**11.0**
Bundaberg	3,151	17.8	1,940	11.0
Burnett	1,821	17.7	1,125	11.0
Gympie - Cooloola	1,744	16.9	1,127	11.0
Hervey Bay	1,871	16.9	1,213	11.0
Maryborough	1,465	17.3	930	11.0
Sunshine Coast	**11,876**	**16.4**	**6,651**	**9.3**
Buderim	2,193	17.1	1,132	8.9
Caloundra	2,792	16.3	1,514	8.9
Maroochy	1,498	15.9	829	8.8
Noosa	1,432	16.6	693	8.1
Sunshine Coast Hinterland	1,666	16.0	1,113	10.8
Nambour	1,533	16.4	882	9.5
Noosa Hinterland	762	16.2	488	10.5
Queensland	**166,656**	**16.6**	**93,058**	**9.3**
AUSTRALIA	**805,800**	**16.7**	**396,400**	**8.2**

Source: Public Health Information Development Unit (PHIDU) (2020) Social Health Atlas of Australia: Table: Estimates_chronic_disease, PHIDU, Available at: https://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlas-of-australia-population-health-areas/
*Coded higher compared to Queensland

5.2.14. Physical activity

Participating in physical activity and limiting sedentary behaviour is central to a child's health, development and psychosocial wellbeing(70).

- Nationally, in 2018, two-thirds (67%) of children aged 0–14 participated in organised physical activities outside of school hours at least once a fortnight (54).
- Queensland data is reported on children aged 5- to 17-year-old and being active every day of past week. In 2020, this was 45.7% in Queensland compared to 47.1% within the PHN. Two HHS areas showed higher than QLD percentage: CQ 50.6%, WB 52.4% and SC 42.4% (54).

5.2.15. Sunburn

Epidemiologic studies show a higher incidence of malignant melanoma in persons with a history of sunburns during childhood and adolescence (82).

In 2020, Queensland data presented the following (54):

- Children aged 5 to 17 years who were sunburnt previous year was 44.5% (n=390,000).
- This percentage was 52.8% for the PHN (n=78,000), about one in two children were affected.
- HHS: Percentage of children affected in WB HHS (45.7%) was closer to QLD rate. However, the proportion was considerably higher in CQ HHS (54.3%) and SC HHS (55.5%).

5.2.16. Smoking and alcohol intake

Tobacco smoking is the leading preventable cause of death and disease in Australia and a leading risk factor for many chronic conditions such as cancer, respiratory diseases and cardiovascular disease (70, 83). Children who start smoking during their early adolescent years are more likely to smoke daily later in their life(70).

National level data suggests that (70)

- In 2017, 2.2% of secondary school students aged 12–14 were current smokers.
- Between 2002 and 2017, the proportion of secondary school students who were current smokers declined significantly. While 9% of secondary school students were smoking in 2002, in 2017 this had decreased 4-fold to 2%.
- Over the 15 years between 2002 and 2017, the proportion of secondary school students drinking at all (at least 1 drink) or engaging in single occasion risky drinking decreased significantly.
- The proportion of children drinking at all decreased more than 3-fold, from 24% in 2002 to 6.8% in 2017. The proportion of children drinking 5 or more drinks on 1 occasion in the past week also decreased, from 3.7% in 2002 to 1% in 2017.
- Children (12-14 years) living in low socio-economic areas were more likely to be smokers compared to children living in higher socio-economic areas (2.9% Vs 1.4%).
- Queensland data suggested that (54):
    - 23,000 (6.9%) school children aged 12–17 years smoked at least one cigarette in the past seven days in 2017
    - 22% of households with children had a current smoker living in the home, potentially risking the children to second-hand smoke exposure.
    - 6.9% of Queensland secondary school students aged 12–17 years had smoked in the previous week in 2017. This is higher than the national percentage of 5.0%.
- Approaches to youth smoking prevention interventions are reviewed and updated by Cancer Council, Victoria (84). It suggested key factors that influences to smoke and interventions and ways to address those. Key factors included family environment, smoking behaviour of peers, educational environment, accessibility to and availability of tobacco products and affordability(84).

5.2.17. Child learning and development

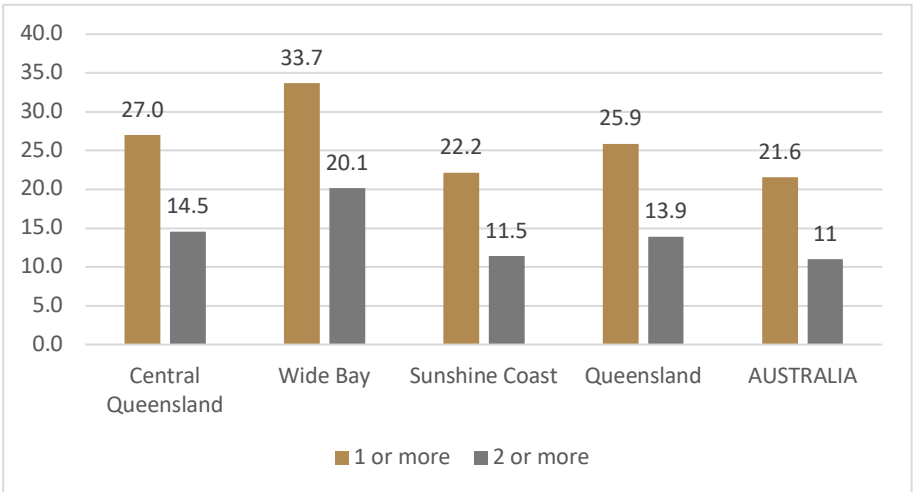
Children's learning and development in the early years is integral to their wellbeing, and in the longer term impacts their job prospects, and participation in and connection with the wider community. While parent reading to a child regularly and child reading books and attending some form of formal education

is helpful for children to develop well; identifying child development early at the young age identifies children who require some support. Australian Early Development Census (AEDC) is a nationwide data collection of early childhood development at the time children commence their first year of fulltime school. The AEDC domains have been shown to predict later health, wellbeing and academic success.

It is identified that in 2018 (85):

- 26.4% of children in the PHN catchment were developmentally vulnerable on one or more domains. This proportion was comparable with QLD (25.9%).
- Across the PHN catchment, the highest proportions of developmentally vulnerable children (one or more domains) continued to be seen in WB (32.7 – 33.8%), and Rockhampton (32.5%) in CQ. See
- Graph 15 below.
- In the Indigenous community of Woorabinda*, children were twice as likely to be developmentally vulnerable (62.1%) than other children in the PHN catchment. (*Woorabinda context is a discrete Aboriginal community, estimates based on small numbers, hence needs to be treated with caution)
- Children at high risk of being developmentally vulnerable on one or more domains were: from non-English speaking background, living in very remote areas, living in lowest socio-economic areas and from Aboriginal and Torres Strait Islander communities (54).
- Being developmentally vulnerable on one or more domains was also noticeable in South Australia in children who had contact with child protection agencies and out of home care.

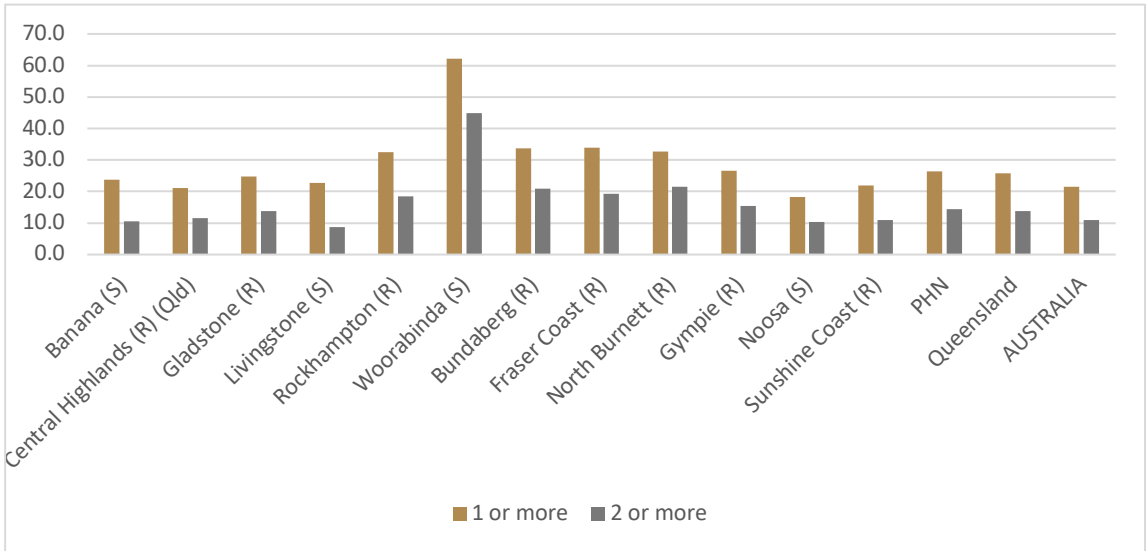
Graph 15: Percentage of developmentally vulnerable children, in 1 or more domains and 2 or more domains, by PHN regions, 2018



Source: AEDC (2019) Australian Early Development Census (AEDC) 2018, Commonwealth of Australia.

The PHN LGA data shows large disparities within the PHN(85) (Graph 16)

Graph 16: Percentage of developmentally vulnerable children, 1 or more domains; two or more domains, LGAs, 2018



Source: AEDC (2019) Australian Early Development Census (AEDC) 2018, Commonwealth of Australia.

5.2.18. Disability in children

National Disability Insurance Scheme data provides some insights into the level of disability within the PHN amongst young people. Specific data indicates that at the end of 2020 (86) there were about 12,666 young people across four disability regions within the PHN. The highest number of NDIS registered children under the age of 18 years (0 to 18 years) were in Maroochydore (n=4867) followed by Rockhampton (3704), Maryborough (2313) and Bundaberg (1782). Largest contributor to this disability was autism (5279), followed by developmental delay and intellectual disability (1405). However, please note that these figures need to be interpreted with caution due to various data limitations.

5.3. Service Status

5.3.1. Hospital admissions

In 2018-19, a total of 110,594 children aged 0-14 were hospitalised (this excludes admissions to public psychiatric hospitals) in Queensland; average number of hospitalisation per person was 1.4 (54). Public hospitals in QLD admitted more children than the private hospitals. Children aged 0-14 years accounted for about 8% of total admissions in public hospitals whereas only about 2.5% of total admissions in private hospitals were children of 0-14 years(54).

In Queensland, top three leading causes of hospital admission for 0–14 years in 2018-19 were respiratory diseases (21%), injury, poisoning and other external causes (13%) and symptoms, signs and other abnormal findings (9.0%).

PHIDU data provides data for common childhood conditions presented at ED. Similar to QLD hospital admissions, top three reasons children admitted to ED were respiratory diseases, injury and diseases of the digestive system(81). See Table 25.

Overall, Wide Bay and Central Queensland regions had higher than the QLD rate for ED admissions, for most of the common conditions presented at ED. The data informed that:

- In Sunshine Coast region, ED presentation for diseases of the respiratory system was higher than the QLD rate, for all other conditions the rates were lower than the state rate.
- Presentations for diseases of the musculoskeletal system and connective tissue, was lower in the PHN compared to the state/national rates; all SA3 areas had lower than the QLD and national rates.
- Central Highlands, Burnett, Biloela, Noosa, Noosa Hinterland SA3s had lower than the QLD rates for ED presentations for all conditions; However, one cannot conclude that these areas had lower cases of these conditions rather this needs to be further explored within the context of remoteness, ease of access to ED departments, availability of public transport and access to afterhours clinics etc.

Table 25: ED presentations for common conditions for children aged 0-14 years, by PHN-SA3s, 2018-19, (ASR per 100,000)

Location/SA3	Presentations for diseases of the respiratory system, persons aged 0 to 4 years		Presentations for diseases of the respiratory system, persons aged 5 to 14 years		Presentations for injury, poisoning and certain other consequences of external causes, persons aged 0 to 14 years		Presentations for diseases of the digestive system, persons aged 0 to 14 years		Presentations for factors influencing health status and contact with health services, persons aged 0 to 14 years		Presentations for diseases of the genitourinary system, persons aged 0 to 14 years		Presentations for diseases of the musculoskeletal system and connective tissue, persons aged 0 to 14 years		Presentations for mental and behavioural disorders, persons aged 0 to 14 years	
	n	ASR	n	ASR	n	ASR	n	ASR	n	ASR	n	ASR	n	ASR	n	ASR
Central Queensland	**1,991**	**12,480**	**713**	**2,138**	**7,032**	**14,246**	**488**	**995**	**639**	**1,305**	**416**	**848**	**148**	**298**	**191**	**380**
Central Highlands	64	2,471	21	411	169	2,229	20	261	13	170	16	209	8	106	5	68
Rockhampton	995	12,984	367	2,253	3,514	14,572	254	1,065	278	1,167	195	818	79	324	101	405
Biloela	25	2,464	10	472	67	2,132	15	481	#	..	#	..	#	..	#	..
Gladstone	907	19,358	315	3,206	3,282	22,601	199	1,380	344	2,388	201	1,394	58	397	85	576
Wide Bay	**2,633**	**17,156**	**1,208**	**3,347**	**8,882**	**16,849**	**650**	**1,274**	**836**	**1,641**	**538**	**1,056**	**237**	**435**	**206**	**355**
Bundaberg	890	18,874	436	3,968	2,903	18,108	214	1,375	319	2,054	166	1,068	90	545	53	303
Burnett	81	2,870	21	336	248	2,658	30	330	17	187	17	187	14	146	6	59
Gympie - Cooloola	648	23,585	303	4,647	1,989	20,946	131	1,427	178	1,943	107	1,167	41	418	36	344
Hervey Bay	539	18,767	230	3,251	1,934	18,916	133	1,354	149	1,521	118	1,203	53	498	72	629
Maryborough	475	21,689	218	4,137	1,808	23,686	142	1,926	173	2,353	130	1,766	39	494	39	463
Sunshine Coast	**2,660**	**13,646**	**845**	**1,788**	**7,104**	**10,455**	**561**	**854**	**428**	**654**	**425**	**648**	**322**	**458**	**211**	**283**
Buderim	427	13,781	161	1,959	1,270	11,004	80	726	72	657	69	627	71	588	30	231
Caloundra	805	16,910	238	2,128	1,880	11,654	185	1,178	86	549	118	752	88	531	66	381
Maroochy	408	13,761	109	1,841	921	10,176	83	924	67	745	50	557	42	460	28	299
Noosa	113	5,422	28	503	291	3,654	31	411	13	173	20	266	19	226	14	151
Sunshine Coast Hinterland	371	13,861	143	2,081	1,136	11,766	58	624	66	714	72	775	43	429	31	292
Nambour	478	16,231	154	2,406	1,374	14,659	105	1,135	106	1,148	76	821	49	516	33	341
Noosa Hinterland	58	6,017	12	388	232	5,484	19	486	18	464	20	512.5	10	219	9	175
Queensland	**41,963**	**13,250**	**13,560**	**2,042**	**113,467**	**11,521**	**8,833**	**904**	**7,254**	**743**	**7,132**	**730.4**	**6,376**	**642**	**2,931**	**291**
AUSTRALIA+	**205,417**	**13,047**	**71,147**	**2,261**	**539,090**	**11,419**	**50,062**	**1,060**	**43,466**	**921**	**32,378**	**685.8**	**46,732**	**990**	**13,404**	**284**

Source: Public Health Information Development Unit (PHIDU) (2020) Social Health Atlas of Australia: Available at: https://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlas-of-australia-primary-health-networks/ ; *ASRs higher than the respective QLD rates are highlighted in pink.

5.3.2. 13-Health service use by children

13-HEALTH is a confidential phone service that provides health advice to Queenslanders. It operates 24 hours a day, 7 days a week for the cost of a local call. In 2020-21 (July 2020 to June 2021), there were about 48,610 clients who received health advice through 13-health in the PHN region. More than one third (35%) of these service users were clients needing advice for their child (0-14) health issues.

About one in 10 PHN children aged 0-14 years were 13-health service users. Top five reasons to call 13-Health service included cough (age 1-4 years), fever (age 1-4 years), head injury, vomiting (aged 1-4 years) and unwell or Irritable newborn (Age 0-3 months). The distribution of service use was fairly similar across three PHN regions(87).

Table 26: Percentage of 13-Health users (0-14 years) by the PHN region, 2020-21 FY

PHN region	Number of 13-health clients (0-14 years' health issues)	PHN population aged 0-14 years (2019-20)	% of 13Health users, 0-14 years
Central Queensland	5048	49484	10.2%
Sunshine Coast	8322	78012	10.7%
Wide Bay	3481	36384	9.6%
Grand Total	16851	163880	10.3%

Source: Queensland Health (2021) 13HEALTH call data, 2020-21 financial year, Queensland Department of Health, QLD PHN Planning and Evaluation Collaborative.

Maternal and child health related issues and concerns raised in the ***PHN surveys*** covered antenatal care, child learning and development, and maternal and child health services. Nearly all community health survey respondents felt that it is important that pregnant people and new parents can get support they need (95%), and children's learning and development is highly important (97%). However, only about 40% of them were satisfied/very satisfied with the existing services regarding the parent support and child development and learning(17).

The PHN stakeholders provided their views on the accessibility and appropriateness of the existing maternal and child health care services. The findings indicated that about 28% of the respondents agreed that there were adequate numbers of the maternal and child services to meet the demand, whereas 35% of the respondents did not agree to the same statement. The proportion of disagreed respondents were higher in CQ (50%) followed by Wide Bay (29%) and Sunshine Coast (20%) (18); it further reinforces that the remoteness and lack of local health practitioners in rural areas contribute to the limited access to the specific services.

Summary of Issues

- *Within the PHN, Wide Bay region had the highest infant and child mortality rates and highest percentages of low birth weight (LBW) babies in the PHN:*
- *Women in the PHN were 1.5 times more likely to smoke during pregnancy than other Australian women. Across the PHN catchment, smoking rates during pregnancy were highest in WB (WB LGA %s ranged from 19.9% – 28.8% compared to the PHN percentage of 10.4%)*
- *Childhood Immunisation: Sunshine Coast region and its SA3s had the lowest vaccination rates across all three age groups; all lower than the target of 95%.*
- *Proportion of pregnant women who had eight or more antenatal care visits in 2018 within QLD (79.1%) was similar to the PHN (81.5%). The proportion varied between the three HHS areas (WB 80.4%, CQ 76.7% and SC 83.4%) of the PHN region*
- *A higher proportion of children in the PHN (26.4%) catchment were developmentally vulnerable on one or more domains compared with the national percentage (21.6%) –highest in Woorabinda (62.1%) and followed by three LGAs (Bundaberg-33.8%, Fraser Coast (33.8%) and North Burnett-32.7%) in Wide Bay area.*
- *The rates of overweight and obese children were higher in Wide Bay and Central Queensland regions compared to the QLD rates for both conditions*
- *Top three reasons children admitted to ED were respiratory diseases, injury, and diseases of the digestive system in the PHN and nationally*
- *About one in 10 PHN children aged 0-14 years were 13-health service users. Top five reasons to call 13-Health service included cough, fever, head injury, vomiting and unwell or irritable newborn.*

6. Young people aged 15-24 years

6.1. Youth population within the PHN

In 2019-20, an estimated 99,556 young people aged 15-24 lived in the PHN region, making up 11.4% of the total PHN population (10). This is slightly lower than the proportion of young people in Queensland (13.0%) and Australia (12.9%). The proportion was highest in Woorabinda (17.8%), followed by Rockhampton (13.9%) and Gladstone (12.0%)(10). See **Table 27** below.

In 2019, nationally, proportionate to population size, 81% of 15–19-year-olds, 70% of 20–24-year-olds and 73% of 25–29 year-olds were fully engaged in work and/or study. This was differed between rural and urban areas: 83% in major cities, 74% in inner regional areas and 72% in outer regional and remote areas were fully engaged in work/study (54). There has been no clear trend in young people fully engaged in work and/or study in Queensland over the past 10 years (54).

Proportion of young people learning or earning at ages 15-24 within the PHN (79.5%) is lower than the QLD (81.8%) and national rate (84.3%). LGAs with the lowest rate include Woorabinda (38.3%), Fraser Coast (73%) and Gympie (75%)(88).

Table 27: Key demographic and socio-economic indicators for young people, by LGA

LGA	15–24-year-olds in the PHN* (2019)		Learning or Earning at ages 15 to 24 (2016) **		Young people (16 to 24 years) receiving an unemployment benefit 2017) **	
	n	% of total PHN population	n	%	n	%
Banana (S)	1,494	10.6	1,168	80.4	58	4.4
Bundaberg (R)	10,641	11.1	7,806	75.9	985	10.3
Central Highlands (R) (Qld)	3,082	10.7	2,507	76.3	129	4.4
Fraser Coast (R)	10,242	9.6	7,184	73	1,023	11.4
Gladstone (R)	7,593	12.0	5,663	76.2	535	7.8
Gympie (R)	5,334	10.2	3,737	75	469	10.2
Livingstone (S)	4,387	11.5	3,305	79.1	197	5.2
Noosa (S)	5,551	9.9	3,972	84.8	231	5
North Burnett (R)	1,103	10.4	751	76.4	58	5.9
Rockhampton (R)	11,295	13.9	8,487	77.5	732	7.2
Sunshine Coast (R)	38,653	11.8	27,887	84.5	1,566	4.8
Woorabinda (S)	181	17.8	74	38.3	39	38.5
PHN	**99,556**	**11.4**	**72,575**	**79.5**	6,023	7.00
QLD	**661,901**	**13.0**	**501,780**	**81.8**	**27,801**	**4.7**
AUSTRALIA	**3,261,497**	**12.9**	**2,519,692**	**84.3**	**100,319**	**3.4**

* *Source: QGSO, 2020 Regional profiles from: ABS, Census of Population and Housing*

** *Source: PHIDU (2021) Social Health Atlas of Australia -by PHN, Local Government Area.*

PHIDU data indicated that in 2017 approximately 6,000 young people (7.0%) aged 16 to 24 years received an unemployment benefit, much higher than the QLD figure (4.7%). The LGAs with the highest proportions of young people receiving an unemployment benefit were Woorabinda (38.5%) and Fraser Coast (11.4%, over 1,000 young people), Bundaberg (10.3%) and Gympie (10.2%)(88). Proportion of

young people receiving unemployment benefit in the PHN region is higher than the state and national figures. (Table 27)

6.2. Health Status

Youth health is an important area. Promoting healthy practices during adolescence and taking steps to better protect young people from health risks is critical to the prevention of health problems later in life. We present key health concerns among young people and associated socio-economic and health determinants based on the available dataset. However, data on many indicators of health behaviours, health status and health service utilisation were often not available separately for young people. Some datasets used were from studies conducted 5-10 years ago. Nevertheless, we used those to inform key areas of concern and potential gaps in youth health.

6.2.1. Burden of Disease

Young people's key health concerns include the following(89):

- Mental health
- Disability
- Injuries
- Substance use

Mental health

Mental health problems and disorders account for the highest burden of disease among young people in Australia (26% aged 16-24 years)(90). The Young Minds Matter Survey (2013-14) (91) indicated that 4 to 17 year-olds have a higher prevalence of mental health disorders under the following social and demographic circumstances:

- Step, blended, and one parent families (18.3 – 23.7%) compared to original families (10.4%).
- Neither parent/carer employed (21.3 – 29.6%) compared to both parents/carers employed (10.8%)
- Lowest income bracket ($52,000 or less; 20.5%) compared to highest income bracket ($130,000+; 10.5%)
- Living outside of the greater capital city areas (16.2%) compared to living in those areas (12.6%).
- For more detailed information about youth mental health issues within the PHN, see Mental Health Needs Assessment (MHNA) document.

Disability

In 2018, across Australia 9.3% of all people aged 15–24 had disability (around 291,000 people)(89). The prevalence of disability was similar for males (9.2%) and females (9.5%). Among young people aged 15-24:

- 3.4% had severe or profound core activity limitations
- 6.9% had schooling or employment restrictions
- The prevalence of young people with disability was similar in 2003 and 2018 (9.0% and 9.3%, respectively).

PHN: With 99,556 young people (aged 15 to 24 years) living in the PHN catchment (2019), the above national statistics suggests that it is possible that within the PHN there are approximately 3,385 young

people with severe or profound core activity limitations; and 6,870 young people with schooling or employment restrictions.

The NDIS data informed that as at June 2021, nationally 74,213 young people received NDIS program support(92). This is about 2.3% of the total population aged 15-24; and about 26% of 15-24 year-olds with disability. (

Table **28**). The PHN proportion (3.2%) of NDIS participants was higher than the state (2.1%) and national figures (2.3%).

Table 28: Number and proportion of NDIS participants, as at June 2021

Location	NDIS Participants aged 15-24 years	
	n	%
Australia	74,213	2.3%
QLD	14,196	2.1%
PHN	3,149	3.2%

Source: NDIS (2021) Data and insights Retrieved 31st Aug,2021, from https://data.ndis.gov.au/

The proportion of young people with disability who received NDIS support was higher in the PHN (34%) compared to the QLD (23%) and national data (26%) (89, 92) despite lower proportion of young people in the PHN.

Injuries

In 2017–18, nationally there were around 73,200 hospitalised injury cases among young people aged 15–24 due to injury or poisoning—a rate of 2,300 per 100,000 (89). Of these cases, 72,600 had a cause of injury recorded. The leading causes of these injuries were (89):land transport accidents (18%, or 12,700) injury from inanimate mechanical forces (such as being struck or cut by something other than another human or animal) (17%, or 12,500)falls (15%, or 10,700).

In Queensland, injury related hospitalisations rate was second highest among 15–24-year-olds after the 65+ age group; young people living in remote and very remote areas were more at risk for injury related hospitalisations for both genders(93). Males experienced much higher rate of injury related hospitalisations compared to females across all age groups, except only for 65+ age groups, where females had higher rates (Table 29). There were no PHN/LGA level injury data by age groups.

Table 29: Numbers and rates of hospitalised injury cases among 15–24-year-olds, by sex, by remoteness of usual residence, Queensland 2017–18 (Age specific rate per 100,000)

Sex	Remoteness of usual residence									
	Major cities		Inner regional		Outer regional		Remote		Very remote	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
Males										
15–24	6,507	2,944.8	2,269	3,798.7	1,886	4,209.9	302	7,218.0	236	6,868.5
All ages	**41,041**	**2,625.8**	**14,803**	**3,057.2**	**11,536**	**3,315.2**	**1,583**	**4,099.4**	**1,161**	**4,168.9**
Females										
15-24	3,830	1,759.8	1,320	2,350.2	1,107	2,660.9	174	4,619.1	124	3,755.3
All ages	**35,351**	**2,187.4**	**11,710**	**2,386.7**	**8,507**	**2,492.1**	**979**	**2,884.8**	**769**	**2,899.8**
Persons										
15-24	10,337	2,356.8	3,589	3,096.7	2,993	3,464.1	476	5,986.7	360	5,343.6
All ages	**76,392**	**2,402.9**	**26,513**	**2,719.7**	**20,043**	**2,907.6**	**2,562**	**3,531.4**	**1,930**	**3,550.2**

Source: AIHW (2021) Geographical analysis of hospitalised injury and injury deaths data, 2017–18, Cat. no. INJCAT 216., Retrieved 31 August, 2021, from https://www.aihw.gov.au/reports/injury/geographical-analysis-injury-data

Deaths

Nationally, in 2019, among young people aged 15–24 (94):

- there were about 1,300 deaths—a rate of 41 per 100,000 young people. The death rate was more than twice as high for males (57 per 100,000 males or 946 deaths) as for females (23 per 100,000 females or 370 deaths) the death rate for those aged 20–24 (48 per 100,000 young people or 834 deaths) was 1.5 times as high as that for those aged 15–19 (32 per 100,000 or 482 deaths)the rate for male deaths was higher across both age groups: 2.3 times as high for the 15–19 age group, and 2.5 times as high for the 20–24 age group.
-

In Queensland, top three causes of death among young people were suicide, car accident and accidental poisoning by and exposure to noxious substances; males were more affected than females(95). Data is shown in Table 30 below.

Table 30: Top three causes of death, 15-24 years, age specific death rate, rates, QLD 2019

Causes of death	Males	Females	Persons
All causes	62.8	23.9	43.6
Intentional self-harm (X60-X84, Y87.0) for 15–24 years	24.4	9.5	17.1
Car occupant injured in transport accident (V40-V49)	11.6	2.1	6.9
Accidental poisoning by and exposure to noxious substances (X40-X49)	5.4	1.8	3.6

Source: Australian Bureau of Statistics (2020) Causes of Death, Australia, 2019

PHN: Pooled data of 2014-18 informed that youth mortality (all causes deaths of persons aged 15 to 24 years) in the PHN (ASR 49.3 per 100,000) was above state (40.5) and national (37.4) figures (88). See Table 31.

Table 31: Deaths of persons aged 15 to 24 years (2014-18)

LGA	Number	Average annual ASR per 100,000
Banana (S) - part b	6	74.7
Bundaberg (R)	27	51.3
Central Highlands (R)	13	75.6
Fraser Coast (R)	26	51.5
Gladstone (R)	23	59.9
Gympie (R)	14	55.0
Livingstone (S)	9	42.7
Noosa (S)	10	40.4
North Burnett (R)	#	..
Rockhampton (R)	31	54.8
Sunshine Coast (R)	70	40.3
Woorabinda (S)	#	..
PHN	**233.6**	**49.3**
Queensland	**1,312**	**40.5**
AUSTRALIA+	**5,634**	**35.5**

Source: PHIDU (2021) Social Health Atlas of Australia -by PHN, Local Government Area.

6.2.2. Health risk factors

As found in comparable international studies, Australian survey on Mental Health of Children and Adolescents also highlighted the strong relationship between socioeconomic disadvantage and higher rates of mental health problems (96). Children and adolescents in low-income families, with parents and carers with lower levels of education and with higher levels of unemployment had higher rates of mental disorders in the previous 12 months. There was also a strong relationship with where they lived as significantly higher rates of mental disorders were found in non-metropolitan areas.

Overweight/obesity and Nutrition

Nationally, over one-third of young people estimated to be overweight or obese. The PHN proportion of overweight/obese youth is much higher than that. According to the Queensland survey analytics, in the PHN about 52% of the young people aged 18-29 were identified as overweight /obese in 2019-20 (32). BMI (2 categories) data (2019-20) by HHS shows that Wide Bay had the highest proportion of young people aged 18-29 years identified as ***overweight/obese*** in the PHN region. All three HHS regions within the PHN had higher proportion of overweight/obese young people than the QLD pooled percentage (47.1%). The rates for HHSs within the PHN catchment were (32):

- Wide Bay: 57.2%; this was the third highest among all HHSs in QLD
- Central Queensland: 54%
- Sunshine Coast: 49%

In 2018-19, the proportion of young people (18-29 years) identified as having ***insufficient amount of daily fruit consumption*** was higher in Wide Bay compared to the QLD (pooled) percentage (52.9%) (32):

- Wide Bay: 54.5%
- Central Queensland: 52.8%
- Sunshine Coast 44.8%

The proportion of young people having ***insufficient amount of daily vegetable consumption*** were(32):

- Very low in Wide Bay (96.7%)- second lowest among HHSs in QLD.
- Central Queensland: 92.3%
- Sunshine Coast: 88.4%
- QLD: 92.7%

Smoking and alcohol use

Self-reported data from the 2019 NDSHS found that nationally, fewer young people are taking up smoking (97):

- The proportion of people aged 14–17 who had never smoked increased from 82% in 2001 to 97% in 2019.
- The proportion of 14–17 year-olds who were daily smokers decreased from 11% in 2001 to 1.9% in 2019. However, it is noted that the estimate for 2019 should be interpreted with caution as the RSE (relative standard error) was between 25% and 50%.

Queensland survey presented the ***PHN level data (2019-20)*** for smoking among persons 18-29 years(32):

- The proportion of non-smokers or non-daily smokers were 86.5% (QLD 87.7%)
- The proportion of young people who had never smoked was 62.4%; lowest among the PHNs in QLD survey report. (QLD 69.6%)

- The proportion of daily smokers was relatively higher at 13.5%; the second highest among the PHNs surveyed in QLD report. (QLD 12.3%)

HHS level data (2019-20) showed that both Central Queensland (15.9%) and Wide Bay (15%) HHSs had higher than the QLD (12.3%) proportion of daily smokers aged 18-29 years(32). However, it is noted that HHS estimates need to be interpreted with caution as the RSE (relative standard error) was between 25% and 50%. There were no data available for Sunshine Coast HHS.

- Nationally, the proportion of 14–17 year olds consuming 5 or more drinks at least monthly remained stable between 2016 and 2019 (8.0% and 8.9%, respectively) but has declined since 2001 (30%)(89).
- Alcohol use among the PHN young people (18-29 years) were highest in the PHNs in QLD. The QLD survey analytics data (32) showed that in 2019-20:
- The proportion of young people with average weekly consumption of more than 10 standard drinks were 40.9% (QLD 34%). Data by HHS indicated:
- Sunshine Coast HHS: 50%. This is highest in the region and much higher than the QLD proportion.
- Wide Bay: 35%
- Central Queensland (32%)

For more detailed information about alcohol and substance use among youth, see AoD Needs Assessment document.

Sexual and reproductive health

PHN: Patterns of rising incidence of sexually transmitted infections and blood borne viruses (STIBBV) are evident throughout the PHN. Analysis of state notifiable conditions data (98) indicated:

- Chlamydia was the most notified STIBBV in the PHN (2018-19), followed by hepatitis C, though current pattern suggests that gonorrhoea will take over with 2nd highest incidence next financial year.
- Gonorrhoea and infectious syphilis saw the highest growth in incidence (in less than 2-year duration), with both more than doubling between 2014-15 and 2018-19.

In 2018-19,

- notifications of hepatitis C per 100,000 population were greater than the state average of (49.8) in Woorabinda (498), Livingstone (202), Fraser Coast (125) and Banana (77)
- Woorabinda had the highest notification rates for 5 of the 6 STIBBVs.
- Nearly two in five (38.6%) hepatitis B notifications within the PHN occurred in North Burnett in 2018-19.

6.3. Service Status

6.3.1. Mental health services

In 2018–19, young people aged 12–24 made up 21% (557,000) of all people receiving Medicare-subsidised mental health-specific services. Across different service providers, young people aged 12–24 accounted for(89):

- 19% (78,100) of people receiving services from psychiatrists
- 21% (472,000) of people receiving services from general practitioners
- 22% (118,000) of people receiving services from clinical psychologists

- 23% (169,000) of people receiving services from other psychologists
- 23% (25,200) of people receiving services from other allied health providers

PHN data showed that 18% of people receiving MBS MH services were young people aged between 15-24 years (99).

Table 32 below shows the percentage of uptake of various MBS-MH services by PHN youth.

Table 32: Medicare-subsidised services used by 15-24 year-olds, PHN, 2018–19

Service	Percentage of people who had the service (%)	Services per 100 people
GP Mental Health	15.03	24.27
Allied Health subtotal - Mental Health Care	8.97	38.83
Clinical Psychologist	3.17	13.45
Other Allied Mental Health	1.13	4.16
Other Psychologist	5.24	21.22
Psychiatry	2.24	8.53

Source: Australian Institute of Health and Welfare (2021) 'Medicare-subsidised mental health-specific services, by PHN area and SA3 area and provider, 2018-19

The PHN prevalence data when compared to the service uptake data, there was a relatively high unmet need of youth mental health service, especially in the psychiatry and clinical psychologist services.

6.3.2. HPV Immunisation

Immunisation against the human papillomavirus (HPV) can prevent cervical and other cancers, and other HPV-related diseases. The National HPV Vaccination Program has been immunising adolescent girls since 2007 and was extended to boys in 2013.

The PHN data is shown in **Table 33** below. The PHN rate was similar with the QLD rate; however, a large disparity exists within the PHN.

Table 33: Number and percentage of youth at 30 June 2017 who had received Dose 3 of the HPV vaccine, by gender

Name (PHN/LGA)	Females		Males	
	N	% vaccine coverage	N	% vaccine coverage
Banana (S) - part b	90	108.5	71	95.0
Bundaberg (R)	495	83.4	562	90.0
Central Highlands (R)	166	91.4	186	91.3
Fraser Coast (R)	516	79.8	467	73.5
Gladstone (R)	389	86.8	381	83.4
Gympie (R)	253	72.1	219	63.1
Livingstone (S)	157	71.8	196	66.5
Noosa (S)	229	68.5	254	71.1
North Burnett (R)	66	78.6	60	85.0
Rockhampton (R)	424	73.4	423	70.2
Sunshine Coast (R)	1,332	69.2	1,382	68.6
Woorabinda (S)	#	..	#	..
PHN	**4,124**	**75.7**	**4,207**	**73.9**

AUSTRALIA+	**110,996**	**80.5**	**110,430**	**76.1**
Queensland	**23,476**	**79.2**	**23,150**	**73.8**

Source: PHIDU (2021) Social Health Atlas of Australia -by PHN, Local Government Area.

6.3.3. Patient experiences

The ABS Patient Experiences in Australia survey collects information about access and barriers to a range of health care services. In 2018–19, the most common health service used by young people aged 15–24 in the 12 months before the survey was a general practitioner (GP).

In 2018—-19, the majority of young people who saw a GP said,

- the GP always: listened carefully (71%),
- showed respect (79%) and
- spent enough time with them (71%).
- however, 19% said they waited longer than they felt was acceptable to get an appointment (ABS 2019d).

There were no PHN or lower geographical data in patient experiences by age groups.

Youth related issues raised in the ***PHN surveys*** further confirmed abovementioned data findings. It identified drug and alcohol use including binge drinking among young people, youth mental health and suicide prevention as priority health concerns. About 90% of the PHN community health survey respondents stated that it is important that people of all ages do not binge drink or abuse drugs; however, about 55% of the respondents were not pleased with the current situation in regards to binge drinking and drug use in the community (17). The highest priority area among youth across all areas within the PHN was mental health service that includes psychology support, psychiatry service and suicide prevention interventions. These services need to be more accessible, appropriate and youth friendly.

The PHN stakeholders survey findings indicated that about 40% of the respondents indicated that health care services are accessible and appropriate for children and young people; however 36% “did not agree” to the statement and about 20% were “unsure” (18).

Summary of Issues

- *In 2019-20, an estimated 99,556 young people aged 15-24 lived in the PHN region, making up 11.4% of the total PHN population*
- *In 2017 approximately 6,000 young people (7.0%) aged 16 to 24 years received an unemployment benefit, which is much higher than the QLD rate (4.7%).*
- *Proportion of young people learning or earning at ages 15-24 within the PHN (79.5%) is lower than the QLD (81.8%) and national rate (84.3%). LGAs with the lowest rate include Woorabinda (38.3%), Fraser Coast (73%) and Gympie (75%)*
- *Mental health problems and disorders account for the highest burden of disease among young people in Australia including the PHN*
- *The proportion of young people with disability who received NDIS support was higher in the PHN (34%) compared to the QLD (23%) and national data (26%) despite lower proportion of young people in the PHN.*
- *In Queensland, injury related hospitalisations rate was second highest among 15–24-year-olds after the 65+ age group; there was no injury related data at the PHN or lower geographical level*
- *Pooled data of 2014-18 informed that youth mortality (all causes deaths of persons aged 15 to 24 years) in the PHN (ASR 49.3 per 100,000) was above state (40.5) and national (37.4) percentages.*

Health risk factors:

- *about 52% of the young people aged 18-29 were identified as overweight /obese in 2019-20, in the PHN*
- *in 2018-19, the proportion of young people (18-29 years) identified as having insufficient amount of daily fruit consumption was higher in Wide Bay compared to the QLD (pooled) percentage (52.9%)*
- *the proportion of young people having insufficient amount of daily vegetable consumption were very low in Wide Bay (96.7%); the second lowest among all HHSs in QLD.*
- *the proportion of daily smokers was relatively higher at 13.5%; the second highest among the PHNs surveyed in QLD report.*
- *Alcohol use among the PHN young people (18-29 years) were highest among the PHNs in QLD*
- *Patterns of rising incidence of sexually transmitted infections and blood borne viruses (STIBBV) are evident throughout the PHN*
- *There was a relatively high unmet need of youth mental health service, especially in the psychiatry and clinical psychologist services.*
- *The PHN HPV immunisation rate was similar with the QLD rate; however, a large disparity exists within the PHN.*

7. Older Person's Health

Elderly people living independently within their communities live a longer and healthier life. The PHN region includes many areas with high proportions of elderly people including many beachside locations which are known retirement destinations.

The PHN demographic shows that in 2019 (10),

- the percentage of people aged 65 years and over (20.6%) in the PHN was higher than for the state overall (15.7%)
- Within the PHN, 6 out of 12 LGAs have more than 20% of their populations aged 65 and above. Fraser Coast (27.8%), North Burnett (27.5%), Noosa (25.6%), Bundaberg (24.1%), Gympie (23.8%) and Sunshine Coast (20.4%). (See Table 34 below)
- Fifty-two SA2 areas within the PHN have more than 20% of the population aged 65 years and above. SA2 areas with highest proportions are Cooloola (40.5%), Noosaville (33.9%), Pialba - Eli Waters (32.9%), Caloundra and surroundings (32%) and Torquay and Maryborough (29%) (8).
- Population predictions are based on the 2016 data and published in 2018 (2).
- In 2016 there were an estimated 160,000 people aged 65 and over in the PHN – this is predicted to almost double to 300,000 by 2036.
- By 2021, the proportion of the PHN population aged 65 and over will be 19.7%, compared to Queensland with 15.0%. This translates to 190,000 people aged 65 and over by 2021 (an increase of more than 30,000 elderly) and almost 300,000 people aged 65 and over in the PHN by 2036.
- By 2036, it is projected that 9 out of 12 LGAs (exceptions Central Highlands, Gladstone and Woorabinda) will have more than 20% population aged over 65 years.
- Six LGAs – Livingstone in CQ, Bundaberg and Fraser Coast in WB, and Gympie, Noosa and Sunshine Coast LGAs in SC – are projected to have more than 30% of their population aged 65 years and over in 2036.
- CQ is projected to experience the highest growth in the number of people aged 85 years and over, increasing threefold by 2036.

Table 34: PHN estimated resident population aged 65 years and over by LGA, June,2019

Region/LGA	Age group					Total 65+	% of total LGA population
	65–69	70–74	75–79	80–84	85 and over		
Central Queensland	**10,437**	**8,360**	**5,718**	**3,789**	**3,397**	**31,701**	**14.0**
Banana (S)	717	540	383	283	230	2,153	15.2
Central Highlands (R) (Qld)	957	705	430	250	173	2,515	8.8
Gladstone (R)	2,656	2,082	1,300	695	567	7,300	11.5
Livingstone (S)	2,401	1,932	1,301	870	802	7,306	19.2
Rockhampton (R)	3,687	3,088	2,295	1,686	1,616	12,372	15.2
Woorabinda (S)	19	13	9	5	9	55	5.4
Wide Bay	**16,241**	**15,880**	**10,860**	**6,794**	**5,624**	**55,399**	**26.0**
Bundaberg (R)	6,631	6,380	4,569	3,026	2,498	23,104	24.1
Fraser Coast (R)	8,863	8,771	5,785	3,455	2,820	29,694	27.8
North Burnett (R)	747	729	506	313	306	2,601	24.5
Sunshine Coast	**27,694**	**25,661**	**17,852**	**11,430**	**11,183**	**93,820**	**21.5**
Gympie (R)	3,959	3,630	2,282	1,346	1,252	12,469	23.8
Noosa (S)	4,400	4,034	2,753	1,612	1,502	14,301	25.6
Sunshine Coast (R)	19,335	17,997	12,817	8,472	8,429	67,050	20.4
Grand Total	**54,372**	**49,901**	**34,430**	**22,013**	**20,204**	**180,920**	20.6

Source: QGSO, 2020 Regional profiles from: ABS, Census of Population and Housing

As at March 2021, 69% of those aged 65 years and over in the PHN region were receiving the Age Pension (100). Wide Bay region had highest proportion (76%) of 65+people receiving the age pension followed by CQ (67%) and SC (65%). See **Table 35** below.

Table 35: Number and percentage of age pension recipients by LGA, 2021

Region/LGA	Age Pension	Age pension recipients as % of total 65+ population
Central Queensland	**21,332**	**67%**
Banana (S)	1,136	53%
Central Highlands (R) (Qld)	1,299	52%
Gladstone (R)	5,420	74%
Livingstone (S)	4,555	62%
Rockhampton (R)	8,895	72%
Woorabinda (S)	27	49%
Wide Bay	**41,881**	**76%**
Bundaberg (R)	17,508	76%
Fraser Coast (R)	22,725	77%
North Burnett (R)	1,648	63%
Sunshine Coast	**60,907**	**65%**
Gympie (R)	9,077	73%
Noosa (S)	8,110	57%
Sunshine Coast (R)	43,720	65%
PHN total	**124,120**	**69%**

Source: Department of Social Services, DSS Payments by 2020 LGA March 2021, Available from : https://data.gov.au/dataset/ds-dga-8dc2eaa3-e052-43a4-806b-91ca9306c346/distribution/dist-dga-1cdccd05-80cd-46db-8d5a-933b4a4d129f/details?q=

7.1. Health Status

7.1.1. Behavioral, biomedical, and social determinants of health

The health of the increasing number of older Australians is an important social and economic challenge facing Australia. Number of biomedical and behavioural health risk factors influence this wellbeing.

National data from 2014-15 indicated that, for people aged 65 and above (86):

- 9 in 10 believed they have someone outside the household in whom they can confide and have support in a time of crisis
- 35% undertook sufficient physical activity (48% for 18 to 64 year)
- 7% were daily smokers (16% for 18 to 64 year)
- 72% were overweight or obese (61% for 18 to 64 year)
- 52 % experienced stress (63% for 18 to 64 years)
- 47% people aged 75 and over had measured high blood pressure (42% for men and 51% for women) compared with 42% among people aged 65–74
- 32% had a total cholesterol level that was considered high (2011–12)
- 7% had high fasting blood sugar levels and a further 13% had diabetes (2011-12)

When these rates/percentages applied to the PHN 65+population, it is estimated that there are about 130,200 population aged 65+ who are overweight or obese; 94,000 experienced stress; about 36,000 had high blood pressure and about 58,000 had high cholesterol level.

Similar to other health conditions among general population, older people's health conditions and its risk factors are also affected by associated socioeconomic indicators. The rate of disease burden in the elderly increased with remoteness (1.5 times higher in very remote areas than in major cities) and socio-economic disadvantage (1.3 times higher for lowest SES than highest SES) (101).

About 10% of the PHN older population have Commonwealth senior's health card that is provided as an extra support to low-income pensioners(100). Noosa (13.2%), Banana (12.1%), Sunshine Coast (11.8%), and Livingstone (11%) had the highest proportion of senior's health card holders among 65+ population in the PHN. See Table 36 below.

Table 36: Number and percentage of Commonwealth Seniors Health Card holders, by LGA, 2021

LGA_name_2020	Commonwealth Seniors Health Card	SHC holders as % of 65+population
Central Queensland	**2890**	**9.1%**
Banana (S)	260	12.1%
Central Highlands (R) (Qld)	185	7.4%
Gladstone (R)	698	9.6%
Livingstone (S)	806	11.0%
Rockhampton (R)	941	7.6%
Woorabinda (S)	-	n/a
Wide Bay	**3,969**	**7.2%**
Bundaberg (R)	1,780	7.7%
Fraser Coast (R)	1,925	6.5%
North Burnett (R)	264	10.1%
Sunshine Coast	**10,680**	**11.4%**
Gympie (R)	880	7.1%
Noosa (S)	1,894	13.2%
Sunshine Coast (R)	7,906	11.8%
PHN total	**17539**	**9.7%**

Source: Department of Social Services, DSS Payments by 2020 LGA March 2021, Available from : https://data.gov.au/dataset/ds-dga-8dc2eaa3-e052-43a4-806b-91ca9306c346/distribution/dist-dga-1cdccd05-80cd-46db-8d5a-933b4a4d129f/details?q=

7.1.2. Leading Causes of Death

In 2016-18, for people aged 65 and above, the leading causes of death slightly differed between the age groups (102):, Nationally (102):

- For people aged 65-74 years, the leading causes of death were: lung cancer followed by coronary heart disease, COPD, colorectal cancer and cerebrovascular disease.
- For people aged 75 and over, the leading causes of death were: coronary heart disease, dementia including Alzheimer's, cerebrovascular disease, COPD and lung cancer.

7.1.3. Disability

- The 2018 survey of disability, ageing and carers found that, of the people with disability in Australia, an estimated 13% had back problems and another 13% had arthritis as the main long-term health condition causing the disability (2).
- The prevalence of disability increased with age - one in nine (11.6%) people aged 0-64 years and one in two (49.6%) people aged 65 years and over had disability (103). QLD proportion was similar to national statistics. About 49% (or 377,300 people) Queenslanders aged 65 years or older were living

with a disability in 2018. When this is applied to the PHN, that is an estimated about 90,000 older people above the age of 65 in the PHN region who might have some types/levels of disability.

Among older Australians with disability, **nationally** (2):

- 35.4% had a profound or severe limitation. However, among older Queenslanders, 14% were living with severe or profound disability(54). (applying the latter proportion to the PHN, about n=12,600 living with severe or profound disability in the PHN);
- 15.0% had a moderate limitation, (PHN n=13,500)
- 40.1% had a mild limitation (PHN n=36,000)
- 22.5% needed assistance with health care (that is about n=20,200 people within the PHN region)

7.1.4. Chronic conditions

The prevalence of chronic conditions increases with age. Effective prevention, early detection and management of chronic conditions can delay the progression of disease, reduce the need for high-cost hospital-based interventions, improve quality of life in old age. The population aged 65 and over is predicted to increase within the PHN catchment at higher rate compared to Queensland. It is known that the high proportion of elderly people with chronic conditions have low quality of life and high use of health services.

Results from the National Health Survey 2017-18 indicated that (104)

- about 75% of PHN residents over 65 years of age have one or more long-term health conditions (QLD 78.5%). More detailed information/data is provided in multimorbidity sub-section.

Additionally, approximately:

- 41% of PHN residents aged over 65 had high blood pressure (QLD 38%)
- 21% had high cholesterol (QLD 19%)
- 16% had anxiety related problems (QLD 12%)

For older adults (65 years and older), the leading conditions in PHN were:

- Total diseases of the eye and adnexa (88.5 %; Qld 93%)
- Total endocrine, nutritional and metabolic diseases (37.5%; Qld 37%)
- Mental illness (20%; Qld 20.4%)
- Number of responses were small to indicate other conditions

For people aged 60 years and over within the PHN, specific SA2 areas indicated high prevalence of chronic conditions (105) :

- % of people with asthma was higher compared to national % (12.6% in 2017-18) in 65 SA2 areas within the PHN (>12.6%). Highest % was in Nambour (16.8%), Bundaberg (16.5%), Gympie-North (15.9%), Sippy Downs (15.7%), Caloundra-Kings Beach (15.2%) and Pialba-Eli Waters (15.2%).
- % of people with diabetes was higher compared to national % (15.5% in 2017-18) in 40 SA2 areas within the PHN (>15.5%). Highest % was in Kingaroy Region-North (20.8%), Gin Gin and Monto - Eidsvold (20.1%), Mount Morgan (18.9%), Rockhampton City (18.8%) and Bundaberg (18.7%).
- % of people with heart, stroke and vascular diseases was higher compared to national % (15.9% in 2017-18) in 38 SA2 areas within the PHN (>15.9%). Highest % was in Park Avenue (19.4%), Rockhampton – West (19.3%), Svensson Heights (18.6%), Rockhampton Region – East (18.5%) and in Millbank – Avoca, Emu Park, Ashfield – Kepnock, Mount Morgan (all 18.4%).
- % of people with three or more chronic conditions was higher compared to national % (29%) (106) in 17 SA2 areas within the PHN (>29%). Highest % was in Mount Morgan (34.8%), Gympie-North (34.3%), Berserker (33.3%), Lakes Creek (33.1%) and Rockhampton (32.9%).

Regarding bone and joint health, in 2017-18, nationally (107)

- 63% for people aged 65 to 74 years and 68% of people aged 75 and over had chronic musculoskeletal conditions. For the PHN population, that is about n=65,700 people aged 65 to 74 years (from n= 104,273 people of respective age group) and about n=52,100 people aged 75 and over (from n= 76,647 people of 75+ age group)
- 76% of elderly (65+) had at least one other chronic condition with arthritis which will be n=137,500 for the PHN
- In 2017-18, almost 25% of people aged 65 and above had back problems (108), that will be approximately 45,200 people in the PHN

Among 65 years and older Queenslanders, there were 6.1 (5.7–6.5) physical unhealthy days and 2.8 (2.5–3.1) mental unhealthy days in the past 30 days, when the data was collected (2017-18) . These days were higher in people with disadvantaged SES status and living in remote areas. The risk of having higher mental unhealthy days was higher in smokers, risky drinkers, obese and inactive individuals. The average physical, mental, total and limiting unhealthy days were highest in Wide Bay HHS area in Qld (49).

Coronary heart disease was the leading cause of burden (10.9%) in adults aged 65 and over (109).This was followed by dementia (8.3%), COPD (6.5%), stroke (4.8%) and lung cancer (4.5%).

7.1.5. Key Elderly Health Issues

Dementia

Dementia is a syndrome in which there is deterioration in memory, thinking, behaviour and the ability to perform everyday activities and it is one of the major causes of disability and dependency among older people worldwide (110). The physical, emotional and economic impact of dementia extends to families and caregivers of the individual suffering from dementia. As the number of people aged 65 years and over in the population increases, a concomitant increase in the number of people with dementia is possible, although it is not a normal part of ageing (110).

Sunshine Coast and Wide Bay areas are projected to experience high increases in dementia prevalence. There were around 95,000 hospitalisations in 2016-17 across Australia (111).

In 2018 (112),

- there were an estimated 219,000 Australians with dementia, a 12.7% increase from 194,400 in 2015.
- Females, with a prevalence of 1.0%, were more likely than males to have the condition (0.8%)
- There is variation in the prevalence of dementia across age groups, with the condition being very rare in those under 65 years of age (0.1%), increasing to over one quarter (27.5%) of those aged 95 years and over.

The Alzheimer's Australia 2011 report estimated that (113):

- The number of people in the PHN living with dementia was projected to almost double from 13,700 in 2016 to 27,000 in 2030.
- The number of people living with dementia was projected to more than double for the SC area from 7,300 in 2016, to 14,800 in 2030.
- The WB area was projected to experience the greatest increase in proportion of people living with dementia between 2016 (19.6 per 1,000 population) and 2030 (31.9). This was significantly greater than the Queensland estimates (12.6 to 18.4).

Latest mortality data indicated that (114):

- Together, dementia and Alzheimer's disease were the second leading cause of death in the PHN, responsible for 2,234 or 7.2% of deaths in the 2013-2017 period

- Around half of those (951, or 9% of deaths) occurred in Sunshine Coast LGA.
- Gladstone and Rockhampton LGAs have the highest rate (ASRs 43.3 per 100,000) of deaths due to dementia and Alzheimer's disease in the PHN (PHN ASR 36.7 per 100,000; AUS 40.0 per 100,000). Livingstone LGA had the lowest rate (ASR 25.4 per 100,000).

Dementia Australia (115) estimated the prevalence of dementia by LGAs. (Table 37). The data also indicated that the Rockhampton, Banana, Sunshine Coast, North Burnett and Bundaberg LGAs had the highest rates in the PHN region.

Table 37: Estimated number of people living with dementia in 2021 and 2058, by LGA

Location	Estimated number of people living with dementia in 2021	Rate per 1,000 population aged 65 and over (based on 2019-20 population) *	Estimated number of people living with dementia in 2058
Central Queensland	**3656**	**115.3**	**6732**
Banana	258	119.8	435
Central Highlands	272	108.2	644
Gladstone	810	111.0	1,830
Livingstone	770	105.4	1,297
Rockhampton	1,543	124.7	2,499
Woorabinda	3	54.5	27
Wide Bay	**6,094**	**110.0**	**9,909**
Bundaberg	2,595	112.3	3,497
Fraser Coast	3,206	108.0	6,102
North Burnett	293	112.6	310
Sunshine Coast	**10,467**	**111.6**	**22,662**
Gympie	1,302	104.4	2,288
Noosa	1527	106.8	2992
Sunshine Coast	7,638	113.9	17,382
PHN	**20,217**	**111.7**	**39,303**
QLD	**90,000**	**112.5**	**207,000**

Source: Dementia Australia (2018) dementia prevalence data 2018-2058, commissioned research undertaken by NATSEM, University of Canberra. Available from https://www.dementia.org.au/sites/default/files/2021-06/Comms_Policy_Prev_LGA_2021_QLD.pdf/
**LGAs with higher than the PHN rate is highlighted in red*

The PHN rate of Geriatric Evaluation and Maintenance (GEM) and psychogeriatric hospital admissions per 100,000 population has increased from 115 per 100,000 in 2015-16 to 171 per 100,000 in 2017-18 (compared to QLD 102 to 115 per 100,000). These admission rates have more than doubled in Banana, Rockhampton and Gympie over the same period. The highest admission rate in the PHN (2017-18) was seen in Rockhampton (429 per 100,000, more than 3 times QLD 115) (116).

My Aged Care data indicates that 50.6% of people using permanent residential care within the PHN on 30th June 2019 had a diagnosis of dementia (117).

Frailty

Frailty is a condition that results from age-associated decline in body systems which result in increased vulnerability to sudden changes and the ability to cope with every day or acute minor stressor events(118). Persons with frailty have higher rates of unplanned hospitalisations and readmissions, falls, delirium and medication-related adverse events(54). All older adults are at risk of developing frailty. However, risk levels are substantially higher among those with comorbidities, low socioeconomic background, poor diet, and sedentary lifestyles(119).

In Queensland in 2016, the prevalence of frailty in those aged 65+ living the greater Brisbane region was estimated to be 1.5% and 5.7% were pre-frail.

For those in the rest of Queensland,

- the prevalence of frailty in 2016 was 1.8%; this is estimated to be rising to 2.2% in 2027
- as for pre-frailty, prevalence estimates were 7.3% (2016) and 8.3% (2027).
- for the PHN older population, that is approximately n=14,200 people with pre-frailty and n=3,700 people with frailty in 2019-20.

A small-scale study involving 592 older people living in 10 aged care facilities in Queensland reported a much higher prevalence of frailty (44%) and pre-frailty (46%)(54). This informs that there is a potentially higher number of undiagnosed cases of frailty and prefrailty.

Falls

Falls are common amongst people aged 65 years and over, with around 30% of adults over 65 experiencing at least one fall per year (120). Injuries resulting from falls are the major cause of death, hospitalisation and emergency department presentations among elderly population. More than half of all injury deaths in this age group are due to falls. The PHN catchment shows similar rates of falls with Queensland. , Falls are a major cause of hip fractures accounting for 91% of the hip fractures among elderly (86) and greatly contribute towards reducing quality of life for elderly.

With regards to falls in people aged 65 and above: (32):

- Highest rate of falls was reported within the PHN (8,223 ASR per 100,000 people; n=13,956) amongst compared to other six Qld PHN regions.
- The rate of falls within the PHN was significantly higher compared to Qld rate (7,704 ASR per 100,000 people)
- Rate of falls was significantly higher in SC HHS (ASR 8,549 per 100,000) and WB HHS (ASR 8,135 per 100,000).
- Rate of falls in CQ was similar to Qld (ASR 7,358 per 100,000)

Queensland Health admissions data for 2017-18 indicated that there were 8,848 falls admissions for people aged 65 years and over in the PHN. The crude rate of falls admissions per 1,000 people aged 65 and over in the PHN (54.9) was significantly lower than the state average (72.9) in all areas except for North Burnett LGA (76.0)(116).

7.1.6. Multimorbidity

As people age, they are more likely to report multiple chronic conditions. Australia's health 2012 that among older Australians living in the community, almost half aged 65-74 years have five or more long-term conditions, increasing to 80 per cent of those aged 85 years or over reported (121).

The frequency of multiple chronic conditions for 65+ population is presented in this section. The included chronic conditions were arthritis, asthma, back problems, cancer, COPD, diabetes, heart stroke and vascular disease, kidney disease, mental and behavioural conditions and osteoporosis(122).

Considering all persons in Queensland in 2017–18 (122) :

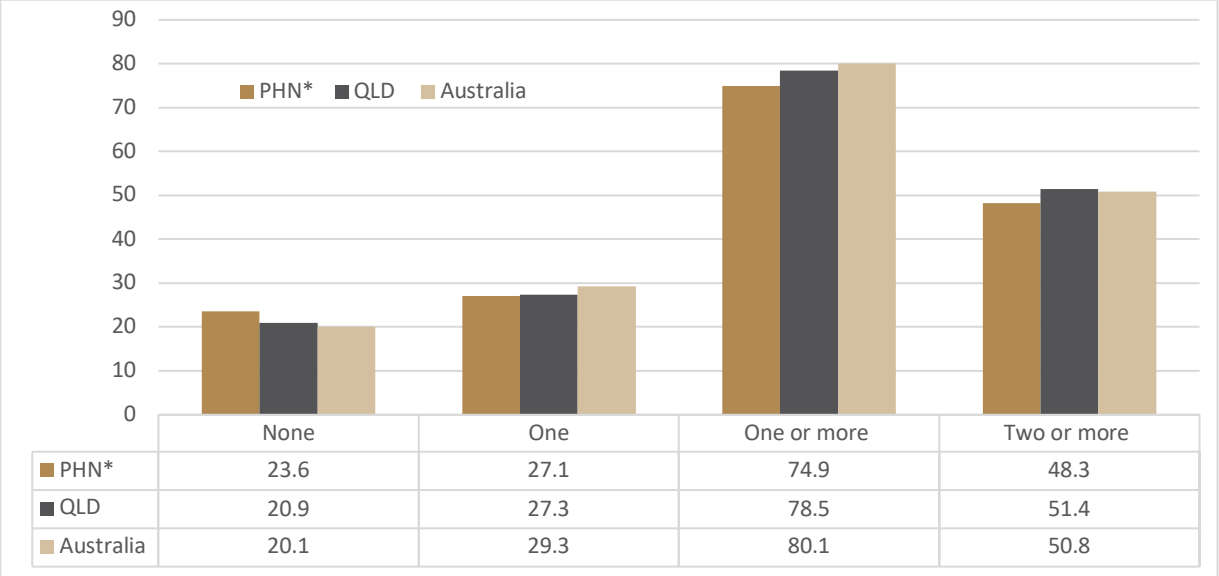
- 52% reported no chronic condition
- 27% reported one chronic condition
- 22% reported two or more chronic conditions.

The proportion of people reporting two or more chronic conditions increased with age in Queensland in 2017–18 (122):

- 6% of those aged 0–24 years
- 23% of those aged 25–64 years
- 51% of those aged 65 years and older.

Overall, patterns of multimorbidity were similar across the PHNs and QLD with some of variations that may resulted due to differing age structures as the data were not age-adjusted. See **Graph 17** below.

Graph 17: Proportion of selected long-term health conditions for 65+ population, crude prevalence for PHN, QLD, Australia (2017-18)



	None	One	One or more	Two or more
PHN*	23.6	27.1	74.9	48.3
QLD	20.9	27.3	78.5	51.4
Australia	20.1	29.3	80.1	50.8

Source: DOH (2019) Selected health characteristics for regional populations, Queensland 2017–18 from https://www.health.qld.gov.au/__data/assets/pdf_file/0031/862618/selected-health-characteristics-report.pdf
** The PHN proportions for "2 or more" and "1 or more" has a high margin of error, hence should be used with caution.*

7.2. Selected vulnerable elderly populations

7.2.1. Veteran's Health

In 2014–15, men aged 55 and over who had served in the Australian Defence Force (ADF) reported similar rates of chronic diseases to the non-serving population, including arthritis, back pain and problems, chronic obstructive pulmonary disease (COPD), diabetes, and diseases of the circulatory system. However, men aged 55–64 who had served had higher rates of mental and behavioural problems (1.8 times) and arthritis (1.6 times) than the non-serving population (86). In 2021, there were about 18,320 Department of ?Veteran's Affairs (DVA) clients in the PHN(123); that is about 10% of the older population in the region. These people can access free mental health care and free care for their service-related injury or condition.

Table 38: Number of DVA clients, by LGA, 2021

LGA	Total N of DVA Clients
Central Queensland	**2550**
Banana (S)	106
Central Highlands (R)	180
Gladstone (R)	732
Livingstone (S)	575
Rockhampton (R)	957
Woorabinda (S)	-
Wide Bay	**6209**
Bundaberg (R)	2357
Fraser Coast (R)	3695
North Burnett (R)	157
Sunshine Coast	**9561**
Gympie (R)	1297
Noosa (S)	1095
Sunshine Coast (R)	7169
PHN total	**18320**

Source: Department of Veteran's Affairs (2021) Statistics about the veteran population, from https://www.dva.gov.au/about-us/overview/research/statistics-about-veteran-population#local-government-area-lga-profile/

7.2.2. Homelessness

Very little information is available on elderly people who are homeless and live within the PHN. However, in Australia, one in 6 (or 16%) of all homeless people in 2016 were aged 55 and over (around 18,600 people)(101). Homelessness is a growing problem for older Australians and will likely continue to increase over time due to an ageing population and declining rates of home ownership among older people. Over the last decade, the number of older homeless people increased by 49%, with the largest changes measured in people aged 65–74 and 55–64(101). Older women are also a rapidly growing demographic in the homeless population-increasing by 31% from 2011 to 2016. The number of older Australians seeking assistance from specialist homelessness services grew by 8% on average per year between 2012–13 and 2016–17(101).

One in 5 (or 21%) of all 65 and over people who used specialist homelessness services had current mental health issues. This was mor common among 55 and over population; about one in 3 (30%) of those people experienced mental health problems (124).

Applying that proportion to the PHN population, we estimate that about 48,000 people aged 55 and over will experience homelessness and around 14,500 of those people will require mental health service. This suggests the need for increased availability of specialist homelessness services in the region.

7.2.3. Regional and Remote Community

People in regional and remote (including very remote) communities tend to have poorer health outcomes, and higher death rates. The main contributors to these higher rates among elderly population are coronary heart disease, other circulatory diseases, injury/ accidents and chronic obstructive pulmonary disease (86).

The LGAs within the PHN such as Banana, Central Highlands and North Burnett have 100% of the population living in outer regional, remote or very remote locations. Certain disadvantages such as having to take risk of driving through long distances, isolation and animals on roads and lack of access to general practitioners contributed to the increased rate of morbidity and mortality among rural/remote population.

Lower rates of access to primary care provider warrants getting to the nearest hospital for treatment. When hospitals are not nearby, people tend to not attend the care that they require. This results into delayed diagnosis and increased morbidity and mortality for people living in these communities. When we add to that the higher proportion of chronic conditions in people aged 65 and above, that explains the gap in quality of life and mortality between elderly living in metropolitan areas compared to rural/remote areas.

7.3. Service Status

7.3.1. Low urgency ED presentations

Low urgency ED presentations (cat 4 and 5) are the ones that could be possibly treated in a general practice environment. High rates of these within a specific area indicates the issues with either access, availability or affordability of primary care services within that area.

People aged 65 years and above (125):

- accounted for 11% of lower urgency ED presentations (312,000 presentations, at a rate of 80 per 1,000 people) compared to 45% for people aged 25 and under.
- were less likely (39% of presentations for this age group) to present to ED after-hours than people aged under 65. (48% of presentations for this age group)
- all hours ED presentations were highest in Maryborough (147.3 per 1,000 people), Gympie Cooloola (145.8 per 1,000 people) and Gladstone (137.2 per 1,000 people)
- within the PHN, after hours presentations were lower (28.7 per 1,000 people) compared to national data (31.2 per 1,000 people)
- after-hours ED presentations were highest in Gympie Cooloola (57.7 per 1,000 people), Maryborough (55.6 per 1,000 people), Gladstone/Hervey Bay (46 per 1,000 people) and Bundaberg (41.9 per 1,000 people)
- after-hours ED presentations were lowest in Noosa (4.1 per 1,000 people), Burnett (5.1 per 1,000 people) and Noosa Hinterland (7.2 per 1,000 people)

7.3.2. Aged Care

In Australia, aged care target population is defined as all people aged 65 years and over and Aboriginal and Torres Strait Islander Australians aged 50–64 years. Aged care is delivered through a variety of programs(126). Key programs and the extent it reached target population is presented below(127):

- ***Commonwealth Home Support Programme*** (CHSP) is the largest aged care program and provides entry-level services to help people remain independent at home and in the community. Nationally, around 839,373 clients received CHSP during 2019-20. Almost two-thirds (or 64%) of aged care consumers accessed basic support at home.
- ***Residential aged care*** is the second largest program, and it provides a range of care options and accommodation on a permanent or respite basis for people who are unable to continue living independently in their own homes. It supported around 244,363 people who received permanent residential aged care in 2019-20. In addition, about 66,873 people received residential respite care, of whom 37,548 (approximately 56 per cent) were later admitted to permanent care.
- ***Home Care Packages Program*** offers a tailored, coordinated package of care services to enable people to remain living at home. In 2019-2020, 173,743 people received care through a home care package, up from 97,200 in 2016–17.
- ***Transition Care***-This is the largest of the flexible care programs, providing support for people to return home after a hospitalisation.

Based on the Australian Census 2016 population overview, the following category (and %) of people who might need aged care services in the PHN (117).:

- 1.6% of indigenous people (50+) (Qld 2%; AUS 1.5%)
- 12.2% of people who require support for core activity (50+) (Qld 11.4%; AUS 11.7%)
- 22.9% of people who live alone (65+) (Qld 23.7%; AUS 24.3%)
- 24.3 % of people who were born outside of Australia (65+) (QLD 28.8%; AUS 36.8%)

- 3.6 % of people of whom preferred language is other than English (65+) (QLD 8.1%; AUS 17.6%)

Commonwealth Home Support Program (CHSP)

There were 142 organisations providing home support services across the PHN region in 2019-20.(117). Services under the program are provided on an on-going or episodic basis, depending on need.

The rates for home support recipients were:

- PHN: 339 per 1,000 people aged 70 years and older
- QLD: 340 per 1,000 people aged 70 years and older
- Australia: 290 per 1,000 people aged 70 years and older

Table below provides the proportion of people aged 70 years and over within the PHN, QLD and Australia wide.

Table 39: Number and proportion of people aged 70 years and older, 2019-20, PHN

	N or people aged 70 years and older	Total population	Proportion of 70+ population
PHN	126,548	876,789	14.4%
QLD	551,109	5,094,510	10.8%
AUSTRALIA	2,813,406	25,365,571	11.1%

Source: QGSO, 2020 Regional profiles from: ABS, Census of Population and Housing

Carer status data indicated that 88.4 % of the people receiving home support had no carer; only 11.6% had a carer (117).

Residential care, home care and transition care

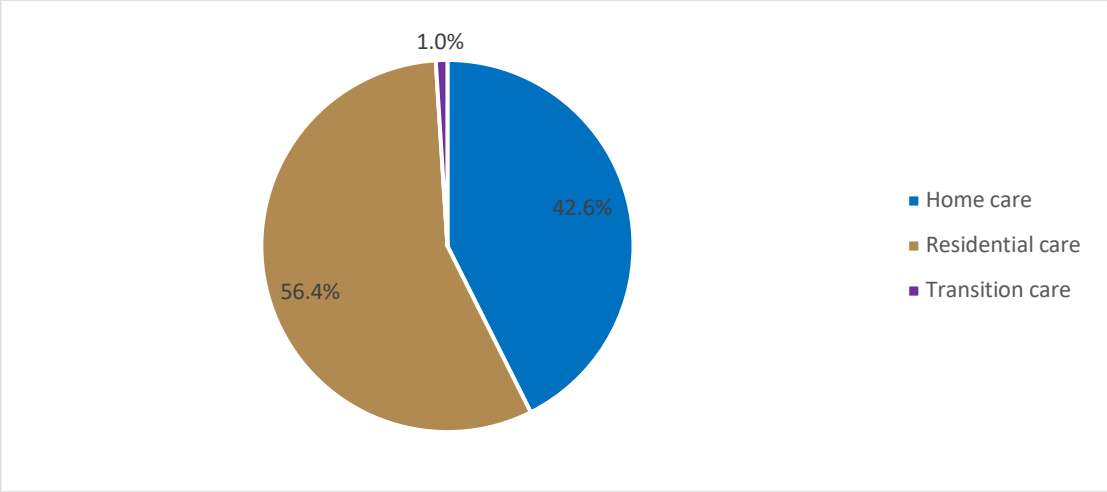
Residential aged care was most common type of aged care support in the PHN. As at 30 June 2020, the occupancy rate for residential care in the PHN region was 87.7% (QLD)(117).

As at 30 June 2020, in the PHN region there were (117):

- 101 RACFs offering services through 8,459 places (or 95.3% of the places in aged care)
- 131 services providing home care packages (places data were not available for home care)
- 3 services providing transition care linked to 162 places (1.8% of the total places in aged care)

Graph below shows the proportion of various aged care services (excludes home support programme) provided in the PHN as at 30 June, 2020.

Graph 18: Proportion of aged care services provided, PHN, 2020



Source: AIHW (2020) My Aged Care region tool, from https://www.gen-agedcaredata.gov.au/My-aged-care-region.

- Rate of places per 1000 people in residential aged care (70 years and above) was 65 within the PHN in 2020; this is lower compared to Qld (74) and national rate (75) despite the PHN's higher proportion of elderly people compared to the state and national figures. These rates have been steady since 2017.
- 53.4% of people using permanent residential care in our PHN had a diagnosis of dementia (as of 30 June 2020).

Rate of recipients per 1000 target population (70+) as of 30th June 2020: (117)

- For residential care: 57.5 for the PHN; QLD 64. In 2019, the rate was 39.9 for the PHN and QLD-43.5. The rates were significantly increased both within the PHN and QLD.
- For home care: 57.1 for the PHN; QLD 46.4. The rates were similarly low for PHN and QLD, both 26.4 in 2019.
- For home support: PHN and State rates were similar: 339 for the PHN; QLD 340. The rates were 233.5 (PHN) and 231.6 (QLD) in 2019.

The majority of people aged 65 and over in permanent residential aged care were in Major cities (70%), followed by Inner Regional or Outer regional (30%) and Remote or Very remote areas (0.6%). There are fewer residential aged care places available in Remote and Very remote areas, with 38% of facilities in Remote areas and 75% in Very remote areas having fewer than 20 places across Australia (86).

7.3.3. National Bowel Cancer Screening Program

The National Bowel Cancer Screening Program (NBCSP) aims to reduce morbidity and mortality from bowel cancer by screening the eligible target population (50 to 74 years) for early detection or prevention of the disease.

Bowel cancer screening national program data indicated (128):

- Almost 2.5 million of the 5.7 million people aged 50-–74 who were invited to screen in 2018–2019 participated. This was a participation rate of 44%.
- Participation was higher among women (46% of all women invited) than men (42%).

The screening rates within the PHN 45.6% were slightly higher compared to Qld (41.8%).The rates were (129):

- Highest in WBHHS region (47.2%) followed by SCHHS (46.4%) and CQHHS (41.2%)
- Lowest rates were reported in Central highlands (36%) and Gladstone (38.3%) LGAs.

7.3.4. Palliative Care

With the growth and ageing of Australia's population, and an increase of chronic and generally incurable illnesses, the types of patient groups requiring palliative care has widened(130).

National palliative care data informed that in 2019-20(130):

- There were 244,327 people living in residential aged care in Australia—of whom 1 in 77 (or 1.3%) had an Aged Care Funding Instrument (ACFI) appraisal indicating the need for palliative care.
- Based on ACFI appraisals, the need for palliative care increased with age— from less than 10% for those aged under 70 to just over 50% of people aged 85 years and over.
- The population rate of appraised need for palliative care among people living in residential aged care was highest in Inner regional areas (19.4 per 100,000 population) followed by Outer regional (13.6) and Major cities (11.0).
- Almost 3 in 10 (27.4%) people in residential aged care with an appraised need for palliative care had been diagnosed with cancer. The types of cancer most often recorded were lung cancer (17.8%) and prostate cancer (13.7%).

Queensland Health admissions data (2019) indicated that the rates of palliative care admissions per 100,000 population were highest in WB and SC(131):

- WB: Fraser Coast (366, more than 1.5 times QLD 236), North Burnett (282) and Bundaberg (253) LGAs
- SC: Gympie (278) and Sunshine Coast (259) LGAs.

The PHN community health survey involved 118 (118/612 or 20%) respondents who were aged 65 years and over. This is proportionate to the older people in the PHN region. The most commonly accessed services included the following (17):

- Over a third of respondents aged 65 years or older (39%) felt they needed to see GP / doctor in the last 12 months but did not go. The main reasons for this cohort for not seeing a GP was that they could not get an appointment and no doctor or GP nearby.
- Approximately a third of respondents aged 65 years or older felt they needed to see specialist, dental professional or allied health professional but did not go due to unavailability of the services in the area.
- About 14% of respondents aged 65 years or older felt they needed to see a mental health specialist, but could not make an appointment.

Responses received from older people to a question “What is one thing you would like to change about your community to make it the healthiest place it can be?” included the following (17):

- Better transport options for elderly people/patients (Bundaberg)
- Affordable exercise opportunities for older people (Gympie, Noosa)
- Access to better aged care facilities (Noosa, rural localities of Gympie such as Cooloola SA2, Kilkivan SA2)

Sunshine Coast respondents highlighted the need to improve access to better aged care facilities.

The PHN stakeholders provided their views on the adequacy of service provision to meet older people’s health need(18). The findings indicated that about 28% of respondents agreed that there were adequate

numbers of the services for older people, whereas half the respondents did not agree to the statement. The proportion of disagreed respondents were similar at around 47-50% across all three regions of the PHN.

- The respondents were also asked to assess how accessible and appropriate were health care services for older people. About 40% of the respondents indicated that the services for this population group were not accessible or appropriate; 20% were unsure and only about one third felt that the services were accessible and appropriate (18).
- On a positive note, older people connecting with others in the community through social activities, community events and friendship were perceived as one of the top five community strengths (ranked as 4th commonly mentioned strength) in the PHN region(18).

Summary of Issues

- *In 2019, the percentage of people aged 65 years and over (20.6%) in the PHN was higher than for the state overall (15.7%)*
- *Noosa (13.2%), Banana (12.1%), Sunshine Coast (11.8%), and Livingstone (11%) had the highest proportion of senior's health card holders among 65+ population in the PHN*
- *Nationally, for people aged 65-74 years, the leading causes of death were: lung cancer followed by coronary heart disease, COPD, colorectal cancer and cerebrovascular disease.*
- *About 49% (or 377,300 people) Queenslanders aged 65 years or older were living with a disability in 2018. When this is applied to the PHN, an estimated about 90,000 older people above the age of 65 in the PHN region who might have some types/levels of disability*
- *About 75% of PHN residents over 65 years of age have one or more long-term health conditions (QLD 78.5%).*
- *For people aged 60 years and over within the PHN, % of people with three or more chronic conditions was higher compared to national % (29%) in 17 SA2 areas within the PHN (>29%): the highest % was in Mount Morgan (34.8%), Gympie-North (34.3%), Berserker (33.3%), Lakes Creek (33.1%) and Rockhampton (32.9%).*
- *Rockhampton, Banana, Sunshine Coast, North Burnett and Bundaberg LGAs had the highest rates of dementia in the PHN region. My Aged Care data indicates that 50.6% of people using permanent residential care within the PHN (as of 30th June 2019) had a diagnosis of dementia*
- *The rate of falls within the PHN was significantly higher compared to Qld rate (7,704 ASR per 100,000 people) and significantly higher in SC HHS (ASR 8,549 per 100,000) and WB HHS (ASR 8,135 per 100,000).*
- *Low urgency (Cat 4 and 5) all hours ED presentations for people aged 65 years and above were highest in Maryborough (147.3 per 1,000 people), Gympie Cooloola (145.8 per 1,000 people) and Gladstone (137.2 per 1,000 people)*
- *After hours ED presentations were highest in Gympie Cooloola (57.7 per 1,000 people), Maryborough (55.6 per 1,000 people), Gladstone/Hervey Bay (46 per 1,000 people) and Bundaberg (41.9 per 1,000 people*
- *As at 30 June 2020, in the PHN region there were 101 RACFs offering services through 8,459 places (or 95.3% of the places in aged care); 131 services providing home care packages; 3 services providing transition care linked to 162 places (1.8% of the total places in aged care)*

8. Access to Health System and Use of Health Services

To provide effective health care, health services must be accessible, responsive, and culturally appropriate. Culturally respectful health care services, Patient experience of health care and Equity in access to health care services. A large amount of data being collected on key indicators however this data is rarely available on the PHN level hence it is difficult to report on the proportion of clients who used various MBS items or who's results regarding primary care check-ups (blood pressure recorded) were reported.

8.1. Health System Performance/Service Needs

8.1.1. 13Health data

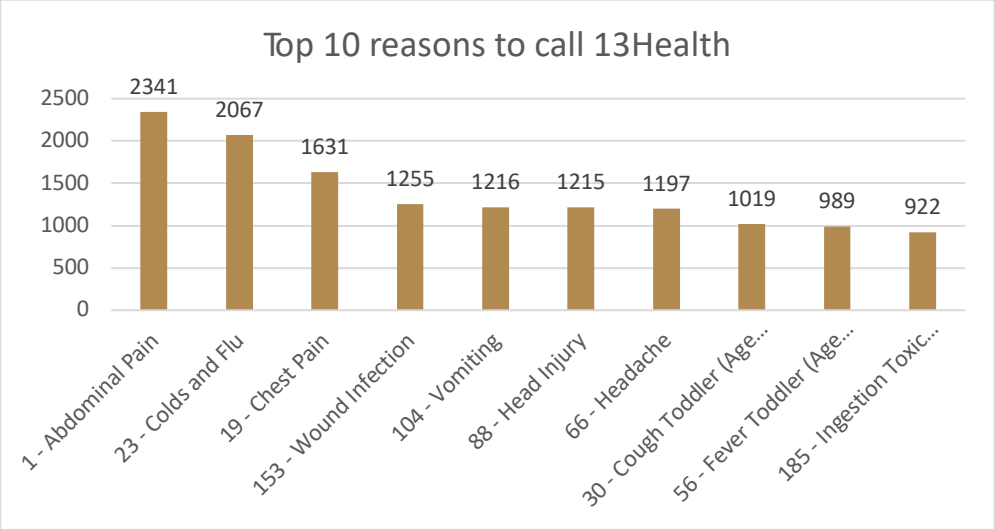
13 HEALTH (**13 43 25 84**) is a confidential phone service that provides health advice to Queenslanders. Individuals can phone and talk to a registered nurse 24 hours a day, 7 days a week for the cost of a local call.

During the period July 2020 to June 2021. Within the PHN,

- a total of 48,610 calls were made to 13Health
- around for 5% calls, gender was not reported while 58% of the calls came from females
- Highest number of concerns were addressed for people aged 25–64-year-old (n=20,316, 42%) followed by 0-14 age group children (n=16,851, 35%)

Top ten reasons to call the 13Health are presented in the graph below and age-distribution is included in the table.

Graph 19: Top ten reasons to call, all calls, July 2020-June 2021



Source: *Queensland Health (2021) 13HEALTH call data, 2020-21 financial year, Queensland Department of Health, QLD PHN Planning and Evaluation Collaborative.*

Table 40: Top five reasons to call by age groups, the PHN, Jul 2020-Jun 2021

Protocol Name	Age category				
	0-14	**15-24**	**25-64**	**65+**	**Grand Total**
1 - Abdominal Pain	1	674	1457	209	2341
104 - Vomiting	23	368	672	153	1216
153 - Wound Infection	251	177	639	188	1255
19 - Chest Pain	56	294	1046	235	1631
23 - Colds and Flu	1	357	1479	230	2067
Grand Total	332	1870	5293	1015	8510

Source: *Queensland Health (2021) 13HEALTH call data, 2020-21 financial year, Queensland Department of Health, QLD PHN Planning and Evaluation Collaborative.*

Within the PHN top 5 reasons differed between the ares and the LGAs. Calls to address wound infection were amongst top 5 reasons. Wound infection might also be a secondary diabetes complication and is possibly avoidable with better diabetes control and self-management practices.

From top five reasons within each region wound infection related calls were

- 17.1% from Wide Bay area compared to 14.5% from SC area and 12.8% from CQ area.
- Highest % of calls were from North Burnett LGA (28.6%), followed by Fraser Coast (17.0%) and Bundaberg LGA (16.8%)

Recommended care by trained nurses indicates the nature of the calls that required urgent ED attention. The distribution of recommended care by top five reasons are summarised in the table below. Around 12,000 calls were made by people that required to go to the ED and 13,000 calls were made by people that required to see a GP.

Table 41: Top five recommended care by LGAs

PHN area	LGAs	Final Recommended Care Level					
		1120 - Patient needs to attend ED	**1210 - Patient needs to attend ED (UC)**	**1220 - See GP (UC)**	**1420 - See GP (GP1)**	**1510 - See GP (GP2)**	**Grand Total**
Central Queensland	Banana	64	43	23	49	39	218
	Central Highlands	257	166	93	167	117	800
	Gladstone	588	326	221	441	316	1892
	Livingstone	271	166	89	179	158	863
	Rockhampton	953	511	396	609	494	2963
	Woorabinda	n/a	n/a	n/a	n/a	n/a	n/a
Central Queensland Total		**2133**	**1212**	**822**	**1445**	**1125**	**6737**
Sunshine Coast	Gympie	481	324	220	308	275	1608
	Noosa	274	140	126	246	189	975
	Sunshine Coast	2655	1429	1307	2024	1516	8931
Sunshine Coast Total		**3410**	**1893**	**1653**	**2578**	**1980**	**11514**
Wide Bay	Bundaberg	1004	546	402	635	467	3054
	Fraser Coast	1056	600	449	701	492	3298
	North Burnett	35	15	16	26	16	108
Wide Bay Total		**2095**	**1161**	**867**	**1362**	**975**	**6460**
Grand Total		**7638**	**4266**	**3342**	**5385**	**4080**	**24711**

Source: *Queensland Health (2021) 13HEALTH call data, 2020-21 financial year, Queensland Department of Health, QLD PHN Planning and Evaluation Collaborative.*

8.1.2. Use of MBS services

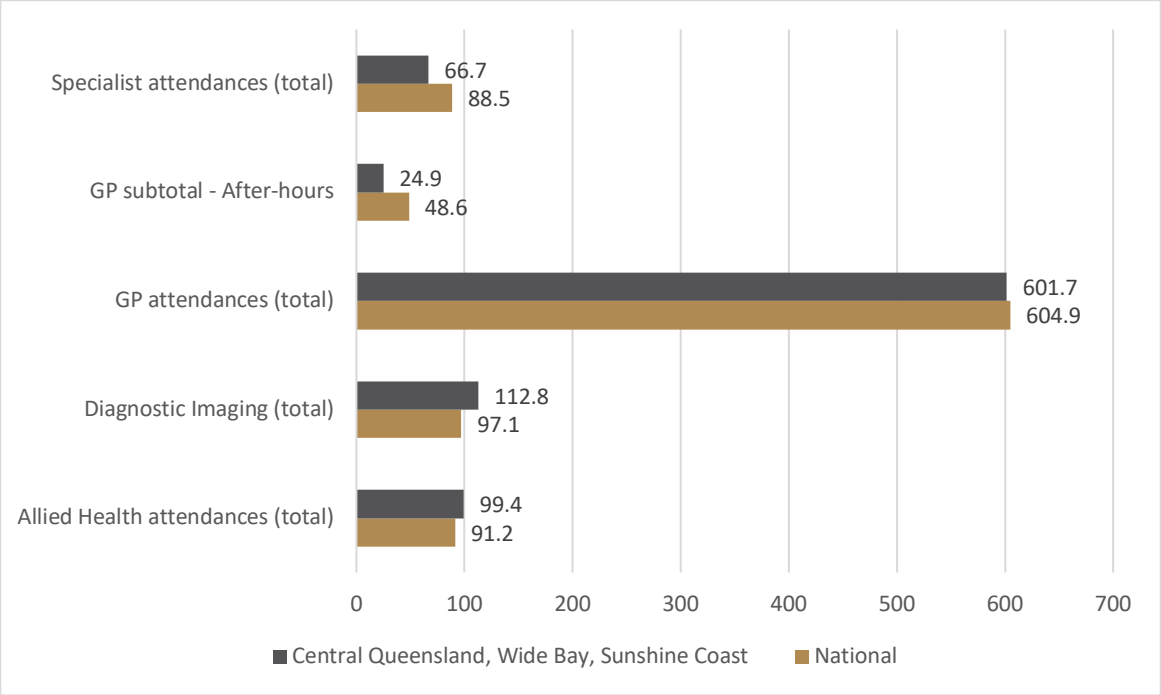
Medicare-subsidised services provided in non-hospital settings enable eligible Australians to use a wide range of general practice, diagnostic, allied health, specialist, and nursing and Aboriginal health worker services at no or partial cost.
For the PHN, there was growth in Medicare-subsidised service use between 2013-14 to 2018–19, for people who had a GP attendance: 614.4 per 100 people in 2013-14 to 644.9 per 100 people in 2018-19.

The age-standardised rates for various services differed within the PHN. The PHN rankings from 31 PHNs in the nation for rates of use of MBS services were:(132)

- 5th highest for total allied health attendances
- 4th highest for diagnostic imaging
- 13th highest for total GP attendances
- 9th lowest for GP after hour services
- 6th lowest for specialist attendances

The graph below compares the PHN rates with national rates.

Graph 20: Use of MBS services ASR per 100 people within the PHN, 2018-19



Source: (AIHW) Australian Institute of Health and Welfare (2020) Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2018–19. Cat. no. PHC 4. Canberra: AIHW., https://www.aihw.gov.au/reports/primary-health-care/medicaresubsidised-health-local-areas-2019.

The SA3 level data for 2018-19 indicates that (132)

- the PHN rate (0.2 per 100 people) for asthma cycle plans were similar to national rates (0.3 per 100 people). Lowest rate of asthma plans were in Gladstone (0.07 per 100) and highest were in Sunshine Coast SA3 (0.5 per 100).
- Diabetes annual cycle of care plans rate was slightly higher within the PHN (1.3 per 100) compared to Australia (1.1). Highest rates were reported in Maryborough 2.5) and in Bundaberg (2.2).
- Similarly rate of use of podiatry services was higher in Bundaberg (17.6), Maryborough (17.1), Hervey Bay (17.8), Gympie – Cooloola (18.4) and Caloundra (18.7) compared to Australia (13.8).
- Rate of total allied health MBS services was higher within the PHN (112.59) compared to Australia (96 per 100). This rate was >120 per 100 people for Maryborough, Hervey Bay, Buderim, Caloundra, Maroochy, Nambour, Noosa, Noosa Hinterland and Sunshine Coast Hinterland SA3 regions.
- All the SA3 regions except Biloela (11.7), Central Highlands (13.3) and Gladstone (12.2) had higher rates of use of nursing and aboriginal health worker MBS services compared to Australia (14.0 per 100 people)
- Total GP attendances rate within the PHN (664.9) was slightly higher compared to the national rate (631.6 per 100 people). This rate was lowest for Central Highlands SA3 (515.2) while highest in Hervey Bay (782.3) within the PHN.
- Effectiveness of the health system can be seen from the proportion of people that have active asthma plans and diabetes management plans. Central highlands had lower rate of diabetes management plans and Gladstone had lower rates of Asthma management plans compared to Qld rates.

Details of this data are included in the **Table 42** and **Table 43** below. The Graph 21 below shows the percentage of people who visited a GP in 2018–19 ranged from 76% of people living in the Northern Territory PHN area to 94% in the South Western Sydney PHN area. This pattern remains unchanged since 2013–14, with the Northern Territory PHN area having the lowest percentage of people visiting a GP (72%) and the South Western Sydney PHN area having the highest percentage (94%). The PHN ranks high amongst 31 PHNs and ranks top 6th in percentage of GP attendances.

Graph 21: Percentage of people who had a Medicare-subsidised GP attendance, by Primary Health Network (PHN) area, 2013–14 and 2018–19

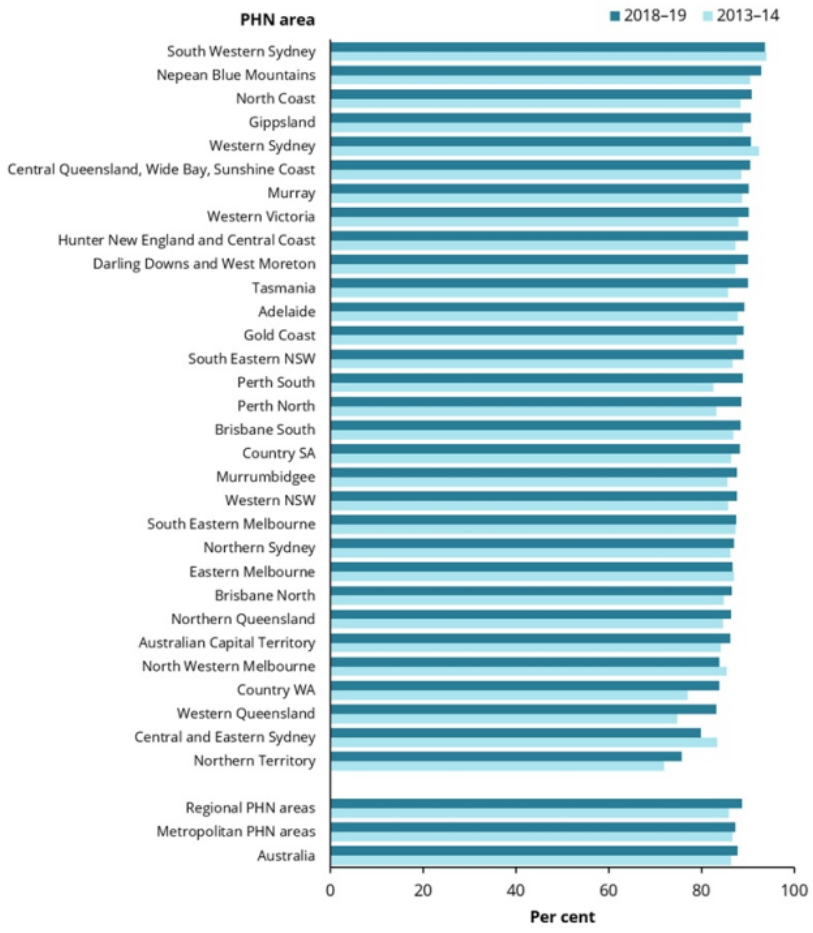


Chart: AIHW. *Sources:* AIHW analysis of Department of Health, MBS claims data; ABS ERP.

Source: (AIHW) Australian Institute of Health and Welfare (2020) Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2018–19. Cat. no. PHC 4. Canberra: AIHW., https://www.aihw.gov.au/reports/primary-health-care/medicaresubsidised-health-local-areas-2019

Table 42: All persons, 2018-19, selected allied health MBS services per 100 people SA3

	Total Population, 2020	Asthma Cycle of Care PIP	Diabetes Education	Diabetes Mellitus Annual Cycle of Care PIP	Allied Health attendances (total)	Podiatry	Nursing and Aboriginal Health workers
National		0.25	0.42	1.07	96	13.83	14.03
The PHN	923,354	0.23	1.01	1.29	112.59	13.77	24.96
Biloela	14,001	n/a	1.18	0.64	53.86	2.94	11.72
Central Highlands (Qld)	29,722	n/a	1.32	0.22	55.32	1.57	13.32
Gladstone	63,861	0.07	2.15	0.77	78.55	8.73	12.21
Rockhampton	120,616	0.08	2.46	1.03	88.6	10.57	23.91
Bundaberg	91,215	0.29	2.1	2.21	110.33	17.64	25.14
Burnett	49,780	0.18	0.77	1.3	80.24	10.12	26.48
Hervey Bay	61,168	0.33	n/a	1.26	130.2	17.84	27.69
Maryborough	47,102	0.34	n/a	2.52	126.69	17.05	27.22
Buderim	60,845	0.21	0.17	0.96	122.8	14.14	28.81
Caloundra	94,253	0.12	0.32	1.19	137.83	18.74	27.14
Gympie - Cooloola	52,840	0.28	0.13	1.93	116.82	18.39	31.1
Maroochy	62,424	0.2	0.14	0.93	122.65	12.1	27.66
Nambour	48,439	0.5	0.17	1.28	131.5	13.95	27.72
Noosa	46,736	0.22	0.11	0.97	127.74	12.61	22.91
Noosa Hinterland	24,287	0.34	0.1	1.36	127.9	12.74	21.39
Sunshine Coast Hinterland	56,065	0.48	0.36	1.23	133.16	14.9	27.12

Source: (AIHW) Australian Institute of Health and Welfare (2020) Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2018–19. Cat. no. PHC 4. Canberra: AIHW., https://www.aihw.gov.au/reports/primary-health-care/medicaresubsidised-health-local-areas-2019. Coded Significantly **lower** and **higher** compared to Queensland

Table 43: All persons, 2018-19, selected GP MBS services per 100 people SA3

Location	GP attendances (Total)	GP After-hours (non-urgent)	GP After-hours (urgent)	GP Chronic Disease Management Plan	GP Health Assessment	GP Multidisciplinary Case Conference	GP Telehealth (patient-end support)
National	631.6	44.23	4.78	37.59	4.31	0.32	0.21
The PHN	664.97	19.3	6.25	48.25	6.19	0.23	0.66
Biloela	569.12	n/a	n/a	30	5.62	0.15	0.64
Central Highlands (Qld)	515.19	n/a	n/a	32.78	7.99	0.21	1.54
Bundaberg	650.22	8.58	12.22	48.62	6.91	0.12	1.1
Burnett	605.21	19.66	3.82	37.49	6.56	0.29	1.47
Gladstone	559.65	16.11	7.75	31.87	4.65	0.05	1.98
Rockhampton	624.66	17.25	7.28	41.03	7.01	0.1	0.6
Hervey Bay	782.33	26.84	12.7	46.39	8.46	0.09	1.11
Maryborough	790.59	21.87	5.51	52.02	8.16	0.13	1.76
Gympie - Cooloola	621.13	9	1.3	52.28	5.54	0.41	0.57
Buderim	642.53	24.16	4.79	47.2	5.76	0.23	n/a
Caloundra	752.11	24.14	3.93	55.72	5.92	0.2	0.04
Maroochy	667.47	26.84	4.62	50.43	4.83	0.33	0.05
Nambour	685.42	23.08	3.23	57.49	5.32	0.29	0.22
Noosa	659.59	21.81	1.87	55.96	4.94	0.68	n/a
Noosa Hinterland	643.67	14.87	1.08	61.02	5.42	1.06	n/a
Sunshine Coast Hinterland	698.88	23.77	1.77	56.48	5.05	0.2	0.12

Source: (AIHW) Australian Institute of Health and Welfare (2020) Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2018–19. Cat. no. PHC 4. Canberra: AIHW., https://www.aihw.gov.au/reports/primary-health-care/medicaresubsidised-health-local-areas-2019.Coded Significantly **lower** and **higher** compared to Queensland

8.1.3. Hospitalisations: Lifestyle related

Majority of the lifestyle related hospitalisations are avoidable.

In 2018-19 (32)

- The PHN had significantly higher ASR of lifestyle related hospitalisations compared to Qld (2,302 compared to 1,991 ASR per 100,000 people)
- This rate was significantly higher for Wide Bay HHS area (2,644) and Central Queensland HHS area (2,614)
- The rate was similar to Qld for SCHHS area (1,992)

8.1.4. Hospitalisations and causes for various age groups

People experience different health issues at different times of their lives, so the reasons for hospitalisations vary by age and by sex. For example, in 2018–19:(133)

- Babies and children under 5 were hospitalised most often for respiratory illnesses such as asthma, whereas patients aged 5–14 were most often hospitalised for diagnoses related to injury and poisoning.
- Males aged 15–24 were also most often hospitalised for diagnoses related to injury and poisoning, however, females in this age group were most often hospitalised for diagnoses related to pregnancy and childbirth.
- Females aged 25–44 were also predominantly hospitalised for pregnancy and childbirth, whereas males of that age were hospitalised for other factors influencing health status (this includes examinations, investigations, observation, evaluation and other health management).
- Adults aged 45–64 were most often hospitalised for other factors influencing health status and digestive system diseases.
- For people aged 65 and over, hospitalisation for other factors influencing health status, cancer and musculoskeletal conditions are the most common reasons for hospitalisation.

8.1.5. Emergency department presentations

Emergency departments are an essential component of the health care system. In Australia, there are 294 public hospitals that have purpose-built emergency departments, which are staffed 24 hours a day and provide care to patients who require urgent medical, surgical or other attention. Emergency department activity is measured by the number of presentations. In 2018–19, there were 8.4 million presentations to emergency departments—or 22,900 each day nationally. This has increased from an average of 20,200 presentations each day in 2014–15—an increase of 3.2% a year. (133)

When a patient presents to the emergency department, they are assigned a triage category by a registered nurse or medical practitioner. The triage category allocated reflects the urgency of the patients' need for medical and nursing care. These are five categories: Resuscitation (should be seen immediately), Emergency (within 10 in), Urgent (within 30min), Semi-urgent (within 60min) and Non-urgent (within 2 hours). In 2018–19, one-quarter (25%) of presentations were for injury or poisoning. (133)

It is understood that some of the ED presentations can be avoided if the patients are seen timely in the general practice.

Low urgency care

ED presentations that are lower urgency are sometimes used as a proxy measure of access to primary health care. Higher presentation rates may suggest a lack of access to GPs or other primary health services, which may have been better placed to manage a person's health condition.

Lower urgency ED presentations are defined as presentations at formal public hospital EDs where the person:

- had a Type of visit to the ED of Emergency presentation
- was assessed as needing semi-urgent (triage category 4: should be seen within 1 hour) or non-urgent care (category 5: should be seen within 2 hours)
- did not arrive by ambulance, or police or correctional vehicle
- was not admitted to the hospital, was not referred to another hospital, and did not die.

The data on the PHN and SA3 areas is available for various age groups. Low urgency care for people aged 65 and over is included in the Older Person's Health Needs assessment part.(134) **(see Table 44 and**

Graph 22 and Graph 23)

Age-standardised rates (ASR per 1000 population) indicate that all low urgency ED presentations rates are slowly declining within the PHN since 2015-16. In 2018-19 there rates are:

- 123.6 for the PHN compared to 119.8 nationally for all-hours low urgency presentations
- 68.8 for the PHN compared to 62.2 nationally for in-hours low urgency presentations
- 54.9 for the PHN compared to 57.1 nationally for after-hours low urgency presentations

Within the PHN for 2018-19, low urgency ED presentations within three sub-groups are included below:

Rate of in-hours low urgency ED presentations (per 1000 population):

- Highest rate was in Gympie-Cooloola (131.9), Maryborough (120.3), Gladstone (115) and Bundaberg (112); (National 61.6)
- Consistently higher rates across all the age groups were evident for Bundaberg, Gladstone. Gympie-Cooloola and Maryborough

Rate of after-hours low urgency ED presentations (per 1000 population):

- Highest rate was in Maryborough (88.8), Bundaberg (83.3), Gladstone (75.1) and Hervey Bay (72.8) (National 55.8)
- Consistently higher rates across all the age groups were evident for Bundaberg, Gympie-Cooloola, Hervey Bay and Maryborough

Rate of all-hours low urgency ED presentations (per 1000 population):

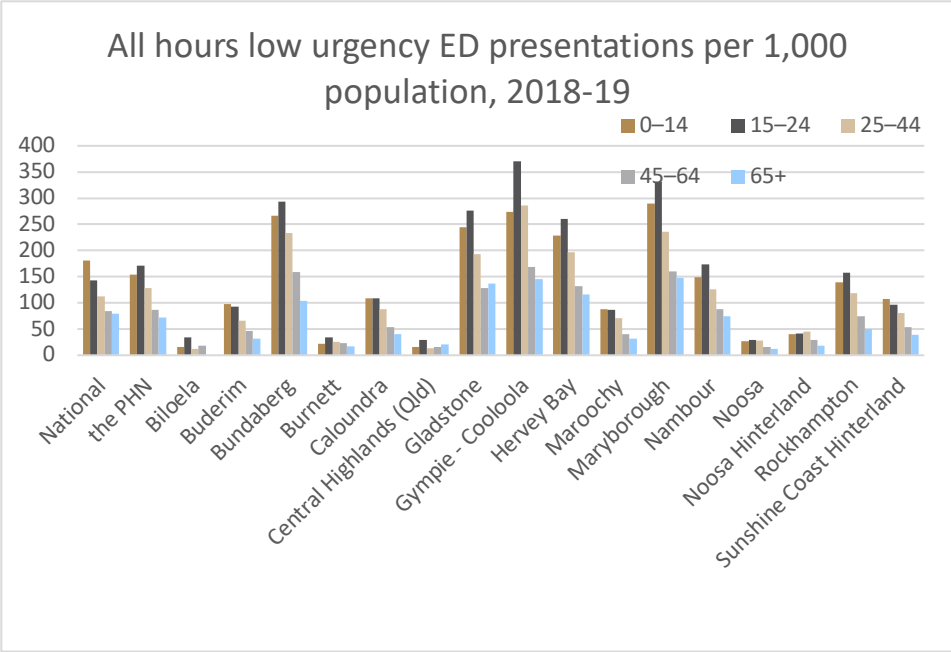
- Highest rate was in Gympie-Cooloola (226), Maryborough (209.1), Bundaberg (196.1), Gladstone (191) and Hervey Bay (168.9) (National 117.4)
- Consistently higher rates across all the age groups were evident for Bundaberg, Gladstone, Gympie-Cooloola, Hervey Bay and Maryborough

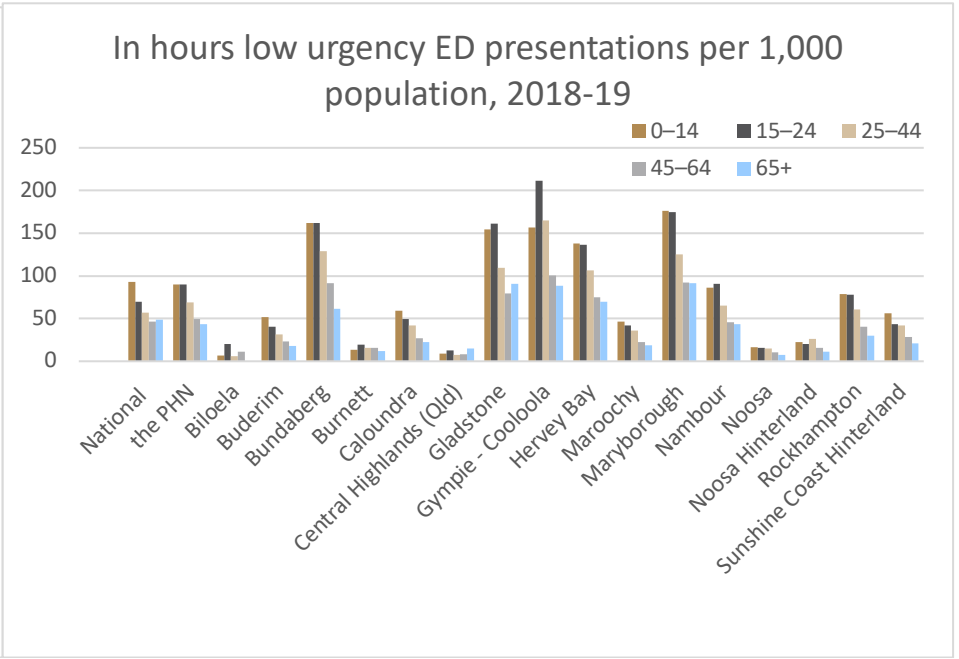
Table 44: Low urgency ED presentations, the PHN and SA3, 2018-19

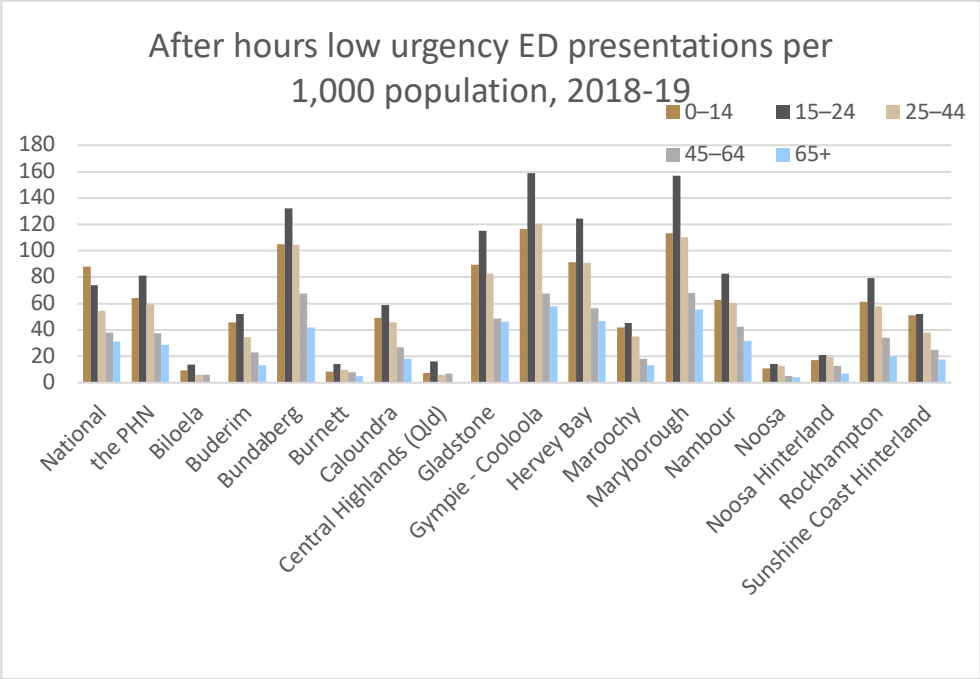
	All hours low urgency		In hours low urgency		After hours low urgency	
	per 1,000 population	Number	per 1,000 population	Number	per 1,000 population	Number
Australia	117.4	2,934,424	61.6	1,540,668	55.8	1,393,756
the PHN	115.6	99,741	64.9	56,012	50.7	43,729
Biloela	16.0	228	8.9	127	7.1	101
Central Highlands (Qld)	16.9	502	9.1	270	7.8	232
Gladstone	191.0	12,032	115.9	7,302	75.1	4,730
Rockhampton	105.9	12,567	56.5	6,710	49.3	5,857
Bundaberg	196.1	17,667	112.7	10,159	83.3	7,508
Burnett	23.4	1,164	15.0	745	8.4	419
Hervey Bay	168.9	10,052	96.1	5,720	72.8	4,332
Maryborough	209.1	9,622	120.3	5,534	88.8	4,088
Buderim	64.8	3,835	32.3	1,913	32.5	1,922
Caloundra	74.6	6,571	37.7	3,323	36.9	3,248
Gympie - Cooloola	226.0	11,639	131.9	6,796	94.0	4,843
Maroochy	58.8	3,566	30.8	1,868	28.0	1,698
Nambour	116.3	5,356	63.1	2,905	53.2	2,451
Noosa	20.7	933	12.3	556	8.4	377
Noosa Hinterland	32.8	767	18.4	429	14.5	338
Sunshine Coast Hinterland	70.3	3,716	36.5	1,927	33.8	1,789

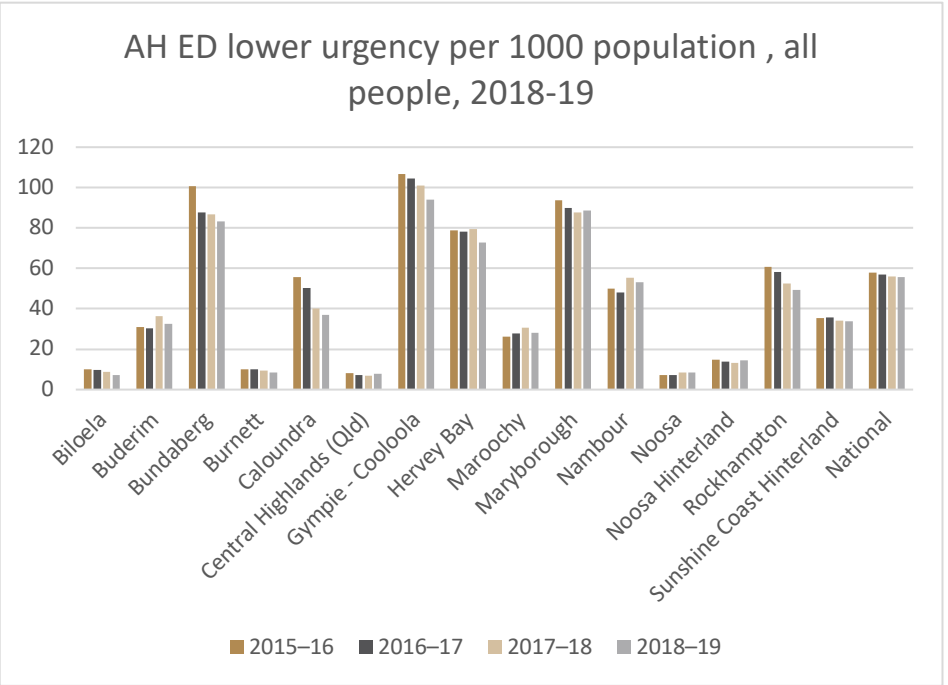
Source: (AIHW) Australian Institute of Health and Welfare (2020) Australian Institute of Health and Welfare (AIHW) analysis of the National Non-admitted Patient Emergency Department Care Database (NNAPEDCD), 2015–16, 2016–17, 2017–18 and 2018–19.

Graph 22: Low urgency ED presentations, PHN and SA3, all and within age groups, 2018-19

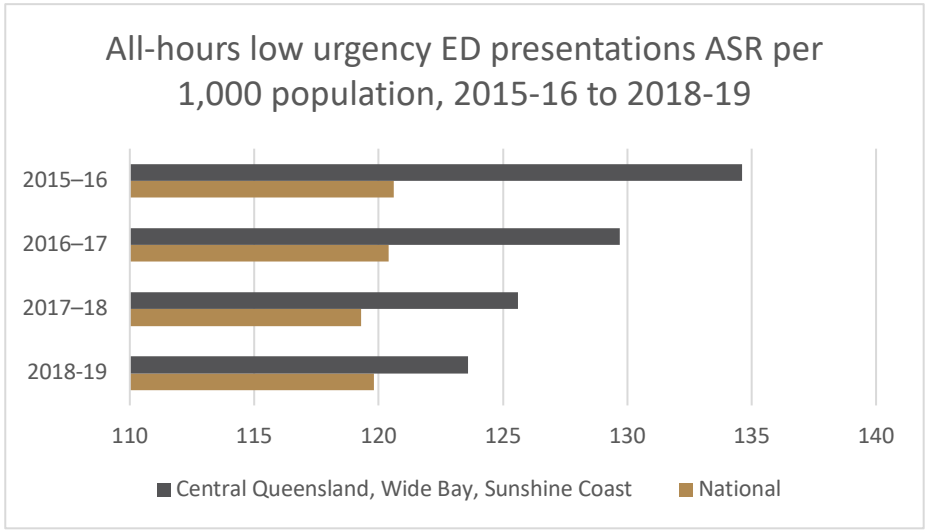


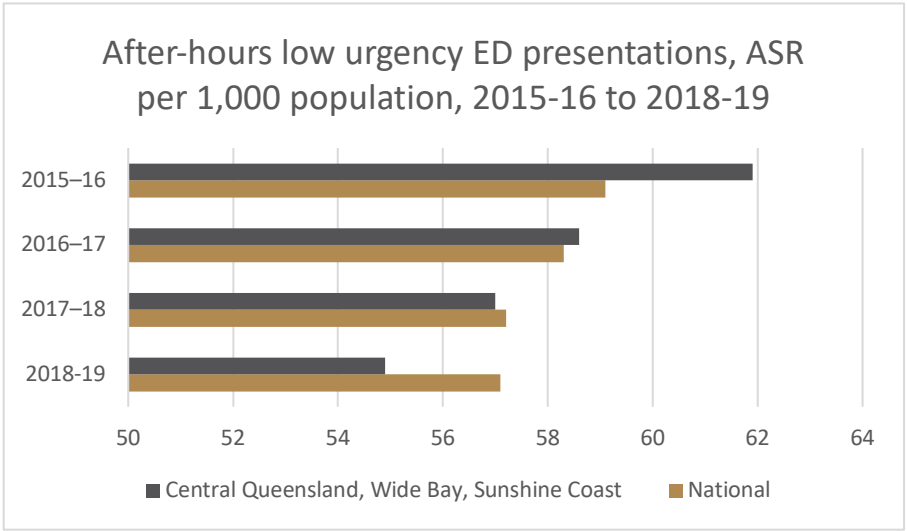


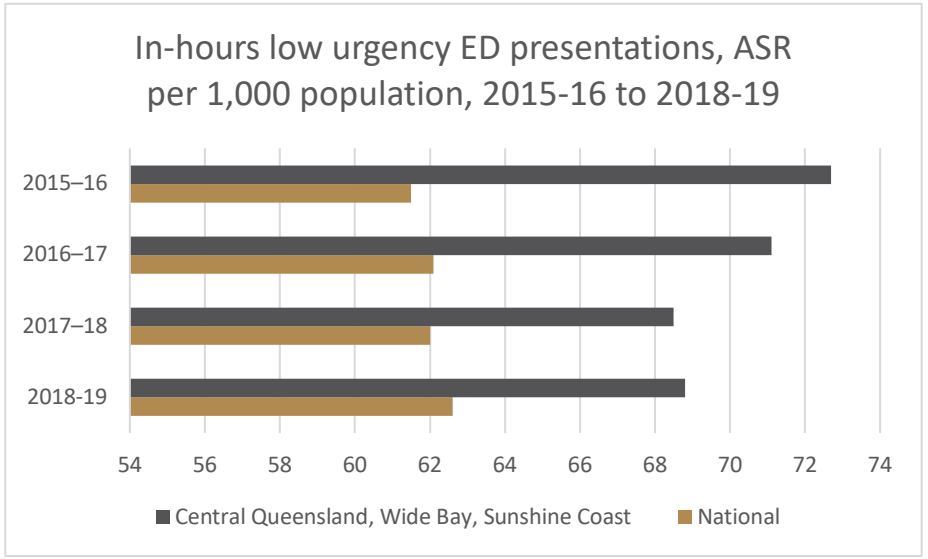

After hours low urgency ED presentations per 1,000 population, 2018-19
0–14
15–24
25–44
45–64
65+
180
160
140
120
100
80
60
40
20
0
National
the PHN
Biloela
Buderim
Bundaberg
Burnett
Caloundra
Central Highlands (Qld)
Gladstone
Gympie - Cooloola
Hervey Bay
Maroochy
Maryborough
Nambour
Noosa
Noosa Hinterland
Rockhampton
Sunshine Coast Hinterland


AH ED lower urgency per 1000 population , all people, 2018-19
120
100
80
60
40
20
0
Biloela
Buderim
Bundaberg
Burnett
Caloundra
Central Highlands (Qld)
Gympie - Cooloola
Hervey Bay
Maroochy
Maryborough
Nambour
Noosa
Noosa Hinterland
Rockhampton
Sunshine Coast Hinterland
National
2015–16
2016–17
2017–18
2018–19

Graph 23: Changes overtime in low urgency ED presentation, the PHN compared to National, ASR per 1000 people, 2015-16 to 2018-19







8.1.6. Potentially Preventable hospitalisations related to selected chronic conditions and Total Chronic conditions

Potentially preventable hospitalisations (PPH) are used as a measure of access to timely, effective and appropriate primary and community health care. Classifying a hospitalisation as "potentially preventable" does not mean that the hospitalisation itself was unnecessary, it means that optimal management at an earlier stage might have prevented the patient's condition worsening to the point where they needed hospitalisation. Nationally 10% of all hospital bed days in 2017-18 were for PPHs and nearly half of all PPH were in older people mostly due to chronic conditions. The potentially preventable hospitalisations (PPH) indicator is a proxy measure of primary care effectiveness. PPH are certain hospital admissions that potentially could have been prevented by timely and adequate health care in the community. Higher PPH indicates inefficient and ineffective primary care.

Note that more information on: (a) vaccine preventable PPHs are added in the Maternal and Child Health Section; (b)Chronic conditions related PPHs are added to Chronic Conditions section and; (c) PPHs in the 65 years and above age group are added to the Older People's Health section.

Queensland Health data (2019-20) indicates that (135)

- From 496,033 total patient separations, around 42,044 were potentially preventable separations within the PHN
- Within the HHS areas:
    - 7,222 from 66,035 separations within CQHHS were PPHs. Highest numbers were within the age groups 60 to 64 years (6,525) and 70 to 74 (6,297).
    - 8,989 from 80,357 separations within WBHHS were PPHs. Highest numbers were within the age groups 70 to 74 years (9,522) and 75 to 80 years (8,896)
    - 12,130 from 132,676 separations within SCHHS were PPHs. Highest numbers were within the age groups. Highest numbers were within the age groups 70 to 74 years (13,434) and 75 to 79 years (13,415)
- Around 50% of these (n=23,892) were related to chronic conditions mainly associated with diabetes complications (10,995) followed by COPD (3,922) and congestive cardiac failure (3,128)
- From 2,253 PPHs for Indigenous people within the PHN, highest number separations were for diabetes complications (549), followed by COPD (156) and Iron deficiency anaemia (104).
- Total acute PPH separations were highest in 0–4-year age group (1,834) followed by 85+ (1,552) and 75 to 79 age group (1,189)
- Vaccine preventable conditions are listed as pneumonia and influenza (vaccine-preventable) and other conditions (e.g. childhood vaccine preventable conations, HepB) (136). The childhood vaccination coverage within the PHN is nationally comparable except SA3 areas within the Sunshine Coast HHS area. Although vaccine preventable diseases include other vaccines than what's covered in childhood immunisations. Most of the PPH for vaccine-preventable conditions in 2017-18 were due to influenza. Total vaccine preventable PPH separations were highest in Sunshine Coast University Hospital (647), followed by Rockhampton hospital (329) and Bundaberg Base Hospital (277)
- Total acute PPH separations were highest in Sunshine Coast University Hospital (3,559), followed by Rockhampton hospital (1,483) and Bundaberg Base Hospital (1,366) and Hervey Bay Hospital (1,282)
- Total chronic PPH separations were highest in Sunshine Coast University Hospital (3,857), followed by Rockhampton hospital (1,958) and Bundaberg Base Hospital (2,039) and Hervey Bay Hospital (1,717)
- For Indigenous population: highest PPH separations were from Rockhampton hospital (620) followed by Bundaberg Base hospital (254) and Sunshine Coast university hospital (248).

In 2017-18, the total PPHs were reported as below: (137)

Total PPHs (2017-18):

- The PHN reported higher ASR of PPH (3,672, n=36,799) compared to Australia (2,793, n=747,742)
- The PHN ranked 4th highest amongst 31 PHNs and this was driven by higher rates of total chronic and total acute conditions related PPHs
- Except Noosa Hinterland (2,676) all SA3 areas within the PHN indicated higher ASR for Total PPHs. The SA3 areas with higher rates are: Maryborough (4,876, n=2,748), Nambour (4,526, n=2,293) and Central Highlands (4,462, n=1,165).

Total Acute (2017-18):

- The PHN reported higher ASR of PPH (1,843, n=16,633) compared to Australia (1,246, n=329,884)
- The PHN ranked 3rd highest amongst 31 PHNs
- Except Noosa Hinterland (1,278) all SA3 areas within the PHN indicated higher ASR for Acute PPHs. The SA3 areas with higher rates are: Maryborough (2,437, n=1,147)), Nambour (2,2,14, n=1024) and Rockhampton (2,208, n=2,719).

Total Vaccine-Preventable (2017-18)

- The PHN reported higher ASR of PPH (324, n=3,288) compared to Australia (313, n=85,136)
- The PHN ranked 11th highest amongst 31 PHNs
- The SA3 areas with higher rates are: Central Highlands (528, n=134), Nambour (410,n=208) and Burnett (408, n=252)

Note that higher rates of PPH always indicate a less effective primary care system. These PPHs need to be cross ached with including higher rates of disease, lifestyle factors and other risks, as well as a genuine need for hospital services to make conclusions. Not all PPHs are avoidable e.g. those for chronically ill or elderly patients who have received optimum primary care.

Based on AIHW 2020 data, (137) Chronic disease related PPHs are included below for the PHN and SA3 regions. Age standardised rates (per 100,000 people, 2017-18) for

1. **Asthma**

- higher for the PHN (161, n=1,400) compared to Australia (134, n=32,720)
- the PHN ranked 8th highest amongst 31 PHNs
- the SA3s with highest rate are: Nambour (340, n=155) , Burnett (269, n=114) and Caloundra (226, n=229)

2. **COPD**

- rates higher for the PHN (348, n=4,313) compared to national (267, n=77,754) rates.
- the PHN ranked 7th highest amongst 31 PHNs
- the SA3s with high rate are Maryborough (550, n=440), Central Highlands (524, n=108) and Hervey Bay (494, n=539).
- The SA3s with lower rates are Noosa (178, n=143) and Buderim (178, n=142)

3. **Diabetes complications**

- Rates higher for the PHN (246, n=2,529) (national 187, n=50,273).
- the PHN ranked 5th highest amongst 31 PHNs
- the SA3s with highest rates are: Maryborough (475, n=264), Biloela (403, n=60) and Gympie-Cooloola (357, n=204)
- Apart from Gympie-Cooloola and Nambour , the rates are lower for all other SA3s within the SCHHS area.

4. **Hypertension:**

- The rates are slightly higher for the PHN (52, n=618) (national 40, n=11,391)
- The PHN ranked 8th highest amongst 31 PHNs
- The SA3 with highest rates are Burnette (94, n=66) and Bundaberg (69, n=101)
- The SA3s such as Hervey Bay (25), Gympie-Cooloola (29) and Noosa (31) showed substantially lower PPH associated with hypertension.

5. **Total chronic:**

- The PHN has higher rates (1542, n=17,301) (national 1233, n=343,439
- The PHN ranked 4th highest amongst 31 PHNs
- Eleven SA3s have higher rates compared to Australia. The SA3s with highest rates are: Maryborough (2,141, n=1,423), Central Highlands (1,867, n=429) and Bundaberg (1,765, n=2,337)
- Noosa (1,156) , Noosa Hinterland (1,178) and Buderim (1,084) SA3s have lower rate of PPH associated with chronic conditions compared to Australia.

Disparities in PPH
Areas that are remote and very remote, most disadvantaged areas (SEIFA 1) and being Indigenous increased the risk of having high PPH due to all three types: vaccine-preventable, acute and chronic.
Specific chronic disease related disparities were(137):

For Indigenous Australians PPH, as ASR per 100,000 hospitalisations, associated with

- Asthma 261 (national 134)
- COPD 1336 (national 267)
- Diabetes Complications 718 (national 187)
- Hypertension 93 (national 40)
- Total Chronic 3,796 (national 1,233)
- Total PPH 7,989 (national 2,793)

For people living in most disadvantaged areas (SEIFA 1) as ASR per 100,000 hospitalisations, associated with

- Asthma 172 (national 134; SEIFA 5 = 95)
- COPD 413 (national 267, SEIFA 5=146)
- Diabetes Complications 281 (national 187, SEIFA 5=112)
- Hypertension 52 (national 40, SEIFA 5=32)
- Total Chronic 1657 (national 1,233, SEIFA 5=867)
- Total PPH 3643 (national 2,793, SEIFA 5=2132)

For people living in very remote communities as ASR per 100,000 hospitalisations, associated with

- Asthma 188 (national 134; Major Cities =131)
- COPD 761 (national 267, Major Cities = 234)
- Diabetes Complications 477 (national 187, Major Cities = 172)
- Hypertension 111 (national 40, Major Cities = 39)
- Total Chronic 2705 (national 1,233, Major Cities =1158)
- Total PPH 6668 (national 2,793, Major Cities = 2621)

Table 45: Episodes of admitted patient care for potentially preventable hospitalisation (PPH) conditions, for the PHN, public and private hospitals, the PHN 2019/2020

	Total Vaccine Preventable	Total Acute	Total Chronic	Total PPH separations	Total admitted patient separations
Total Preventable according to usual residence being the PHN region	2732	15,929	23,892	42,044	496,033
Usual residence and use of hospital both within the PHN region	2503	14,900	21,726	38,670	444,085
Non-PHN resident used within the PHN hospitals	143	658	623	1,405	15,807
The PHN as usual residence (Indigenous people)	197	1084	1014	2253	19877
Age groups (PHN residents)					
0-4 years	205	1,834	89	2,216	13,193
5 to 24 years	476	4,623	901	5,976	47,292
25 to 54 years	519	3,707	3,063	7,208	120,753
55 and above	1737	7,599	19,928	28,860	327,988
By HHS					
Central Queensland	581	2,969	3,773	7,222	66,035
Wide Bay	603	3,418	5,119	8,989	80,367
Sunshine Coast	978	5,223	6,085	12,130	132,676

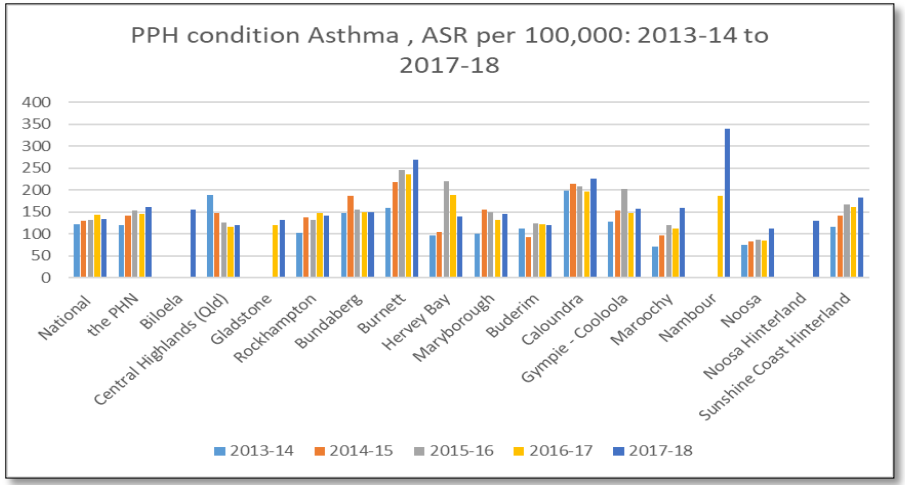
Source: Queensland Government. Episodes of admitted patient care for potentially preventable hospitalisation (PPH) conditions, by Primary Health Network (PHN) of usual residence and Primary Health Network of hospital, public and private acute hospitals, Queensland, 2019/2020. In: Health Q, editor. Brisbane2021.

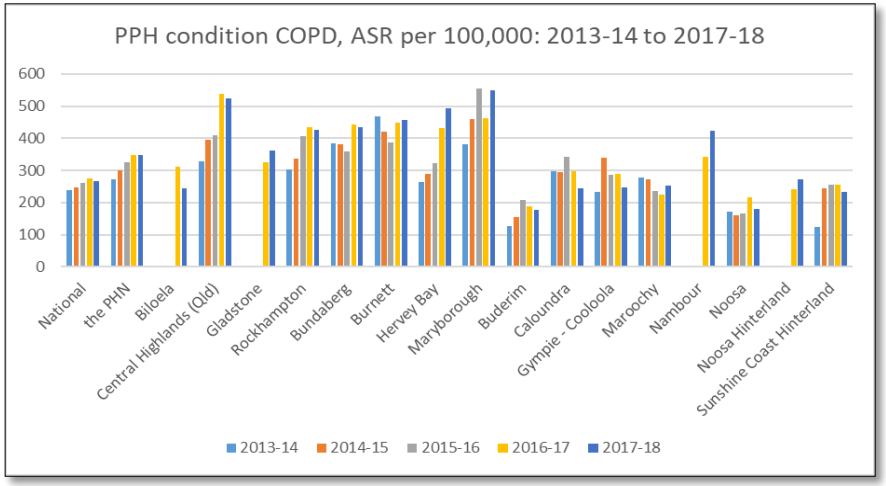
Table 46: Potentially preventable hospitalisations, 2017-18

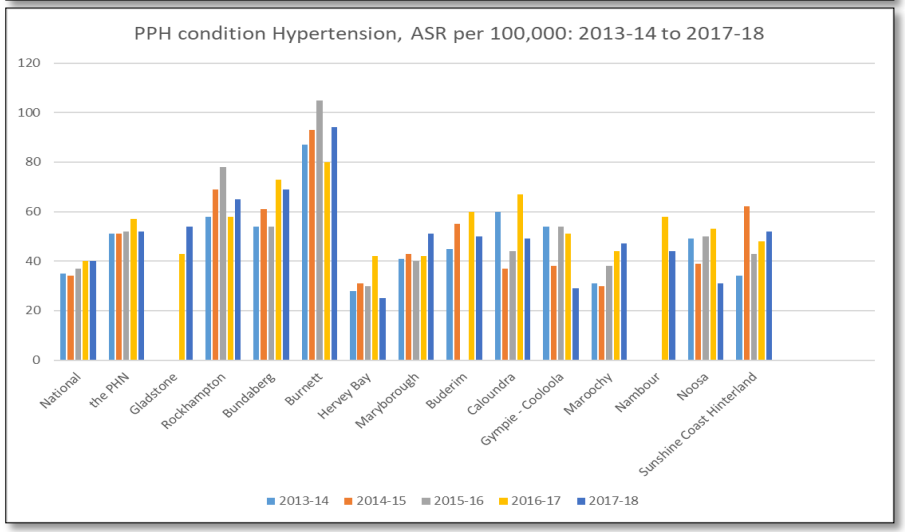
	Total PPH		Total Acute		Total vaccine preventable		Total chronic	
	ASR per 100,00	Numbers	ASR per 100,00	Numbers	ASR per 100,00	Numbers	ASR per 100,00	Numbers
Australia	2,793	747,742	1,286	329,884	313	85,136	1,233	343,439
the PHN	3,672	36,799	1,843	16,633	324	3,288	1,542	17,301
Biloela	4,195	618	2,186	313	410	61	1,631	249
Central Highlands (Qld)	4,462	1,165	2,131	617	528	134	1,867	429
Gladstone	3,128	1,827	1,464	899	242	141	1,470	815
Rockhampton	4,155	5,341	2,208	2,719	292	379	1,695	2,297
Bundaberg	3,896	4,544	1,859	1,898	327	379	1,765	2,337
Burnett	3,953	2,373	1,869	970	408	252	1,758	1,211
Hervey Bay	3,651	2,927	1,670	1,086	397	329	1,631	1,561
Maryborough	4,876	2,748	2,437	1,147	358	221	2,141	1,423
Buderim	2,947	1,993	1,621	1,015	262	171	1,084	820
Caloundra	3,622	3,925	1,856	1,766	378	401	1,415	1,789
Gympie - Cooloola	3,237	1,988	1,559	835	290	187	1,426	991
Maroochy	3,223	2,362	1,632	1,068	331	247	1,292	1,070
Nambour	4,526	2,293	2,214	1,024	410	208	1,943	1,083
Noosa	2,810	1,599	1,389	664	280	159	1,156	786
Noosa Hinterland	2,676	692	1,278	285	246	62	1,178	352
Sunshine Coast Hinterland	3,469	2,032	1,864	983	260	155	1,366	910

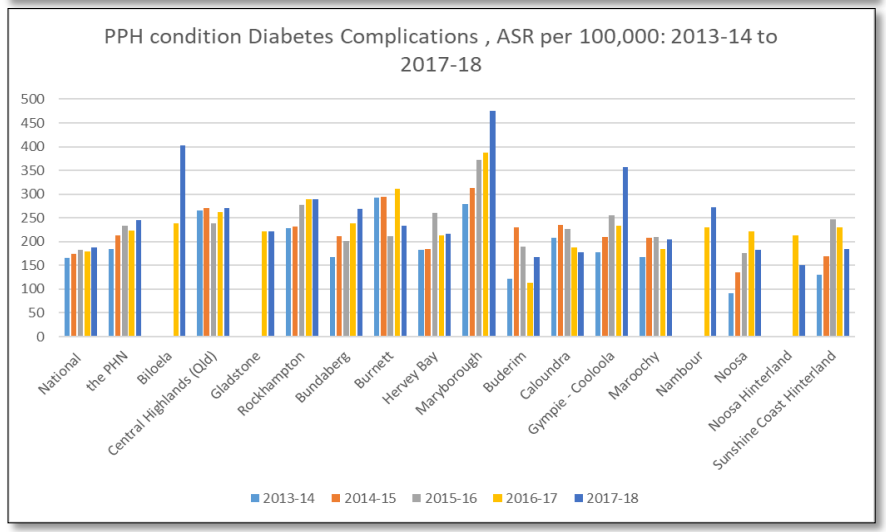
Source: AIHW 2019, Potentially preventable hospitalisations in Australia by age groups and small geographic areas, 2017-18, https://www.aihw.gov.au/reports/primary-health-care/potentially-preventable-hospitalisations/contents/overview

Graph 24: Potentailly preventable hospitalisations, selected conditions, 2017-18









Source: AIHW 2019, Potentially preventable hospitalisations in Australia by age groups and small geographic areas, 2017-18, https://www.aihw.gov.au/reports/primary-health-care/potentially-preventable-hospitalisations/contents/overview

8.1.7. Premature Deaths

Premature death is a measure of years of potential life lost due to death occurring before the age of 75. Deaths at younger ages contribute more to the premature death rate than deaths occurring closer to age 75. Risk factors for premature death include obesity, smoking and exposure to environmental hazards such as reduced air quality. Risk factors for heart disease, such as high blood pressure, high cholesterol, Type 2 diabetes and physical inactivity are also risk factors for premature death. Lifestyle changes can help prevent premature deaths by reducing risk factors. This can include changes in diet, exercise, alcohol consumption, tobacco use, as well as medication use for the treatment of conditions such as depression, diabetes or hypertension. Similarly, potentially avoidable deaths are those that occur before age 75 years and are caused by conditions that are potentially preventable through individualised care and/or treatable through existing primary or hospital care. Deaths are defined as avoidable in the context of the present health system.

The data on premature deaths indicates that:(138)

- Overall ASR of death rates and premature death rates (Aged 75 and under) were higher in Bundaberg, Burnett, Gympie-Cooloola. Hervey Bay, Maryborough and Rockhampton
- Potentially avoidable deaths are higher in Biloela, Bundaberg, Burnette, Gladstone, Gympie-Cooloola, Hervey Bay, Maryborough, Nambour, Rockhampton.

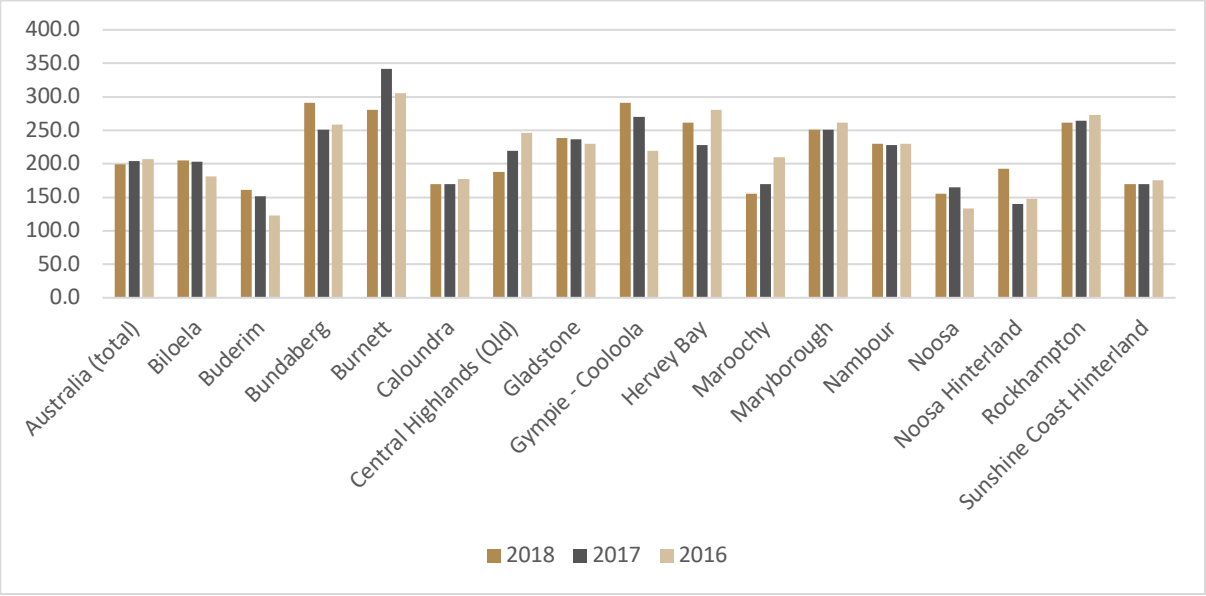
Table 47: Premature deaths and potentially avoidable deaths, the PHN and SA3, 2018

	Total number of deaths,	Deaths, ASR (per 100,000)	Number of Premature deaths	Premature deaths ASR (per 100,000)	Potentially Avoidable deaths	PAD ASR (per 100,000)
Australia	158,493	507.9	54,189	198.9	26,736	100.3
Biloela	89	571.5	31	205.2	22	150.6
Central Highlands	86	445.6	50	187.6	32	119.7
Gladstone	300	573.7	154	238.7	98	155.3
Rockhampton	897	602.4	340	261.6	170	135.8
Bundaberg	856	594.0	329	290.9	174	158.5
Burnett	473	622.6	189	280.6	100	156.2
Hervey Bay	664	611.7	224	261.1	113	137.9
Maryborough	441	584.6	180	250.8	101	150.8
Buderim	379	416.5	105	161.2	59	93.0
Caloundra	729	457.0	193	169.4	82	77.1
Gympie - Cooloola	447	587.3	193	290.9	101	168.7
Maroochy	453	470.5	121	155.7	59	80.7
Nambour	346	568.3	119	229.9	65	135.6
Noosa	335	429.6	89	155.5	50	95.3
Noosa Hinterland	153	512.1	66	192.5	29	92.7
Sunshine Coast Hinterland	338	466.9	123	170.1	57	84.7

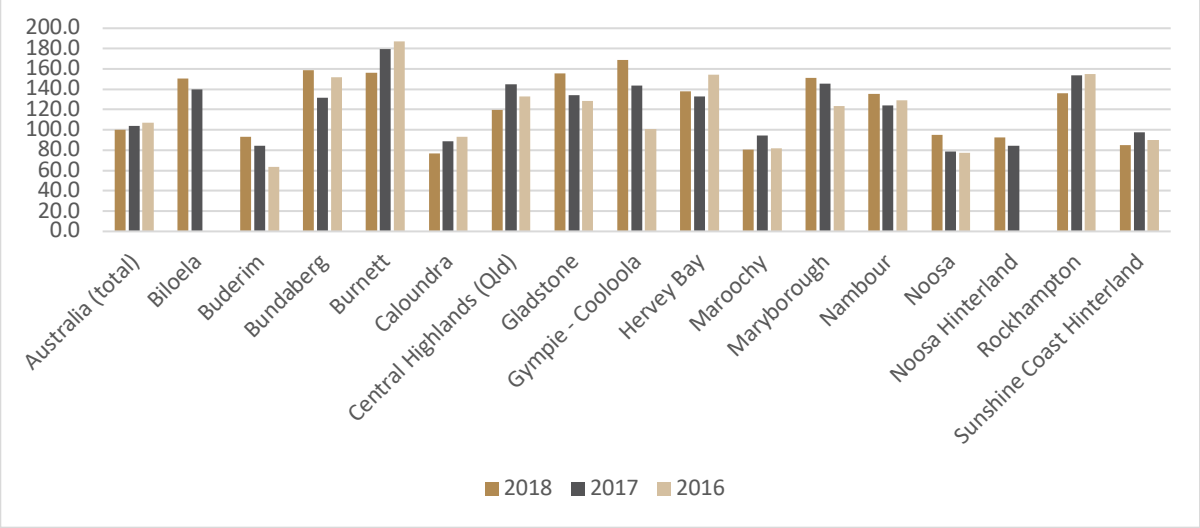
Source: (AIHW) Australian Institute of Health and Welfare (2020) Mortality Over Regions and Time (MORT) books, SA3 2014-2018.

The rates of pre-mature deaths and potentially preventable hospitalisations varied overtime within the PHN. The figures below indicate consistency higher rates overtime for Central Highlands, Maroochy, Rockhampton, Burnett, and Caloundra.

Graph 25: Premature deaths (aged under 75) age-standardised rate (per 100,000)



Graph 26: Potentially avoidable deaths age-standardised rate (per 100,000)



8.2. Use of PHN specific services

RPHS Evaluation

The Rural Primary Health Services (RPHS) program aims to improve access to a range of primary and allied health care services and activities for rural and remote communities. Specifically, within the Central Queensland Wide Bay Sunshine Coast PHN (The PHN), the RPHS program aims to improve access for four of the most vulnerable groups within the region: Aboriginal and Torres Strait Islander peoples, children, youth and those at risk of or managing chronic disease, with a focus on rural areas (CQWBSC PHN, 2017). A mixed methods approach was used to measure the impact of currently commissioned RPHS services. A targeted literature review was conducted to provide required knowledge and context for the benchmarking, and a basis for potential recommendations for a co-design approach to chronic disease management. Quantitative data consisted of 12-months of program data between July 2018- June 2019. The program data results were compared against the program targets, as well as with relevant National and Regional level chronic disease and early childhood data. Qualitative data included information from conversations with service users, service

providers and the program staff members. A self-reported survey was administered for clinical and community advisory council members to seek input on barriers and enablers of the current program and their perceptions of emerging priorities.
The recommendation based on key conclusions are being integrated into future planning to improve efficacty and effectiveness of the program.

- The uptake of various service delivery modalities such as telehealth and phone consultation continue to be promoted, especially for those areas where clinics are servicing large numbers of rural and remote clients.
- Rurality and remoteness specific needs and challenges need to be considered when designing and commissioning the RPHS services. It requires co-designing of these services (community involvement) to ensure the services provided are accessible, user-friendly, and culturally appropriate and safe.
- Recruitment and retention of health workforce in rural/remote areas also requires collaboration with other NGOs and other relevant institutions. Rurality related added costs involved in delivering rural and remote services, such as outreach clinics or home visits, need to be considered in commissioning the service. Mapping availability of primary care workforce to understand demand versus supply might be beneficial.
- Opportunities to expand groups sessions focused on primary and secondary prevention along with patient and carer's education sessions developed and delivered in collaboration with community education programs and peer-support groups can provide value for money. Models like 'train the trainer' could be explored where feasible. Continuing to improve opportunities for collaboration through wider system/program engagement activities could be beneficial.
- Communication between allied health service provider and the referrer need to be strengthened; provision of patient progress and discharge summary needs to be enforced as an integral part of the service provider's service requirements.
- Localised co-designing of the service is required in order to reflect local needs and challenges and effectivity facilitate locally available services and opportunities. This will also assist enabling multi-disciplinary team approach with clearly defined roles of the members and involvement of the local HHS's and ACCHOS's. Adequate funding and flexibility in funding allocations serve as essential precursors for an effective implementation of the co-design approach.

General Practice Training and Support
Note: 2020-2021 was an unusual year for GP and primary health professional training/ education events as only a limited amount of face-to-face workshops could be undertaken. We converted what we could to online learning. Some skills-based training could not be run for health and safety reasons.

The PHN's 2020-2021 information indicates that for "GP" training: (includes practice staff and primary care allied health professionals)

- There were 18 RACGP/ACRRM accredited activities by the PHN and 798 practices attended the sessions
- Clinical topics covered: eating disorders, COVID population health / public health/ infectious disease updates; Pall Care; general endocrinology; diagnosis of mental capacity; Women's health topics (various); antenatal shared care; Paediatrics various topics- neuro dev; respiratory, dermatology); Coronary artery disease; Joints and soft tissue topics; QI during COVID; Customisable content used to engage patient groups; Mental health/ lifestyle medicine; AOD, Advanced care planning; CPR; Aboriginal and Torres Strait Islander Health
- There were 31 information/ networking activities (not RACGP/ACRRM accredited) that were attended by 931 participants
- Topics covered: smart referrals, e prescriptions; PEN training; GP networking meetings; practice manager networking meetings; COVID and Flu vaccine updates; RACF updates re: clinical handover, Palliative care, Flu and COVID-19 vaccine; Medico legal topics; Benchmark reporting.

Further example of the PHN addressing the needs

- The Pulmonary Rehabilitation program that is funded in Hervey Bay and Maryborough in the last year has seen over 100 people with chronic respiratory conditions complete the program. Of the people completing the program, the Hervey Bay cohort has reduced their hospital readmission rate by 94% and the Maryborough cohort by 69%.

8.3. Effectiveness

An effectiveness of any service is measured based on positive impact of any action that achieves the desired outcome from both the clinical and patient perspective, including as patient reported outcomes.

8.3.1. Immunisation rates for vaccinations in the national schedule

Rates of child immunisations are reported in the Maternal and child Health Section.

Based on the data from Queensland Health (https://www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19/current-status/statistics) number of COVID vaccinations were total of:

- 69,913 in Wide Bay HHS
- 51,888 in Central Queensland HHS
- 142,250 in Sunshine Coast HHS

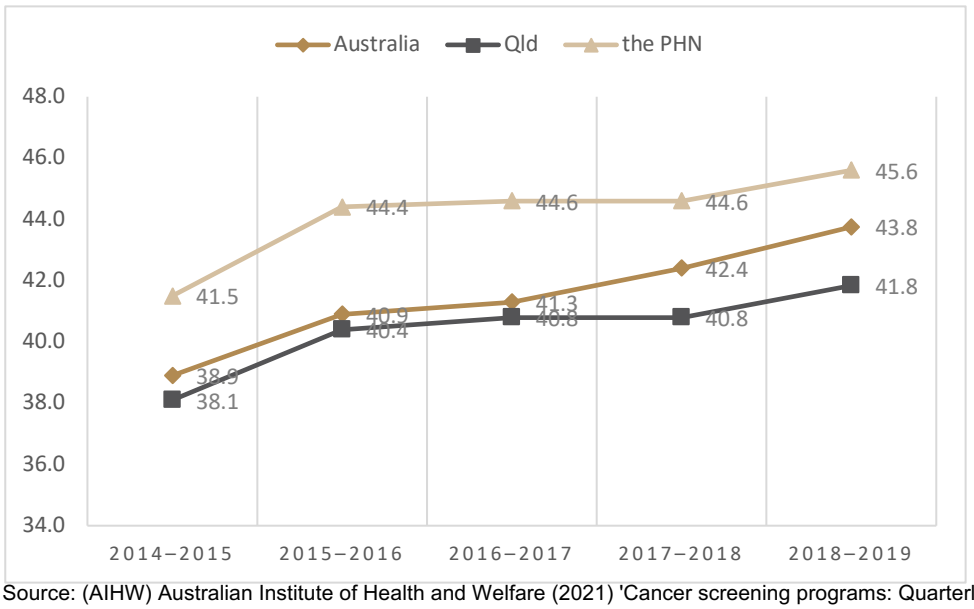
8.3.2. Cancer Screening rates

Cancer screening programs aim to reduce illness and death from selected cancers. Participation is the proportion of eligible or invited people who completed a cancer screening test. Participation data help us to know the extent to which target groups are being reached and can inform strategies to improve screening rates among these groups of people. The screening rates were slightly higher compared to the Queensland and national rates for the PHN.

National Bowel Cancer Screening Program (50 to 74 years)

- For 2018-19 the PHN rate (45.6%) was higher than the national (43.8%) and Qld (41.8%) rate.
- Only two SA3s within the PHN had lower screening rates: Central Highlands (36.0%) and Gladstone (38.3%)
- Caloundra SA3 had the highest rate within the PHN (48.3%)
- There is small increase in the participation rates overtime

Graph 27: National Bowel Cancer Screening Program participation, 50 to 74 years, percentages, the PHN, 2014-15 to 2018-

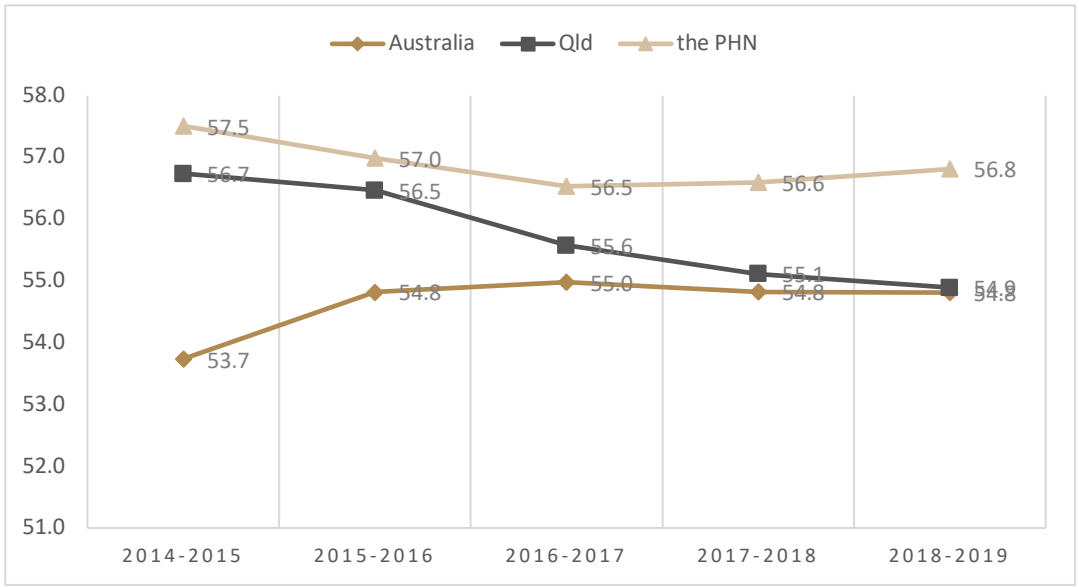


Source: (AIHW) Australian Institute of Health and Welfare (2021) 'Cancer screening programs: Quarterly data. April 2021'.

National Breast Screening Program (50 to 74 years)

- For 2018-19 the PHN rate (56.8%) was higher than the national (54.8%) and Qld (54.9%) rate.
- Noosa Hinterland SA3 had lowest rate (51.0%) within the PHN
- Rockhampton SA3 had the highest rate within the PHN (63.9%)
- The rates have been steady for past few years.

Graph 28: National Breast Screening Program participation, 50 to 74 years, the PHN, 2014-15 to 2018-19

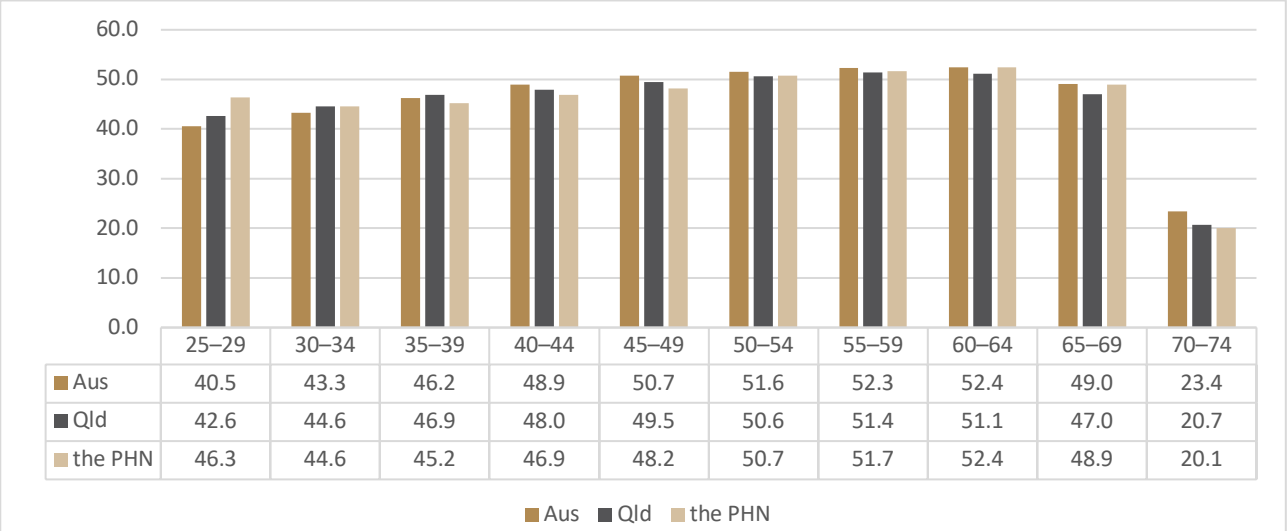


Source: (AIHW) Australian Institute of Health and Welfare (2021) 'Cancer screening programs: Quarterly data. April 2021'.

National Cervical Screening Program (25 to 74 years)

- For 2018-19 the PHN rate (46.2%) was similar to the national (46.3%) and Qld (46.1%) rate.
- Gladstone SA3 had lowest rate (40.1%) within the PHN
- Noosa SA3 had the highest rate within the PHN (53.7%)
- There is no data from 2015-16 to 2017-18. However the 2018-19 data by age-group indicates higher rates within the PHN for 25-29 year old women.

Graph 29: National Cervical Screening Program participation %, 20-74 by age group, 2018-19



	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74
Aus	40.5	43.3	46.2	48.9	50.7	51.6	52.3	52.4	49.0	23.4
Qld	42.6	44.6	46.9	48.0	49.5	50.6	51.4	51.1	47.0	20.7
the PHN	46.3	44.6	45.2	46.9	48.2	50.7	51.7	52.4	48.9	20.1

Source: (AIHW) Australian Institute of Health and Welfare (2021) 'Cancer screening programs: Quarterly data. April 2021'.

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Table 48: National screening participation rates for selected programs, the PHN and SA3s , 2018-19

	National bowel Cancer Screening Program (50 to 74 years), 2018-19			National Breast Screen Program (50 to 74 years), 2018-19			National Cervical Screening Program (25 to 74 years), 2018-19		
Australia	2,497,519	5,708,465	43.8	1,875,771	3,422,137	54.8	3,129,719	6,765,565	46.3
Queensland	484,053	1,157,004	41.8	380,122	692,469	54.9	621,748	1,349,948	46.1
the PHN	108,499	238,145	45.6	80,391	141,494	56.8	105,784	229,104	46.2
CQHHS	21,433	51,986	41.2	17,784	29,390	60.5	24,194	57,593	42.0
Biloela	1,342	3,067	43.8	1,122	1,863	60.2	1,513	3,533	42.8
Central Highlands (Qld)	1,953	5,419	36.0	1,666	3,013	55.3	3,050	7,452	40.9
Gladstone	5,660	14,760	38.3	4,374	7,885	55.5	6,533	16,277	40.1
Rockhampton	12,478	28,740	43.4	10,622	16,629	63.9	13,098	30,331	43.2
WBHHS	34,876	73,955	47.2	25,818	44,725	57.7	27,200	64,208	42.4
Bundaberg	12,470	26,361	47.3	9,373	15,521	60.4	10,487	23,521	44.6
Burnett	6,344	14,018	45.3	4,733	8,676	54.6	5,204	12,638	41.2
Hervey Bay	9,023	18,826	47.9	6,656	11,567	57.5	6,572	16,058	40.9
Maryborough	7,039	14,750	47.7	5,056	8,961	56.4	4,937	11,991	41.2
SCHHS	56,444	121,629	46.4	40,011	73,393	54.5	58,130	116,167	50.0
Buderim	6,676	14,248	46.9	4,788	8,701	55.0	8,008	15,438	51.9
Caloundra	11,355	23,532	48.3	8,403	14,706	57.1	12,024	23,718	50.7
Gympie - Cooloola	7,328	16,177	45.3	5,145	9,491	54.2	6,100	13,650	44.7
Maroochy	7,977	17,189	46.4	5,566	10,558	52.7	8,717	17,338	50.3
Nambour	5,798	12,985	44.6	4,231	7,287	58.1	6,162	12,595	48.9
Noosa	6,786	14,411	47.1	4,345	8,305	52.3	6,661	12,410	53.7
Noosa Hinterland	3,485	7,475	46.6	2,340	4,589	51.0	3,282	6,468	50.7
Sunshine Coast Hinterland	7,039	15,612	45.1	5,193	9,756	53.2	7,176	14,550	49.3

Source: (AIHW) Australian Institute of Health and Welfare (2021) 'Cancer screening programs: Quarterly data. April 2021'.

8.4. Continuity of Care

Continuity of healthcare indicates ability to provide uninterrupted care or service across programs, practitioners and levels over time. Although the data is from 2016 the analysis indicates that the PHN fared better compared to Australia in many indicators summarised in the tables below. Use of health services reported as coordination of healthcare care for patients aged 45 and over by Primary Health Networks, 2016, indicates that high proportion of people with low SES make use of services within the PHN, compared to Australia. Other demographic indicators of use of services are summarised in the table below.

Table 49: Demographic indicators of service use, national and PHN, 2016

	National		The PHN	
	National	%	N	%
Gender				
Men	4,157,052	47.1	167,782	47.6
women	4,660,931	52.9	184,962	52.4
Age groups				
45-54	2,627,322	29.8	96,802	27.4
55-64	2,584,538	29.3	100,101	28.4
65-74	2,010,408	22.8	91,697	26
75-84	1,215,354	13.8	51,851	14.7
85+	379,810	4.3	12,951	3.7
SES				
Most disadvantaged	1,381,995	15.7	121,682	34.5
Least Disadvantaged	2,364,563	26.8	1,246	0.4
Education				
Bachelor Degree or Higher	2,093,259	24.7	59,830	18
Year 11 or below	2,773,454	32.8	124,282	37.3
Weekly household income				
$1 - $799 per week	2,720,958	33.2	123,370	37.8
$6,000 or more per week	215,374	2.6	6,078	1.9

Source: AIHW, 2021 https://www.aihw.gov.au/reports/health-care-quality-performance/coordination-health-care-patients-45-over-phn/data

Table 50: Coordination of health care for patients aged 45 and over by Primary Health Networks, 2016

	National		The PHN	
	numbers	%	numbers	%
Saw a GP after hours for own health in the last 12 months (a)	980,024	12	24,913	7.7
Has a usual GP	8,597,490	97.5	339,674	96.3
Usual GP or others in usual place of care always seemed aware of patient's health care history in the preceding 12 months (c)	5,471,138	66.4	211,971	65.5
Saw a specialist doctor (excluding those seen during overnight stays in a hospital) for own health in the last 12 months	4,811,625	54.7	172,521	49.1
Usual GP seemed informed about care received from specialist doctor	3,642,227	77	133,378	78.8
At least one time when specialist doctor did not have medical information or test results	393,332	8.2	11,223	6.5
There was a time in the last 12 months when felt needed to go to a specialist doctor but did not go due to no GP referral	108,800	10	3,329	7.9
A health professional reviewed all medication taken in the last 12 months (a)	5,160,639	71.7	202,142	69.7
Usual GP or others at usual place of care seemed to be always informed about care provided by allied health professional(s) for physical health (a)	1,555,740	41.3	59,312	42.5

Safety in healthcare
Safety and quality of healthcare indicates the avoidance or reduction of potential harm from health care management or the environment in which health care is delivered. Includes aspects of the safety of care delivered to health care providers and patients, including patient reported incidents. The data indicates that in 2016, the PHN indicators were similar to the national rates.

Table 51: Coordination of health care for patients aged 45 and over by Primary Health Networks, 2016

	National		PHN306 Central Queensland, Wide Bay, Sunshine Coast	
	numbers	%	numbers	
Waited longer than felt acceptable to see a specialist doctor in the last 12 months	1,077,327	22.5	31,865	18.5
At least one time when specialist doctor did not have medical information or test results	393,332	8.2	11,223	6.5
A health professional reviewed all medication taken in the last 12 months (a)	5,160,639	71.7	202,142	69.7
A wrong medication or wrong dose was given by a doctor, nurse or pharmacist in the last 12 months (a)	301,869	4.2	14,700	5.1

Source: AIHW, 2021 https://www.aihw.gov.au/reports/health-care-quality-performance/coordination-health-care-patients-45-over-phn/data

8.5. Accessibility

Long waitlists in outpatient clinics are a widely recognised problem. The demand for publicly funded specialist care is high, and wait time from referral to first appointment is a growing barrier to access. Access is defined as the "delivery of health care that is timely, geographically reasonable and provided in a setting where skills and resources are appropriate to medical need. Delays in access to specialist medical outpatient services have implications for patients, providers and policy makers. Waiting for an outpatient appointment may negatively affect the patient's condition, productivity and well-being(139) and increase patient anxiety(140). Detailed waitlists for each hospital within the PHN for each quarter rea reported on Queensland Health's webpages and can be referred to if required. (http://www.performance.health.qld.gov.au/HospitalHealthService/BreastScreen/89). Wait times for ED access are summarised below.

8.5.1. Waiting times

Waiting times for ED care: proportion seen on time
The care is provided in emergency departments by triaging the patient using clinical practice criteria.

Triage 1. Resuscitation (requires immediate treatment, which was defined for this report as commencement of clinical care within 2 minutes from presentation time)

Triage 2. Emergency (treatment required within 10 minutes)

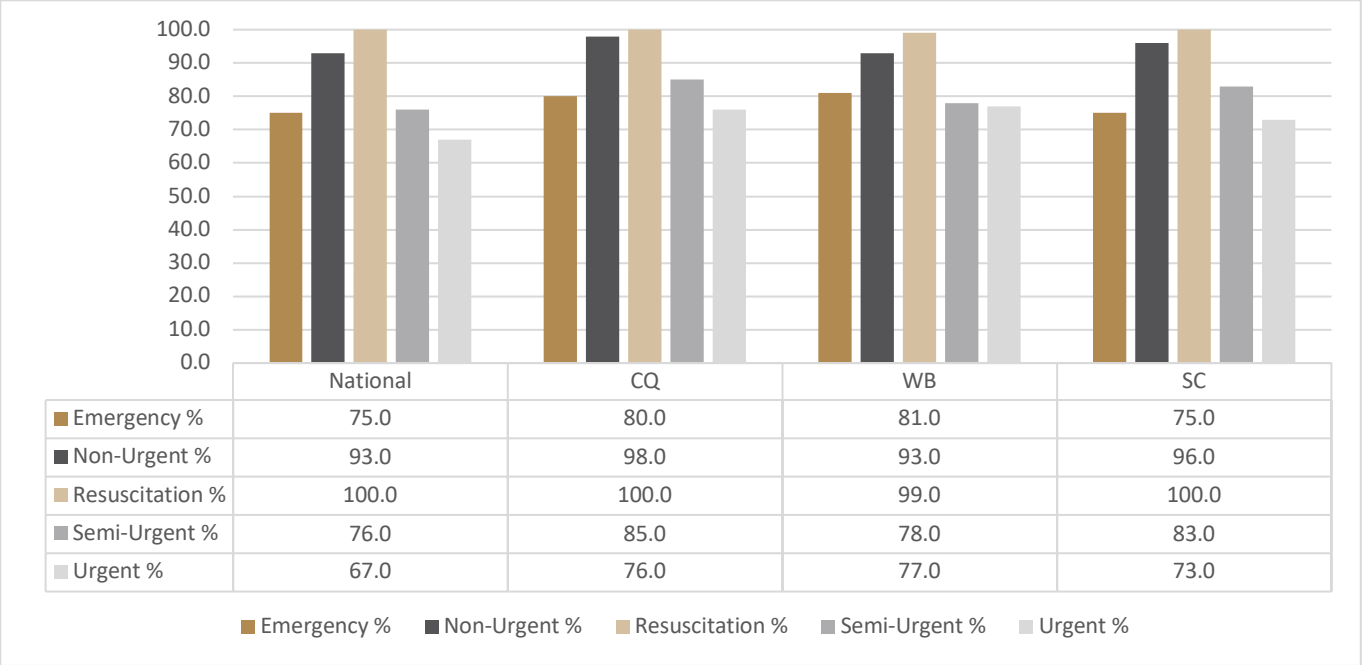
Triage 3. Urgent (treatment required within 30 minutes)

Triage 4. Semi-urgent (treatment required within 60 minutes)

Triage 5. Non-urgent (treatment recommended within 120 minutes/2 hours)

The long wait times indicates system level issues from access to primary care to lack of workforce.
Figure below shows the proportion of people who were seen in time across above five triage categories 2019-20.

Graph 30: Proportion of people who were seen within the appropriate time for each triage criteria, 2019-20



	National	CQ	WB	SC
Emergency %	75.0	80.0	81.0	75.0
Non-Urgent %	93.0	98.0	93.0	96.0
Resuscitation %	100.0	100.0	99.0	100.0
Semi-Urgent %	76.0	85.0	78.0	83.0
Urgent %	67.0	76.0	77.0	73.0

Source: AIHW, 2019-20. Time Spent in Emergency Departments, multilevel data Waiting times for emergency department care: percentage of patients whose length of emergency department stay is 4 hours or less

The table below indicates that the proportion of people seen within 4hours within the PHN were similar to or higher compared nationally.

Table 52: Proportion of people seen within four hours of entering the ED, 2019-20

	National	Central Queensland	Sunshine Coast	Wide Bay
All patients	69.00%	76.00%	68.00%	78.00%
Not subsequently admitted patients	79.00%	87.00%	78.00%	87.00%
Subsequently admitted patients	46.00%	42.00%	49.00%	58.00%
Emergency	56.00%	57.00%	54.00%	63.00%
Non-Urgent	93.00%	97.00%	94.00%	95.00%
Resuscitation	53.00%	47.00%	54.00%	52.00%
Semi-Urgent	78.00%	88.00%	83.00%	88.00%
Urgent	60.00%	70.00%	61.00%	72.00%

Source: AIHW, 2019-20. Time Spent in Emergency Departments, multilevel data

8.6. Responsiveness

8.6.1. Patient experience

Improving patient experience is one of the quadruple aims for the PHNs. In 2019-20 nationally more than 90% of patients felt that their GP listened to them and often spent enough time on their consult.

Table 53: Patient experience, the PHN, 2019-20

2019-20	National	the PHN
Percentage of adults who felt their GP always or often listened carefully in the preceding 12 months	92.3	92
Percentage of adults who felt their GP always or often showed respect for what they had to say in the preceding 12 months	94.6	93.4
Percentage of adults who felt their GP always or often spent enough time in the preceding 12 months	90.9	91.1
Percentage of adults who waited four or more hours between making an appointment and seeing a GP for their most recent urgent care in the preceding 12 months	36.7	47.9
Percentage of adults referred to a medical specialist who waited longer than they felt acceptable to get an appointment in the preceding 12 months	23.2	18.0

Source: AIHW, 2019-20. Patient experiences in Australia

8.7. Health Workforce

Health workforce data available from National Health workforce Dataset is available on National level only for 2019 and therefore most recent data from Health Workforce Queensland (HWQ) and the service mapping undertaken by the PHN is used to understand the workforce availability within the region.
The PHN commissioned HWQ to map various services within the PHN (2020-2021). Note that the information below is gathered from only the service providers who responded to the calls made by HWQ. Nonetheless, this is most accurate information that the PHN has on health workforce within the region.

- There were around 2,265 service providers in the PHN region delivering primary care and allied health services.
- With around 218 General Practices within the region 1,482 GPs were working within the PHN. There are around RNs and ENs within the PHN region (CQ=1,772, WB=3,560 and SC=5,353)

Table 54: Number of service providers and headcounts by category, the PHN, 2020-21

	General Practice		**Allied Health**		**Community Service**	
LGAs	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #
Central Queensland area	**62**	**310**	**184**	**320**	**36**	**31**
Banana	6	33	17	23	5	2
Central Highlands	2	68	22	33	8	1
Gladstone	11	54	33	28	8	21
Livingstone	14	46	20	49	2	0
Rockhampton	7	109	92	187	13	7
Sunshine Coast area	**22**	**837**	**186**	**311**	**29**	**31**
Gympie	178	86	16	19	5	9
Noosa	15	112	19	48	2	0
Sunshine Coast	29	639	151	244	22	22
Wide Bay area	**134**	**335**	**98**	**120**	**19**	**5**
Bundaberg	70	137	40	50	12	5
Fraser Coast	26	173	48	66	6	0
North Burnett	6	25	10	4	1	0
Total PHN region	**218**	**1482**	**468**	**751**	**84**	**67**

Source: HWQ, 2020-21. Mapping of services within the PHN

The Deloitte Access Economics General Practitioner Workforce Report 2019 has found that Australia is heading for a significant undersupply of General Practitioners by 2030.

- The report highlights that there will be 37.5% increase in the demand for GP services between 2019 and 2030 (139.8 million increasing to 192.1 million).
- The report states that by 2030, there is projected to be a shortfall of 9,298 full-time GPs or 24.7% of the GP workforce.
- With the deficiency of GPs to be most extreme in urban areas with a shortfall of 7,535 full-time GPs or 31.7% by 2030.

The number of new general practitioners entering the market will not keep pace with increasing demand for healthcare. Identification of gaps in general practice services is critical for the PHN. Research findings from 2019 on the knowledge about and performance of the PHN indicated that(141): Across the region, GPs report a shortage of doctors in their local area. This is most pronounced in Central Queensland and is attributed to the practice location i.e. lack of appeal in living in regional/rural towns and the need for other family members to access employment and/or education. Factors related to the work itself e.g. lack of allied health services and patient demographics are believed to be secondary barriers for GPs practising in the area.

Health Workforce Queensland's Health workforce Needs Assessment was undertaken to identify workforce gaps. Mean workforce gap ratings of 60 of higher, indicative of a possible serious gap existing. the indicates that or the PHN indicates that:

- For the CQWBSC region there were 7 workforce gap ratings of 60 or more. The highest means were for psychology, speech pathology and occupational therapy, which were higher than 70 followed by social work, general practitioner, Indigenous health worker and diabetes educator.
- The three types of workforce with means lower than 50 were pharmacy (M = 33), optometry (M = 41) and radiology (M = 47).
- Central Queensland HHS had 10 workforce gap ratings of 60 or more with the highest ratings for psychology, occupational therapy, and speech pathology.
- For the Wide Bay HHS region there were only five means higher than 60, with psychology, occupational therapy and speech pathology having the highest workforce gap means.
- The Sunshine Coast HHS had only four means of 60 or more. The highest mean was for speech pathology followed by social work and psychology workforce.

Table 55: Number of service providers and headcount for selected allied health services within the PHN, 2020-21

	Audiology		Total Dental		Dental Other		Dentist		Diabetes Educators		Occupational Therapy		Optometry		Pharmacy		Physiotherapy		Podiatry	
LGAs/PHN	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #	Service Provider #	Head Count #
Central Queensland area	**10**	**16**	**48**	**117**	**15**	**18**	**33**	**99**	**7**	**30**	**3**	**67**	**22**	**37**	**62**	**136**	**27**	**145**	**20**	**37**
Banana	2	4	1	10	0	0	1	10	1	4	0	5	1	1	4	10	3	10	0	2
Central Highlands	0	3	10	28	6	0	4	28	1	5	1	11	2	4	13	31	4	13	2	4
Gladstone	3	3	10	20	2	1	8	19	2	5	1	11	7	8	17	34	10	34	3	10
Livingstone	2	2	9	14	2	3	7	11	0	4	0	2	3	5	7	24	3	27	7	5
Rockhampton	3	4	18	45	5	14	13	31	3	12	1	38	9	19	21	37	7	61	8	16
Sunshine Coast area	**28**	**25**	**113**	**379**	**16**	**86**	**97**	**293**	**4**	**18**	**11**	**60**	**35**	**63**	**101**	**216**	**75**	**254**	**39**	**102**
Gympie	2	0	7	16	1	2	6	14	1	2	5	6	4	4	14	24	8	15	3	8
Noosa	5	6	19	46	2	11	17	35	1	1	0	6	9	22	12	26	12	37	6	16
Sunshine Coast	21	19	87	317	13	73	74	244	2	15	6	48	22	37	75	166	55	202	30	78
Wide Bay area	**21**	**11**	**36**	**86**	**5**	**4**	**31**	**82**	**8**	**16**	**7**	**36**	**23**	**34**	**71**	**144**	**17**	**85**	**17**	**40**
Bundaberg	9	3	17	46	1	2	16	44	4	2	3	16	8	13	31	72	4	44	8	16
Fraser Coast	7	8	16	37	3	2	13	35	2	10	4	13	15	21	34	61	12	32	5	17
North Burnett	5	0	3	3	1	0	2	3	2	4	0	7	0	0	6	11	1	9	4	7
The PHN total	**59**	**52**	**197**	**582**	**36**	**108**	**161**	**474**	**19**	**64**	**21**	**163**	**80**	**134**	**234**	**496**	**119**	**484**	**76**	179

Source: HWQ 2020-21: Mapping of services within the PHN

8.7.1. Digital Health

Digital health is an umbrella term referring to a range of technologies that can be used to treat patients and collect and share a person's health information, including mobile health and applications, electronic health records, telehealth and telemedicine, wearable devices, robotics and artificial intelligence. Examples include: My Health Record, fitness trackers, smartwatches, sleep trackers, wellness applications, SMS reminders via mobile messaging, electronic discharge summaries, electronic prescribing, secure messaging, voice interfaces, medical drones, paperless hospitals, implanted microchips, robotic nurse assistants.

One of the main initiatives to ensure key health information is available whenever and wherever it is needed is the My Health Record (MHR) system. The MHR system began on 1 July 2012 and since then has grown to reach 90% of health system users through the implementation of opt-out arrangements in 2019. Over this time, MHR has grown in its capability, usability and integration with clinical information systems across the health sector. There are currently 22.68 million My Health Records, with more than 16,000 health care provider organisations registered to use it, and more than 1.7 billion documents (including clinical documents, prescription and dispensing documents, user documents and Medicare documents) stored in the MHR system at December 2019.

8.8. Impact of COVID

On MBS, nationally, from September 2018 to December 2020:

- There was unseasonably low volume of Medicare services processed in April 2020, including large falls across the pathology, optometry, operations and anaesthetics BTOS groups due to lockdown measures and the temporary ban on elective surgeries.
- The introduction of temporary telehealth via video conference and/or telephone consultation items in March 2020, and the subsequent drop in face-to-face consultations
- The large spike in brief (referred to as 'obvious problem' attendances) GP attendances in April 2020; and
- The increase in benefits paid for incentive items during the period April 2020 to September 2020, where the fees associated with the temporary COVID-19 bulk-billing incentives items were doubled.

On PBS, from January 2019 to December 2020 points of note are:

- There was a high volume of prescriptions dispensed in March 2020, coinciding with the introduction of restrictions nationally, and followed by a decrease in April 2020. This pattern occurred in every state and territory and in most areas within states and territories.
- There was an increase in the number of prescriptions dispensed for respiratory system medicines in March 2020 compared to the corresponding period in 2019. This increase was largely driven by the group of medicines used to treat respiratory related conditions such as asthma and chronic obstructive pulmonary disease (COPD).
- There was a decrease in prescriptions dispensed for anti-infectives (this group consists predominantly of antibiotics and antivirals) from 2.5 million in March 2020 to 1.5 million in April. This downward trend carried through to December 2020 compared to the same months in 2019. This decrease in antimicrobial utilisation could be associated with COVID-19 measures such as physical distancing and improved hand hygiene practices. This corresponds with reports of lower numbers of influenza cases in Australia compared to previous years.

In Summary

- ***Wound infection*** *related calls to 13 Health were high from all three areas.*
- *Highest % of calls made to 13Health were from North Burnett, Fraser Coast, and Bundaberg*
- ***Diabetes annual cycle of care*** *plans rate was higher in Maryborough and Bundaberg*
- *Use of MBS services*
    - *Use of* ***podiatry services higher*** *in Bundaberg, Maryborough, Hervey Bay, Gympie – Cooloola and Caloundra*
    - ***Rate of total allied health MBS services*** *use was higher for Maryborough, Hervey Bay, Buderim, Caloundra, Maroochy, Nambour, Noosa, Noosa Hinterland and Sunshine Coast Hinterland SA3 regions.*
    - ***Total GP attendances*** *rate lowest for Central Highlands SA3 and highest in Hervey Bay*
- *The PHN had* ***significantly higher ASR of lifestyle related hospitalisations*** *compared to Qld. This rate was significantly higher for Wide Bay HHS and Central Queensland HHS.*
- ***ED-presentations***
    - *In-hours low urgency ED presentations rates highest in Gympie-Cooloola, Maryborough, Gladstone and Bundaberg*
    - *Consistently higher rates of in-hours low-urgency ED presentations across all the age groups were evident for Bundaberg, Gladstone. Gympie-Cooloola and Maryborough*
    - *Rate of after-hours low urgency ED presentations was highest in Maryborough, Bundaberg, Gladstone and Hervey Bay*
    - *Consistently higher rates of after-hours low urgency ED presentations across all the age groups were evident for Bundaberg, Gympie-Cooloola, Hervey Bay and Maryborough*
- ***PPHs***
    - *Areas that are remote and very remote, most disadvantaged areas (SEIFA 1) and being Indigenous increased the risk of having high PPH due to all three types: vaccine-preventable, acute and chronic.*
    - *The SA3 areas with higher rates of total PPHs are Maryborough, Nambour and Central Highlands*
    - *Total vaccine preventable PPH separations were highest in Sunshine Coast University Hospital (647), followed by Rockhampton hospital (329) and Bundaberg Base Hospital (277)*
    - *Total acute PPH separations were highest in Sunshine Coast University Hospital (3,559), followed by Rockhampton hospital (1,483) and Bundaberg Base Hospital (1,366) and Hervey Bay Hospital (1,282)*
    - *Total chronic PPH separations were highest in Sunshine Coast University Hospital (3,857), followed by Rockhampton hospital (1,958) and Bundaberg Base Hospital (2,039) and Hervey Bay Hospital (1,717).*
    - *The SA3s with highest rates of total chronic PPH separations are: Maryborough, Central Highlands and Bundaberg*
    - *Highest PPHs associated with chronic conditions are :*
        - *Asthma: Nambour Burnett Caloundra*
        - *COPD: Maryborough Central Highlands Hervey Bay*
        - *Diabetes Complications: Maryborough Biloela Gympie-Cooloola*
        - *Hypertension: Burnette Bundaberg*
- ***Pre-mature deaths***
    - *Overall ASR of death rates and premature death rates (Aged 75 and under) were higher in Bundaberg, Burnett, Gympie-Cooloola. Hervey Bay, Maryborough and Rockhampton*

- *Potentially avoidable deaths are higher in Biloela, Bundaberg, Burnette, Gladstone, Gympie-Cooloola, Hervey Bay, Maryborough, Nambour, Rockhampton.*

- ***Gaps in health workforce:***
  - *Across the PHN: psychology, speech pathology, occupational therapy, social work, general practitioner, Indigenous health worker and diabetes educator.*
  - *Central Queensland HHS had 10 workforce gap ratings with the highest ratings for psychology, occupational therapy, and speech pathology.*
  - *Wide Bay HHS region showed workforce gaps for most occupations (except 5) with highest gaps for psychology, occupational therapy and speech pathology*
  - *Sunshine Coast HHS showed workforce gaps for most occupations (except 4) with highest gaps for speech pathology followed by social work and psychology workforce.*
- ***Cancer Screening***
  - *Bowel Cancer Screening rates for the PHN were higher except the lower screening rates for Central Highlands and Gladstone*
  - *Breast Screening rates for the PHN were higher except the lower screening rates for Noosa Hinterland*
  - *Cervical Screening rates for the PHN were similar to the national except lower screening rates for Gladstone*

The PHN community health and stakeholders' surveys *explored commonly occurring chronic disease management services and areas in which health service provision has gaps or needs improvement. The community survey identified that there is a need to improve access to the following services (17):*

- *mental health services (highest importance)*
- *diabetes management*
- *allied health care*
- *bulkbilling GPs*
- *better aged care facilities*
- *fully funded palliative care service*
- *more funding for health promotion, health education and preventive health i.e affordable healthy foods and sports facilities.*

9. Triangulation

The PHN is a large region with smaller areas (LGAs or SA3s) representing diverse socio-demographics and distribution of risk factors, disease prevalence and mortality. The services provided by various primary care service providers face multiple challenges such as rurality, low health literacy and lack of stable workforce. However, commissioning services to improve equity in access and availability is one of the aims for the PHN. The summary of health and services needs is provided under each chapter and an example of triangulation is provided below. As data is available on different geographical levels not all the information can be triangulated as below and qualitative synthesis of this information was the main driver behind listed priorities and options.

The PHN's Commissioning Framework provides a high-level outline that is applied across a continuum of services; services for people living with chronic conditions; and new models of care to suit the local context. It also provides investment to support practice and system-level change through workforce strengthening and uptake of new technology. The PHN commissioning is an iterative and collaborative process that requires a deep understanding of the evolving needs of the community and of key priorities that need to be delivered. It requires services to be commissioned to meet these needs and use the full capabilities of providers and community groups and importantly opportunities for collaboration and innovation to be identified and maximised to challenge thinking and consider the best way to meet needs.

The tables below summarise some of the health needs within the PHN along with socio-demographic factors. It is clear that to have an impact on avoidable hospitalisations and preventable deaths, the activities are required not only to improve the access to the services but also in the space of primary prevention.

Impact of overall socio-economic factors, rurality and changing demography on future health and service needs:

With higher population growth into 2031 across the PHN with Sunshine Coast HHS region having 25% growth predicted and aging population across the PHN, it is critical to understand the future needs.

- With aging population the demand on primary care and allied health services will rise
- Palliative care, health in home and sufficient residential aged care is required
- It is identified that the number of new general practitioners entering the market will not keep pace with increasing demand for healthcare. Identification of gaps in general practice services is critical for the PHN.
- Increased population indicates higher need for services across the life-course
- Certain areas with high proportion of children and young people require appropriate services that can address mental and physical health of these groups including considering a life-course
- With four LGAs within the PHN being 100% outer regional, rural or remote it possess challenges such as lack of stable workforce, limited access to specialist services and other allied health care. People from rural/remote areas seek treatments late and show advanced disease due to the delays in diagnosis. This can be seen from higher avoidable mortality due to chronic conditions in rural areas.
- High proportion of people from rural/remote areas have undiagnosed high blood pressure, high blood sugar levels and cholesterol. These three are risk factors for many chronic conditions and when obesity/overweight is added to this mix, can lead to metabolic syndrome responsible for CVD. (Metabolic syndrome is a condition that includes a cluster of risk factors specific for cardiovascular disease. The cluster of metabolic factors include abdominal obesity, high blood pressure, impaired fasting glucose, high triglyceride levels, and low HDL cholesterol levels.)
- Areas with high unemployment also have higher rates of smoking, drinking alcohol at risky levels and high psychological distress
- Areas with families with children that have no parent employed have higher proportion of children not performing well on one or more domains of the AEDC scale

- Challenges to Maximising Population Health Outcomes

To reduce the burden of chronic conditions and injuries overtime, a focus on prevention, both primary and secondary, is required. Avoidable morbidity and mortality is high within the PHN. E.g.

- High rates of smoking including maternal smoking in Wide Bay region could lead to future complex health issues for mother and babies
- Drinking alcohol at risky levels doesn't only impact health in terms of chronic conditions but drink driving causes motor vehicle crash injuries and leave life-long impacts. These impacts and associated disability is generally higher in young people indicating the need for education and health promotion activities.
- Some areas such as Gympie, Sunshine coast and Fraser Coast seem to have high stroke prevalence but low number of stroke units. Not receiving timely stroke treatment can lead to permanent disability or death. Stroke related deaths are higher Gladstone, Rockhampton and North Burnett.
- Chronic kidney disease has diabetes and high blood pressure as two of the main causes. CKD related hospitalisations and deaths increase with increasing age, rurality and low SES, indicating timely treatment can provide better quality of life for people with CKD.
- Prevalence of diabetes varies across the PHN and is not significantly different than the national rate, however, diabetes complications, hospitalisations and deaths are significantly higher in some areas. Central Highlands has lower rates of diabetes management plans across the PHN and areas with high diabetes rates have lower rates of use of diabetes related services (podiatry, diabetes educator etc). Low use of services can possibly indicate lack of services in the area or lack of access to the required services. High rates of diabetes complications indicate low health literacy, lack of availability of prevention services. Avoidable diabetes related deaths again indicate insufficiency of services and lack of knowledge regarding self-management practices.
- While asthma related hospitalisations are high in Gladstone, asthma plans are lowest in Gladstone LGA.
- Injury related deaths are very high in North Burnett and possibly rurality/lack of emergency services could be a reason.
- Population health outcome can be maximised by reducing chronic disease burden, increasing focus on prevention (primary and secondary), improving quality of life and improving behavioural antecedents of chronic conditions.
- Improved Efficacy and Sustainability in Health Care

Improved efficiency requires the services that are effective, have sufficient resources to address the increasing needs and better access to primary care that reduces demand on hospitals.

- Areas such as Sunshine Coast LGA that have better access to primary care including allied health services have lower rates of after hour service use
- **Use of urgent after hour GP services** is high in Bundaberg, Hervey Bay, Rockhampton and Gladstone while use of non-urgent after hour GP services was low across the PHN.
- Certain ares that show high proportions of chronic conditions and have socio-economic disadvantages also show high rates of lower urgency ED presentations all hours. SA3s with high rates are Gladstone, Bundaberg, Maryborough, Hervey Bay and Gympie-Cooloola. ED presentations that are lower urgency are used as a proxy measure of access to primary health care. Higher presentation rates may suggest a lack of access to GPs or other primary health services. Some of these presentations might be due to lack of primary care services and some might be due to lack of bulk billed general practice services.
- Breakdowns of potentially preventable hospitalisations by conditions or population subgroups can help to identify priorities for targeted policy interventions. Living in rural/remote areas and in disadvantaged regions are shown to have higher rates of PPHs. PPHs associated with asthma, diabetes, COPD, high blood pressure and total chronic conditions were higher within the PHN areas that are rural/remote

and people in low SES. SA3 regions such as Central highlands, Bundaberg, Burnett and Maryborough have this disadvantage and high PPHs associated with chronic conditions as well as acute conditions. High PPHs indicate lack of access to timely primary care.

- High premature deaths and potentially avoidable deaths also indicate lack of access to primary care as well as hospital care in timely manner. Overall ASR of death rates and premature death rates (Aged 75 and under) were higher in Bundaberg, Burnett, Gympie-Cooloola. Hervey Bay, Maryborough and Rockhampton. Potentially avoidable deaths are higher in Biloela, Bundaberg, Burnette, Gladstone, Gympie-Cooloola, Hervey Bay, Maryborough, Nambour, Rockhampton.
- Sustainable workforce is critical part of the efficient and effective health system. Rural/remote areas within the PHN struggle with constantly changing workforce and service provider concerns. The PHN has higher rates of PPHs, access to allied health workforce and specialist is a concern for the PHN. Across the PHN that has high prevalence of diabetes related hospitalisations and deaths, issues with young people and high developmental disabilities in certain areas ; there are high gaps in these specific services: psychology, speech pathology, occupational therapy, social work, general practitioner, Indigenous health worker and diabetes educator.
- Consumer input and satisfaction
- Information gathered on felt needs from the PHN using three different surveys clearly supports the quantitative conclusions that some indicators are improving however more work needs to be done to improve health and wellbeing of the population.
- Around 70% of the times the communication between GP and specialist is on time and there is 30% gap that needs to be filled
- While 1/4th of the PHN population felt that they waited longer than expected to see a specialist, around 4% were given incorrect medication. Having up to date medical records and MyHealth records are critical to avoid medicine mismanagement.
- Enhancing patient experience of care can include care tailored to individual needs, care that is coordinated and comprehensive, safe and effective, timely and care that improves self-efficacy of the patients so that they can manage their own health.

The two tables below bring various indicators across the PHN together to provide a complete picture of the health and service needs within the PHN. The impact of being disadvantaged is clear across various health indicators.

The low or high use of services requires to be interpreted carefully. High use might mean high need or access to the services in proportion to the need. In such cases, deep dives by the PHN are required to understand the local situation and to tailor the solutions.

Table 56: Triangulation of various indicators across the PHN, LGA

	Population and SES characteristics					Health Status		Selected Health Behaviours and biomedical risk factors				Selected Health conditions, prevalence				Selected Conditions Hospital admissions				
	Indigenous Population,2016	Outer regional, remote, or very remote areas,2016	People living in areas defined as low SEIFA,2016	Young people (15 to 29 years),2016	Older people (>60 years), 2016	People with a profound or severe disability and	Self-rated Health (fair/poor), 2019-20	Smoking .2020	Alcohol: lifetime risky levels, 2020	Overweight/obese, 2020	High Blood Pressure, 2017-18	Estimated number of people with diabetes mellitus 2017-18	Estimated number of people with heart, stroke and vascular disease	Estimated number of people with asthma	Estimated number of people with COPD 2017-18	Admissions for diabetes, persons - Public hospitals, 2018/19	Admissions for circulatory system disease, Public Hospitals, 2018-19	Avoidable admissions for chronic asthma, persons- Public hospitals, 2018/19	Avoidable admissions for COPD - Public hospitals, 2018/19	Admissions for all diagnosis of injury or poisoning, by external cause, persons- Public hospitals, 2018-19
	%	%	%	%	%	%	%	%	%	%	ASR per	ASR per 1	ASR per	ASR	ASR per	ASR per 1	ASR per 10 0,0	ASR per 1	ASR per 10 0,0 00	ASR per 10 0,0 00
Banana	4	100	17.2	16.6	21.0	3.1	16.0	14.3	22.7	67.0	23.7	5.3	4.8	12.6	3.7	185.7	2,445.8	121.1	420.5	2,318.1
Central Highlands	4.3	100	14	18.1	13.6	2.5	11.0	16.1	29.4	71.4	23.9	5.5	5.1	13.1	3.9	398.9	2,571.1	148.5	467.4	2,784.4
Gladstone	4.1	13.8	21.5	18.3	17.2	3.9	20.7	16.4	21.2	68.1	24.3	4.4	5.0	12.7	3.8	199.9	2,221.6	141.8	495.4	3,829.4
Livingstone	4.4	5.4	16.5	16.3	26.1	5.0	19.6	13.7	31.7	66.5	23.5	4.7	5.2	11.4	3.6	204.5	2,445.6	115.2	427.3	2,076.2
Rockhampton	7.4	2.4	39.1	21.1	20.6	5.6	21.8	15.4	20.6	67.9	23.9	5.3	5.2	12.9	4.0	198.0	2,458.6	96.5	362.3	2,924.4
Woorabinda	94.4	100	100	27.7	8.5	2.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.0	n/a	341.8	3,823.9	n/a	n/a	2,183.2
Bundaberg	4	4.4	49.5	16.5	31.2	8.0	23.2	14.8	24.7	69.0	23.6	5.5	4.8	12.6	3.9	199.9	1,743.6	163.5	410.9	3,838.9
Fraser Coast	4.2	0.4	59.4	13.8	35.7	6.7	23.9	14.0	22.9	67.8	23.8	5.4	4.8	13.1	4.0	218.4	2,348.4	136.4	513.7	2,552.2
North Burnett	6.5	100	57.1	15.6	31.6	9.4	22.9	15.9	21.7	71.8	24.3	6.2	5.3	12.7	3.0	280.4	2,405.2	227.4	511.5	2,475.7
Gympie	3.6	4.3	46.1	14.6	31.5	8.2	24.3	11.6	22.4	65.3	23.8	5.0	4.8	11.4	3.9	256.7	2,144.6	145.5	272.3	2,997.8
Noosa	1.5	0	5.8	13.3	33.5	5.1	11.0	10.4	26.1	54.2	22.6	3.2	3.9	12.9	3.0	74.9	999.4	51.4	92.0	1,838.6
Sunshine Coast	1.9	0	9.1	17.1	26.7	5.1	12.6	7.7	29.3	57.7	23.6	3.5	4.3	13.0	3.3	125.4	1,591.9	187.8	211.8	1,343.7

Table 57: Triangulation of various services indicators across the PHN, SA3 regions

	GP attendances (Total), 2018-19, per 100 people	GP After-hours (urgent), 2018-19, per 100 people	GP Chronic Disease Management Plan, 2018-19, per 100 people	Total Allied Health Attendances, 2018-19, per 100 people	All hours low urgency ED presentations, 2018-19, per 1,000 people	Total PPH, 2017-18, ASR per 100,000	Total Chronic PPH, 207-18, ASR per 100,000	Potentially Avoidable Deaths, 2018, ASR per 100,000
National	631.6	4.78	37.59	96	117.4	2,793	1,233	100.3
The PHN	664.97	6.25	48.25	112.59	115.6	3,672	1,542	
Biloela	569.12	n/a	30	53.86	16.0*	4,195	1,631	150.6
Central Highlands (Qld)	515.19	n/a	32.78	55.32	16.9*	4,462	1,867	119.7
Gladstone	559.65	7.75	31.87	78.55	191.0	3,128	1,470	155.3
Rockhampton	624.66	7.28	41.03	88.6	105.9	4,155	1,695	135.8
Bundaberg	650.22	12.22	48.62	110.33	196.1	3,896	1,765	158.5
Burnett	605.21	3.82	37.49	80.24	23.4	3,953	1,758	156.2
Hervey Bay	782.33	12.7	46.39	130.2	168.9	3,651	1,631	137.9
Maryborough	790.59	5.51	52.02	126.69	209.1	4,876	2,141	150.8
Buderim	642.53	4.79	47.2	122.8	64.8	2,947	1,084	93.0
Caloundra	752.11	3.93	55.72	137.83	74.6	3,622	1,415	77.1
Gympie - Cooloola	621.13	1.3	52.28	116.82	226.0	3,237	1,426	168.7
Maroochy	667.47	4.62	50.43	122.65	58.8	3,223	1,292	80.7
Nambour	685.42	3.23	57.49	131.5	116.3	4,526	1,943	135.6
Noosa	659.59	1.87	55.96	127.74	20.7#	2,810	1,156	95.3
Noosa Hinterland	643.67	1.08	61.02	127.9	32.8	2,676	1,178	92.7
Sunshine Coast Hinterland	698.88	1.77	56.48	133.16	70.3	3,469	1,366	84.7

Significantly higher and lower compared to Australia.
*Some areas have smaller population and possibly no local hospital available
Some areas have possibly higher access to after hour GP care and allied healthcare hence low ED non-urgent use

10. Issues and Options Analysis

Based on the health and service needs summarised throughout this document and the triangulation provided in the previous chapter, it is clear that to address the issues within the PHN, a population-based approch is required.

A population-based approach to healthcare goes beyond the traditional biomedical model and addresses the importance of cross-sectoral collaboration in promoting health of communities. By establishing partnerships across environmental health sector, education sector, primary care and public health sectors in particular, healthcare organisations can address local health needs of populations and improve health outcomes. Alongside clinical care, public health efforts, with a greater focus on health promotion and chronic disease prevention, can complement clinical care in order to provide populations with a comprehensive set of promotive, preventive and curative health services, thereby promoting overall population health.(142) Increasingly, healthcare systems around the world are facing persistent pressures that result in poor performance and growing inequities in care. These include a rising burden of illness attributable to major chronic diseases, as well as increasing costs and complexity of healthcare delivery therefore the shift from clinical models to the model of healthcare that prioritises wellness of populations is critical.(143) The models of care that are rooted in working in integrated healthcare space that talks with social care system to address the basic biopsychosocial indicators that have shown to be associated with ill health via low education attainment, unemployment, low health literacy, lack of sufficient money to provide secure environments for children etc are critical to address health on population levels.

When there are diverse needs across the region, place-based approaches that community members and stakeholders (citizens, industry, diverse non-government organisations and all levels of government) with a framework for identifying and responding to local needs and improving social, economic and physical wellbeing in a particular location become critical. The approach characterised by partnering and shared design, shared stewardship, and shared accountability for outcomes and impacts, can drive the vision that allows efficiency and sustainability in healthcare provision. This also allows long-term focus and flexibility to achieve targeted outcomes that are critical for the communities.[3]

The qualitative and quantitative data clearly indicates ***the social gradient in health*** of people who live in the PHN region. The social gradient in health is the phenomenon whereby people who are less advantaged in terms of socioeconomic position have worse health (and shorter lives) than those who are more advantaged. People living in the LGAs in which very high proportion of people live in most disadvantaged quintile or live in rural/remote areas have worse health outcomes.[4] Analysis of the data shows a steep inverse association between social class and health and mortality from a wide range of diseases. Therefore, addressing equity in health care is critical for the PHN.

Most importantly, it is obvious from the available data that family and community environments are as critical as having access to healthcare. ***A life-course approach to health encompasses strategies across individuals' lifespans*** that optimise their functional ability (taking into account the interdependence of individual, social, environmental, temporal and intergenerational factors), thereby enabling well-being. Properly applied, a life-course approach can increase the effectiveness of the healthcare in ensuring health and well-being for all at all ages. Its implementation requires a shared understanding by individuals and societies of how health is shaped by multiple factors throughout life and across generations. The World Health Organisation's proposed planning using life-course approach to health is presented in the figure below. (144)

[3] https://www.chde.qld.gov.au/about/initiatives/place-based-approaches
[4] Donkin A, 2014. Social Gradient. Wiley Online Library **https://doi.org/10.1002/9781118410868.wbehibs530**

World Health Organisation's planning health coverage using a life-course approach

Health at all life stages	Birth, neonatal period and infancy	Early and later childhood and adolescence	Youth and adulthood (main employment and reproductive years)	Older adulthood
Health-care needs (context specific)	Related to health issues, such as: (i) communicable and neglected tropical diseases; (ii) noncommunicable diseases and mental health; (iii) sexual and reproductive health; (iv) nutrition; (v) occupational health; and (vi) health emergencies Related to type of health-care services, such as: (i) preventative; (ii) curative; (iii) emergency; (iv) chronic disease management; (v) rehabilitative; and (vi) palliative services			
Health systems	Health service delivery platforms, such as: (i) community and cross-sectoral services; (ii) periodic outreach; (iii) first or primary level services; and (iv) referral level services Health systems strategies, such as: (i) integrated people-centred health services: (ii) the WHO health systems strengthening approach, involving strengthening foundations, a coherent institutional framework and supporting transformation; (iii) essential public health functions			
Enabling environment	Other social and environmental determinants of health such as families and communities, sociocultural norms, economics, politics, physical environments and sustainable development Principles in practice for the realization of rights, such as a human rights-based, gender-responsive, equity-driven approach to policies and programmes			

While developing the option for action below along with above theoretical frameworks, some national and state strategies have been considered along with evidence-based actions that have been successful in various locations. Any activities that will be implemented by the PHN will be considered carefully in terms of local needs and engagement of local community.

National digital health strategy[5] : Digital information is the foundation of high-quality healthcare. The benefits for patients are significant including hospital admissions avoided, fewer adverse drug events, reduced duplication of tests, better coordination of care for people with chronic and complex conditions, and better-informed treatment decisions. To achieve better patient healthcare and health outcome, the National Digital Health Strategy is establishing the foundations for a sustainable health system that constantly improves. It underpins and coordinates work that is already happening between governments, healthcare providers, consumers, innovators and the technology industry. The framework [6] clearly articulates the priority activities:

- My Health Record
- Secure Messaging
- Interoperability and Data quality
- Medicines Safety
- Enhanced models of care

[5] https://www.digitalhealth.gov.au/about-us/national-digital-health-strategy-and-framework-for-action

[6] https://www.digitalhealth.gov.au/sites/default/files/2020-11/Framework_for_Action.pdf

- Workforce and education
- Driving innovation

The National Action Plan for the Health of Children and Young People 2020-2030 (145) provides a roadmap for a national approach to improve and ensure the health and wellbeing of all Australian children and young people – providing them with the best start to life. The Action Plan builds upon COAG Health Council's Healthy, Safe and Thriving: National Strategic Framework for Child and Youth Health (Healthy, Safe and Thriving). Five priority areas have been identified to drive change and improve outcomes in order to ensure the health of Australia's children and young people:

- Improve health equity across populations
- Empower parents and caregivers to maximise healthy development
- Tackle mental health and risky behaviours
- Address chronic conditions and preventive health
- Strengthen the workforce

The National Men's Health Strategy 2020-2030 (146)includes three core objectives and associated actions that are designed to drive meaningful progress towards its goal.
These include a clear commitment to:

- Empower and support men and boys to optimise their own and each other's health and wellbeing;
- Build the evidence base for improving men's health; and
- Strengthen the capacity of the health system to provide quality appropriate care for men and boys.

Five priority health issues form the basis of the Strategy:

- Mental health;
- Chronic conditions;
- Sexual and reproductive health and conditions where men are over-represented;
- Injuries and risk taking; and
- Healthy ageing. The Strategy advocates for a life-course approach in tailoring interventions to engage and support Australia's diverse men and boys across all stages of their lives.

The National Women's Health Strategy 2020-2031(147) includes the principles and objectives that provide a frame for both the development of the Strategy itself and to guide the subsequent implementation of priorities and actions outlined in the Strategy. Key priorities and actions have been developed to drive change and improve health outcomes. The five priority areas are:

- Maternal, sexual and reproductive health – increase access to information, diagnosis, treatment and services for sexual and reproductive health; enhance and support health promotion and service delivery for preconception, perinatal and maternal health.
- Healthy ageing – adopt a life course approach to healthy ageing; address key risk factors that reduce quality of life and better manage the varied needs of women as they age.
- Chronic conditions and preventive health – increase awareness and prevention of chronic conditions, symptoms and risk factors; invest in targeted prevention, early detection and intervention; tailor health services for women and girls.
- Mental health – enhance gender-specific mental health awareness, education and prevention; focus on early-intervention; invest in service delivery and multi-faceted care.
- Health impacts of violence against women and girls – raise awareness about, and address the health and related impacts of violence against women and girls; co-design and deliver safe and accessible services.

- The National Strategic Framework for Chronic Conditions(148) is the overarching policy document for chronic conditions. It sets the directions and outcomes to help Australians live healthier lives through effective prevention and management of chronic conditions. It provides guidance for the development and implementation of policies, strategies, actions and services to address chronic conditions and improve health outcomes. While the Framework is primarily health focused, it recognises that the health sector must take a leadership role, where appropriate, to foster advocacy, engagement and partnering with external sectors to achieve its Vision. Relevant external sectors may include environment, housing, education, employment, transport and social services. The timeframe of the Framework is eight years (2017–2025), with a review proposed every three years.

The Framework:

- moves away from a disease-specific approach
- identifies the key principles for the effective prevention and management of chronic conditions
- supports a stronger emphasis on coordinated care across the health sector
- acknowledges and builds on work already in place that supports chronic conditions
- complements state-based, national and international policy for chronic conditions
- accommodates existing and new strategies and policies without changing the responsibilities of the Australian or state and territory governments
- acknowledges the important role that the health sector may take as a leader and advocate in working with other sectors to address the social, economic and environmental determinants of health; and
- provides flexibility to accommodate future and emerging priorities and allows for innovative solutions for the prevention and management of chronic conditions.

Opportunities, priorities, and options

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
1. Chronic Disease Prevention and Management			
High rates of avoidable hospitalisations and preventable deaths associated with chronic conditions **Priority Area:** Population Health **Priority Subcategory:** Access	Continue to provide access to no cost Allied Health services for communities with limited access and high need for those services through the Rural Primary Health Service (RPHS).	Reduction in low urgency ED presentations Reduction in avoidable hospitalisations Continuity of care Improved health literacy	PHN, HHS, NGOs
Priority Subcategory: Chronic disease	Promote and support the use of patient registers and recall systems and nurse-led clinics that enable better management for people with and at high risk of chronic disease		PHN, General Practice
Priority Subcategory: Early-intervention	Provide consistent health messages that address the common behavioural risk factors for chronic disease – tobacco smoking, physical activity, poor diet and nutrition, and risky and high-risk alcohol use		PHN, General Practice
Priority Subcategory: Chronic disease	Work collaboratively to develop and support approaches and community action that creates and supports health promoting environments		PHN, General Practice, HHS, NGOs
Priority Subcategory: Access	Work and plan collaboratively to increase access to cardiac, stroke and pulmonary rehabilitation services.		PHN, General Practice, HHS
Priority Subcategory: Multi-disciplinary care	Develop funding and organisational structures that support multi-disciplinary care, care planning, coordination and review		PHN, General Practice, HHS

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
2. Maternal, Child and Reproductive Health			
Life course approach is needed Pre-pregnancy, Antenatal and Postnatal Care, Infancy and Early years **Priority Area:** Population Health **Priority Subcategory:** Integrated Care	Facilitate an integrated system of care across the lifecycle continuum to ensure a seamless journey for pregnant women, children, young people and their families	Increased uptake of models of integrated care within the maternal, infant and child health system. Maternal smoking is reduced Reduced low birth weight Reduced infant and child mortality	PHN, General Practice, HHS, NGOs
	Promote perinatal mental health screening, assessment, early intervention strategies and treatment (or referral to treatment) as part of commissioned maternity care programs and services (i.e. compliance with best practice / standards).		
	Increase capacity of the maternity care workforce, primary care workforce and parents/caregivers to deliver effective care and interventions that improve maternal and infant health outcomes		PHN, General Practice, HHS, NGOs, HWQ
Social determinants of health impacting maternal and child health **Priority Area:** Population Health	Plan, co-design, and procure a provider to deliver health promotion program/s to improve knowledge on health services (health literacy, self-triage) among parents, carers, and school children	Improved health literacy among parents, carers, and school children Improved child development outcomes	PHN, General Practice, HHS, NGOs, Schools

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
Priority Subcategory: social determinants	Implement parenting skill development programs to improve parenting behaviours that support better development outcomes		PHN, General Practice, HHS, NGOs
Need for health promotion and early intervention **Priority Area:** Population Health	Work with schools and local communities to create age-appropriate health promotion programs	Increased childhood immunisation rates Improved AECD indicators	PHN, General Practice, HHS, NGOs, Schools
Priority Subcategory: Early intervention and prevention	Implement innovative models of care that support uptake of immunisation, including lay health workers and peer supports in primary and community health care		PHN, General Practice, HHS
3. Young People's Health			
Higher prevalence of mental health disorders among young people **Priority Area:** Mental Health	Use evidence-based approach in prevention and treatment for youth mental health	Improved youth mental health Suicide associated deaths are reduced among youth	PHN, General Practice, HHS, NGOs, Headspace, other mental health service providers
Priority Subcategory: Early intervention and prevention	Increase preventative, early intervention and targeted intervention to support children and young people in their **mental health** needs.		PHN, General Practice, HHS, NGOs, Headspace
	Improve and expand psychosocial services and suicide prevention interventions. Improve and expand psychosocial services and suicide prevention interventions and explore trialling		PHN, General Practice, HHS, NGOs, Headspace, other

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
	social prescribing services to adjunct clinical sessions. (https://www.bmj.com/content/364/bmj.l1285.long) Continue to monitor emerging research on novel mental health interventions proving effective in prevention and treatment.		mental health service providers
Lack of youth specific health services **Priority Area:** Health Workforce **Priority Subcategory:** Access	Increase availability and utilisation of health services and programs which address the health needs of young people	Improved youth health indicators	PHN, General Practice, HHS, NGOs, Headspace, other mental health service providers
	Train more youth mental health workers		PHN, HWQ
	Promote young people's engagement in health promoting activities		PHN
Risky behaviour and lack of health seeking knowledge and practice among young people **Priority Area:** Population Health **Priority Subcategory:** Health Literacy	Raise awareness, self-efficacy, and attitudes of young people (aged 12 - 25 years) towards reducing risky behaviours such as smoking, drug and alcohol use.	Improved health literacy among young people. Youth specific and youth friendly health services are implemented effectively.	PHN, General Practice, HHS, NGOs, Headspace, other mental health service providers
	Improve sexual and reproductive health literacy for young people (aged 12 - 25 years).		
	Provide health professionals, educators and youth workers with tools and skills to promote behaviour change in adolsecents.		PHN, General Practice, HHS, NGOs, Headspace, other mental health service providers

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
4. Older People's Health			
Culturally appropriate elderly care **Priority Area:** Aged Care **Priority Subcategory:** Appropriate care (including cultural safety)	Provide culturally appropriate health care for older Aboriginal and Torres Strait Islander people and older CALD population.	Improved accessibility to elderly care by older Aboriginal and Torres Strait Islanders and CALD people.	PHN, General Practice, HHS, NGOs, ACCHOs
Higher prevalence of multimorbidity and PPH **Dementia:** The PHN regions projected to experience increases in dementia prevalence. **Priority Area:** Aged Care **Priority Subcategory:** Integrated care	Implement integrated service model for the care of older people within the PHN region.	Implementation of new service delivery models to support improvements in the delivery of primary care services to older people. Improved quality of life for older people.	PHN, General Practice, HHS
	Promote and implement community-based services, transition care, end of life support services, and mental health and services specific to older people.		PHN, General Practice, HHS, RACFs
	Improve access and availability of dementia care with special focus on areas with highest rates of dementia in the PHN region (Rockhampton, Banana, Sunshine Coast, North Burnett and Bundaberg).		PHN, General Practice, HHS, RACFs
Workforce capability associated with Aged care services **Priority Area:** Aged Care	Enhance skills within the primary health care workforce to detect, manage and treat issues affecting the health and wellbeing of older people through:	Enhanced knowledge and skills related to specific health conditions in the elderly population among the primary care workforce and RACFs	PHN, General Practice, HHS, RACFs, HWQ

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
Priority Subcategory: Workforce	- Provision and promotion of training opportunities in relation to over 75 health assessments, dementia detection and treatment, palliative care, advance care planning, falls prevention and significant policy and process changes e.g. My Aged Care - Facilitating access to specialist aged care by primary care services - Strengthening workforce roles such as nurse practitioners who can provide high level, independent aged care expertise and services	Improved attendance at continuing professional education focused on aged care Improved access to multi-disciplinary consultation services by older people	
	Establish multi-disciplinary consultation in-reach services to GPs and RACFs to increase the level of community support required for people.		PHN, General Practice, HHS, RACFs, HWQ
Key need to address social isolation and loneliness **Priority Area:** Aged Care **Priority Subcategory:** Health promotion	Invest in / support health promotion and social support initiatives that address social isolation/ loneliness, provide social engagement opportunities, and promote value and contribution of older people	Improved community connectedness	PHN, NGOs
Address injuries due to fall **Priority Area:** Aged Care **Priority Subcategory:** Early intervention and prevention	Work with HHSs and RACFs to prevent falls	Reduction in fall related injuries and maintain of QoL	PHN, General Practice, HHS
	Co-design and delivery of a multidisciplinary home-based and/or community-based falls prevention programme/s or initiatives (that aim to improve musculoskeletal health / prevention of frailty and	Reduction in falls	PHN, General Practice, HHS, RACFs

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
	falls, self-efficacy and capacity, reducing risk of fall or reducing harm from a fall, as well as home-based assessment and screening) targeting people from middle age and into older age		
Need access to affordable health promoting environment **Priority Area:** Aged Care **Priority Subcategory:** Social determinants of health	Ensure affordable and accessible health promoting environment and interventions appropriate for older people are in place	Increased number of older people practicing health promoting activities	PHN, General Practice, HHS, NGOs
	Collective actions / strategies to address social determinants of health that impact healthy ageing outcomes (e.g. financial security, affordable housing, social connection, family relationships and Elder Abuse/F&DV).		PHN, Other government departments
5. Workforce			
Promote chronic disease prevention and management **Priority Area:** Workforce **Priority Subcategory:** Practice support	Work with training organisations and professional bodies such as universities, Health Workforce Queensland and the Vocational Education and Training sector to strengthen workforce capacity to deliver person-centred early detection, treatment and management of chronic conditions Support actions to develop and retain health professionals with expertise in chronic conditions	Enhanced capacity to prevent, detect and manage chronic conditions across the local region Reduced incidence of chronic conditions over the long term Reduction in secondary complications associated with chronic conditions	PHN in collaboration with universities, workforce peak bodies and professional colleges and associations
Improve knowledge about available workforce **Priority Area:** Workforce	Work with health care providers and health consumer organisations to increase access to information and resources on the range and use of health services available across the region, e.g.	Improved health literacy among consumers	PHN

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
Priority Subcategory: After-hours	Emergency Departments, After Hours services - within the PHN region	Improved ability to navigate health system	
Improve access to primary care Services **Priority Area:** Workforce **Priority Subcategory:** System integration	Encourage a broader spectrum of health care workers, including pharmacists, patient navigators, and community health workers to help people manage their own health Use health promotion, education and outreach to improve health literacy and improve the capacity of individuals and communities to better manage their own health Develop and implement strategies to improve access to health services, including increasing After Hours primary health care services	Improved health outcomes for vulnerable groups e.g. people of social disadvantage, people living with disability, Indigenous peoples and homeless people Improved quality of life for people with chronic conditions Reduced co-morbidity among people with chronic conditions Improved access to after-hours care in areas of need. Reduction in Category 5 emergency department presentations	PHN, General Practice, HHS
Enhance workforce planning **Priority Area:** Workforce **Priority Subcategory:** System integration	Encourage health service providers, health workforce planners and support agencies to develop and implement local strategies to enhance workforce capacity and retention within the region Address workforce and geographical isolation related issues in relation to providing general practice support	Sufficient number of primary care workforce in the PHN catchment Strong and productive relationships between professional workforce bodies and the PHN Equitable distribution of primary healthcare providers across the catchment	PHN,HHS and HWQ
Gaps have been identified in some health workforce	Targeted programs with high schools and universities. Rural and regional placements.	Reduced gap in health workforce	PHN, HWQ, HHS

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
Priority Area: Workforce **Priority Subcategory:** Access	Grow your own type program – better retention rates for rural and remote areas. Many of these are small businesses – small business support for rural and regional Psychologists. Support increase use of telehealth psych, speech pathologist and OTs until we can increase local supply.		
Enhance workforce capacity to meet the needs of vulnerable population groups **Priority Area:** Workforce **Priority Subcategory:** Vulnerable population	Strengthen the capacity of primary health care providers to meet the health needs of people with disabilities, LGBTI, homeless and disadvantaged groups through the provision and promotion of information, resources and education	Improved confidence and competency among health service providers to deliver health services to various vulnerable population groups More responsive health care services to meet the needs of vulnerable populations	PHN, HHS
6. System Integration and collaboration			
Work with care providers to develop and implement strategies to improve integration and continuity of chronic disease prevention, early detection and management and promote multidisciplinary care planning, coordination and review.	Establish integrated models of chronic disease care between primary, secondary and tertiary health service providers Support the establishment of chronic care coordinators within general practice Supporting development of HealthPathways	Improved awareness and knowledge regarding health and wellbeing	PHN, General Practice, HHS, NGOs and other service provider organisations

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
Priority Area: Population Health **Priority Subcategory:** System integration	Develop integrated care strategy through established Partnerships to facilitate and progress integrated care to improve chronic disease related health outcomes		
Co-design solutions to improve health literacy **Priority Area:** Population Health **Priority Subcategory:** Health literacy	Develop partnerships with consumers for the development of better healthcare systems Improve health literacy to ensures that consumers can fully participate and that the health system and healthcare organisations are oriented to support such partnerships Work with local organisations to develop effective health promotion campaigns targeting chronic conditions and their underlying behavioural and environmental drivers, e.g. tobacco smoking, physical activity, poor diet and nutrition, and risky and high-risk alcohol use Partners with local organisations to develop and implement preventive strategies for high-risk groups across the region Support health services to identify opportunities to promote healthy living by identifying and addressing risk factors for chronic conditions, and support for self-management.	Improved ability to make decisions and act to manage health Reduction in proportion of people with chronic disease related risk factors Patients feel supported and empowered to improve their own health Improved uptake of 45 to 49-year-old health checks Increased in knowledge and awareness of risk factors among target groups for chronic conditions Increased early identification of elevated risk for chronic conditions	PHN, General Practice, HHS, NGOs and other service provider organisations

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
	Encourage general practices to develop chronic disease plans		
Ensure safe and quality care **Priority Area:** Population Health **Priority Subcategory:** Palliative Care	Establish collaborative partnerships between organisations to deliver flexible and responsive care Promote and support the development of service options such as Palliative Care Partnerships that enable people to receive care in their place of choice and avoid hospital admission Encourage service providers involved in the provision of aged care services to share knowledge and learning and work more collaboratively Identify ways to better integrate services within local communities, especially between residential aged care facilities, general practices and hospital services	Enhanced access to palliative care services in community-based settings Improved integrated of aged care services within local communities Reduced fragmentation of palliative care health system	PHN, General Practice, HHS, NGOs, RACFs and other service provider organisations
Create locally based solutions to improve integration **Priority Area:** Population Health **Priority Subcategory:** System integration	Foster and develop local service hubs and integrated service models via partnerships to maximise the use of available community resources	Improved efficiency of primary care service delivery models Improve access to youth related primary health care services	PHN, General Practice, HHS, NGOs and other service provider organisations

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
7. Health Intelligence and Data Analytics			
Develop data analytics capacity **Priority Area:** Digital Health **Priority Subcategory:** Other – quality improvement	Use available data resources to promote comprehensive collection of data Initiate automated internal reporting Use data to inform health service planning (e.g. integration partnerships and PPHs) Use data platforms to monitor commissioned services activity and quality Support General Practice to understand their population health data and to use these data to drive quality improvement. Continue to work with PHNs nationally to advance Primary Health Insights, ensuring data privacy, accuracy and leveraging off each other's work to use data more intelligently and efficiently.	Better quality data collected from service providers A portal that stores internal service provider datasets is created Data is analysed to inform the commissioning and quality improvement processes	PHN
Increase the use of eHealth **Priority Area:** Digital Health **Priority Subcategory:** Healthpathways	Work with primary health care providers to identify opportunities to improve uptake of telehealth capabilities as a way of optimising access to health care, especially in the primary care and aged care services sectors	Improved uptake of telehealth by primary care providers Improved knowledge regarding available telehealth services	PHN, General Practice

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
	Encourage and support primary health care providers to use the MyHealth Record as a way of improving accessibility of patient information Develop a digital health strategy	Increased uptake and use of MyHealth Records Better understanding of data related practices within the PHN Frequent use of and increasing use of health pathways solutions	
8. Governance and Clinical Governance			
Quality Improvement: Improving accreditation standards for general practices to encourage quality improvement and identify opportunities to make changes that will increase quality and safety for patients. **Priority Area:** Other- clinical governance **Priority Subcategory:** Practice support	Work with providers to gather better quality data and information Support quality improvement processes within primary care Provision, support and training for reporting services Support practices to track chronic and complex patients	Improved practice performance in accreditation Improved quality of care Improved quality of data collected Improved benchmark reporting More commissioned services accredited or self-assessed against key standards (e.g. MH standards)	PHN
Ensure continuation of clinician-led workforce that enables PHNs to make informed decisions	Seek guidance from clinical councils and other clinical stakeholder groups to ensure PHN is commissioning locally appropriate solutions.	Continue commissioning health services with providers who have the appropriate capacity and expertise to deliver safe care	PHN

Priority	Possible Options	Expected Outcome	Potential lead agency and opportunities for collaboration and partnership
Priority Area: Other- clinical governance **Priority Subcategory:** Workforce			
Clinical risk management to ensure that service providers have the capacity to meet legislative requirements and national and jurisdictional standards when designing best practice for their service **Priority Area:** Other- clinical governance **Priority Subcategory:** Other – quality improvement	Ensure policies, processes and systems accurately capture clinical components and have realistic data requirements Ensure clinical events involving commissioned services are captured and assessed timely by developing a data system that supports receiving, escalating, investigating, and resolving clinical events Ensure timely service commencement and in case of approved services not being able to deliver services as expected; seek alternative pathways Undertake contract management reviews to ensure compliance with the clinical quality assurance policies	Framework developed and approved by the executive management team A data system built in folio that improves efficiency of response Improved quality of care Ensured quality care provided in timely manner Improvement in compliance overtime	PHN

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